

VIETNAMESE Journal of
Primateology

CHUYÊN ĐỀ LINH TRƯỞNG HỌC VIỆT NAM

ISSN 1859-1434



VOLUME 3 - ISSUE 3
NOVEMBER 2021

Vietnamese Journal of Primatology

EDITOR

Tilo Nadler

Wildlife Consultant, Vietnam

CO-EDITORS

Ha Thang Long

Frankfurt Zoological Society, Vietnam

Van Ngoc Thinh

WWF, Vietnam

Christian Roos

German Primate Centre, Göttingen, Germany

EDITORIAL BOARD

Hoang Minh Duc

Vietnam Academy of Science and Technology, Southern Institute of Ecology,
Ho-Chi-Minh-City, Vietnam

Le Khac Quyet

Fauna & Flora International, Hanoi

Nguyen Hai Ha

National University of Forestry, Xuan Mai, Hanoi, Vietnam

Nguyen Xuan Dang

Institute for Ecology and Biological Resources, Hanoi, Vietnam

Herbert H. Covert

University of Colorado, Boulder, USA

Govinda Lienart

Three Monkeys – Wildlife Conservancy, Belgium

Ulrike Streicher

Wildlife Consultant, Eugene, USA

Larry Ulbarri

University of Oregon, Eugene, USA

Catherine Workman

National Geographic Society, Washington, USA

© German Primate Centre. All rights reserved. No part of this publication may be reproduced in any form or by any means, without prior written permission of the publisher.

Vietnamese Journal of Primatology (ISSN 1859-1434) is a peer-reviewed open access journal. The subscription price outside Vietnam is \$20.00 including shipment (for one copy). The journal can be ordered from the Editorial Office, Cuc Phuong, Ninh Binh Province, Vietnam or by mail: <t.nadler@hust.edu.vn>.



The **Vietnamese Journal of Primatology** is produced with support from German Primate Centre, Göttingen.

Cover: Assamese Macaque (*Macaca assamensis*). Photo: T. Nadler.

The history of Vietnamese Primate Action Plans and the implementation of the “Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030” – Success or Disaster?

Tilo Nadler

Three Monkeys Wildlife Conservancy, Cuc Phuong Commune, Nho Quan District, Ninh Binh Province, Vietnam
<t.nadler@hust.edu.vn>

Key words: Primate Action Plan Vietnam, Implementation.

Summary

There have been several attempts to create Primate Action Plans for Vietnam. However, the first two Action Plans ever finalized and published were for the Tonkin-shub-nosed monkey. Unfortunately, the local population of this species was exterminated in the area while the Action Plans was being developed. Finally, a very detailed and comprehensive ‘Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030’ was compiled in May 2017 and issued with a Decision of the Prime Minister. The paper presents an overview of the historical attempts to establish Primate Action Plans for Vietnam. The paper also provides an evaluation of the implementation progress of the ‘Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030’, now halfway through its set timeline.

The evaluation led to the following main conclusions:

1. The newly presented ‘Assessment on the Implementation of the Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030’ shows a very low level on implementation of the planned actions. The rating shows that 21% of the planned actions were ‘Not implemented’ at all, and only 50% on a ‘Low level’. But the assessment is still too generous in the ranking. With a more objective and stricter assessment, this value would more truthfully flag about 70% of the set actions as ‘Not implemented’.
2. The implementation of the ‘Primate Action Plan’ completely lacks a central leadership, organization, body, and control. The planned three leading bodies as advisory boards – the Steering Committee, the Vietnamese Primatological Society, and the Primate Technical Working Group factually don’t exist.
3. So far, there has been actually no consensus about the use of governmental funds for projects considered as a priority. A very large amount of the available governmental funds, a total of 16,226,700,000 Billion VND (about 700,000 USD), were spent for disputable survey projects, obviously without consultations with organizations and NGO’s working on primate conservation. More than one-third of the total budget (5,440,000,000 VND, about 240,000 USD) was spent only for macaque surveys in only three protected areas (Ben En National Park, Pu Luong and Pu Huong Nature Reserves).
4. The remaining tasks until the completion of the ‘Urgent Primate Action Plan’ are now gigantic and will require a drastic change in its implementation approach. This if Vietnam wishes to reach its set missions until 2025 and thereby avoid the ongoing and irreversible decline of the primate fauna in Vietnam.

Lịch sử các Kế hoạch Hành động bảo tồn thú Linh trưởng ở Việt Nam và việc thực hiện “Kế hoạch Hành động Bảo tồn Khẩn cấp Các loài Linh trưởng ở Việt Nam đến năm 2025, Tầm nhìn 2030” - Thành công hay Thảm họa?

Tóm tắt

Trong lịch sử đã có một số nỗ lực xây dựng Kế hoạch Hành động bảo tồn Linh trưởng cho Việt Nam. Tuy nhiên, hai bản Kế hoạch hành động đầu tiên từng được hoàn thiện và công bố đều dành cho loài Voọc mũi hếch. Thật không may, một số quần thể của loài này đã bị tiêu diệt trong khu vực khi các Kế hoạch Hành động đang được xây dựng. Gần đây, “Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030” rất chi tiết và toàn diện đã được xuất bản vào tháng 5 năm 2017 kèm theo quyết định của Thủ tướng Chính phủ Việt Nam. Bài báo trình bày tổng quan về những nỗ lực lịch sử nhằm thiết lập các Kế hoạch Hành động Linh trưởng cho Việt Nam. Bài báo cũng đưa ra đánh giá độc lập về tiến độ thực hiện ‘Kế hoạch hành động bảo tồn khẩn cấp các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030’, hiện đã đi được nửa chặng đường thời gian.

Đánh giá dẫn đến các kết luận chính sau:

1. Theo một báo cáo đánh giá của nhóm chuyên gia về kết quả thực hiện “Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030” mới được trình bày cho thấy mức độ thực hiện các hành động theo kế hoạch còn rất thấp. Báo cáo của nhóm chuyên gia cho thấy 21% hành động đã lên kế hoạch là “Không được thực hiện” và 50% thực hiện ở “Mức độ thấp”. Nhưng đánh giá vẫn còn quá hào phóng. Với đánh giá khách quan và chặt chẽ hơn, khoảng 70% các hành động đã lên kế hoạch nên xếp vào mức độ “Không được thực hiện”.
2. Việc thực hiện “Kế hoạch Hành động Linh trưởng” hoàn toàn thiếu sự lãnh đạo thống nhất, có tính tổ chức, và sự kiểm soát. Thực tế cho thấy ba cơ quan được quy hoạch với chức năng lãnh đạo và cố vấn gồm: Ban chỉ đạo, Hiệp hội Linh trưởng học Việt Nam và Nhóm công tác kỹ thuật về linh trưởng đã hoạt động không hiệu quả, thiếu phối hợp.
3. Cho đến nay, thực tế vẫn chưa có sự thống nhất về việc sử dụng vốn chính phủ cho các dự án được coi là ưu tiên. Một lượng rất lớn ngân quỹ chính phủ, tổng cộng 16.226.700.000 tỷ đồng (khoảng 700.000 USD), đã được chi cho các dự án khảo sát gây tranh cãi, và rõ ràng là không có sự tham vấn minh bạch của các tổ chức trong nước và tổ chức phi chính phủ làm việc về bảo tồn linh trưởng. Hơn một phần ba tổng kinh phí (5.440.000.000 đồng, khoảng 240.000 USD) được chi cho các cuộc điều tra khi ở ba khu bảo tồn: Vườn quốc gia Bến En, Khu bảo tồn thiên nhiên Pù Luông và Pù Huống.
4. Các nhiệm vụ còn lại cho đến khi hoàn thành “Kế hoạch hành động khẩn cấp về bảo tồn thú linh trưởng Việt Nam” là rất lớn, đòi hỏi một sự thay đổi mạnh mẽ trong phương pháp thực hiện. Nếu Việt Nam mong muốn đạt được các mục tiêu đã đặt ra trong bản kế hoạch cho đến năm 2025, cần có một sự đánh giá và thay đổi nghiêm túc. Chỉ có như thế mới giúp tránh được sự suy giảm liên tục và không thể phục hồi của khu hệ thú linh trưởng ở Việt Nam.

Introduction

With 25 primate taxa, Vietnam has the distinction of being home to the highest number of primate species on the Southeast Asian mainland. Nevertheless, with 90% of the primate species in Vietnam being threatened with extinction, the country is no exemption to the ongoing global biodiversity collapse (Nadler & Roos, 2017). As a result, an increasing number of species are being listed by the IUCN Red List as ‘Critically Endangered’, including the three Vietnamese endemic species, the Cat Ba langur (*Trachypithecus poliocephalus*), the Delacour’s langur (*Trachypithecus delacouri*), and the Tonkin snub-nosed monkey (*Rhinopithecus avunculus*). The Cat Ba langur is with less than 70 individuals undoubtedly one of the world’s rarest primate species. Furthermore, five primate species

found in Vietnam have for many years commonly been listed under the ‘25 World’s Most Endangered Primates’ (Mittermeier et al. 2012). It means that at least 20% of the world’s most endangered primates are belonging to Vietnam’s fauna.

Despite a law system which puts all primate species under strict protection, a high and still out-of-control poaching exacerbates the situation. There is an urgent need for strong conservation measures to avoid the extermination of species that are under the nation’s accountability. With the attempt to support protection and conservation, a great number of recommendations, laws and ministerial decisions were passed during the last twenty years, but all lacking appreciable improvement to truly ensure biodiversity on-the-ground protection.

In 1977 Sir Peter Scott, then Chairmen of the IUCN Species Survival Commission asked all Specialist Group Chairmen to prepare Global Conservation Strategies for the animal groups for which they were responsible. This was the impetus to create Action Plans as guidance to channel conservation activities, to set priorities, to raise targeted funds, to establish urgent conservation measures and to involve stakeholders, including governmental agencies and NGOs. The development of Primate Action Plans has now quite a long history in Vietnam. The effect of these plans should be evaluated.

Development and implementation of Primate Action Plans in Vietnam

ASIAN ACTION PLAN FOR PRIMATE CONSERVATION: 1987-1991

The IUCN/SSC Primate Specialist Group induced the compilation of the first Action Plan for Asian primates (Eudey 1987; Fig. 1). The plan provided an overview of the primate species, their status, conservation, and protection measures for 18 Asian countries. Hereby, for Vietnam 14 primate species were identified and five of these species were given high priority for conservation activities. Two broad projects were recommended: 1) a nationwide survey of remaining wild primate populations, and 2) support for the management and protection of existing protected areas. Little information was available regarding the status of most species and the protected areas in which they might occur, making it challenging to provide recommendations that were more species-specific for conservation action. Independent from this Action Plan, some intensive primate surveys started in the mid 1990s when the country opened the doors for activities of foreign NGOs. The knowledge about distribution, biology, and systematics accumulated but also concerns about species status and threats.

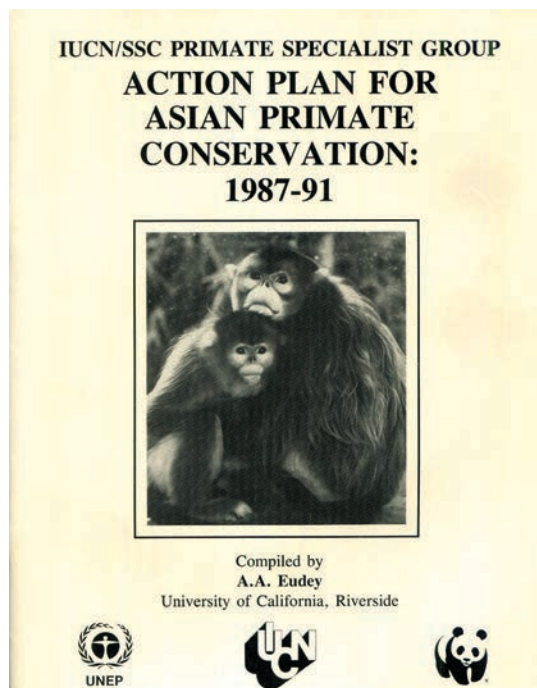


Fig.1. The first action plan including Vietnamese primates – 1987 to 1991.

A CONSERVATION ACTION PLAN FOR THE PRIMATES OF VIETNAM: 2001-2006

The development of a comprehensive Action Plan for all Vietnamese primates was planned by the IUCN/SSC Primate Specialist Group and Conservation International, which started with a workshop in 1998. Financial support for the preparation of the Action Plan was provided by Conservation International and a grant from the Margot Marsh Biodiversity Foundation. The Institute of Ecology and Biological Resources provided office space, facilities, and personnel support. With the results of surveys and molecular-genetic research, the number of primate taxa known to inhabit Vietnam

was increased to 19 species. A final draft of the Action Plan was presented in July 2001 (Boonratana et al. 2001). But the Action Plan contained more or less only very general recommendations and no species-specific actions. Finally, this Action Plan was not recognized as an adequate tool to support primate protection and conservation in Vietnam and was therefore not approved by Conservation International to be published.

A CONSERVATION ACTION PLAN FOR THE TONKIN SNUB-NOSED MONKEY IN VIETNAM – 2006

The Tonkin snub-nosed monkey, endemic to Vietnam, was already believed to be extinct until the species was rediscovered in 1992 in an area of northern Vietnam (Ratajszczak et al. 1990). First surveys finally confirmed the existence of small populations in two areas, the Na Hang and Cham Chu Nature Reserves, prompting the start of protection and conservation projects (Boonratana 1998; Boonratana & Le Xuan Canh 1998). 1997 started with considerable budgets several projects: the 'Tonkin snub-nosed Conservation Project' supported by Allwetterzoo Münster, the Zoological Society for the Conservation of Species and Populations and Primate Conservation Inc., in 1998 the Na Hang Rainforest Conservation Project by Fauna & Flora International, following an UNDP project, the PARC project (Protected Areas for Resource Conservation) from 2002 to 2004 (Boonratana 1998; Martin 2004; Wolters 2004; Dine 2012). To channel conservation activities, an Action Plan for the Tonkin snub-nosed monkeys was developed (Le Xuan Canh & Booratana 2006; Fig. 2). However, the construction of a water power plant adjacent to the reserve in 2003, and the move of about 10,000 construction workers into the area resulted in a sharp decrease of the primate population. As a consequence, none of the recommended measures in the Action Plan were executed.

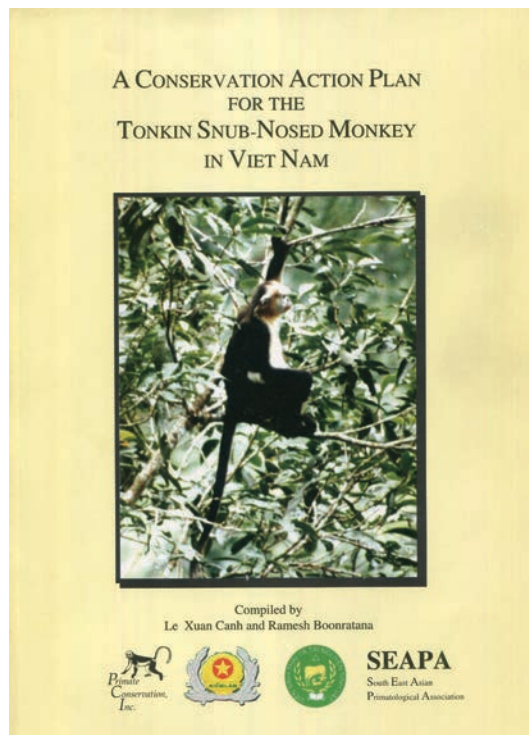


Fig.2. The first action plan for the Tonkin snub-nosed monkey - 2006.

SPECIES CONSERVATION ACTION PLAN

Local-based conservation of Tonkin Snub-nosed Monkey at the Na Hang Nature Reserve / 2013-2017

Despite the population of the Tonkin snub-nosed monkey in Na Hang Nature Reserve was reduced in 2010 to a total of 22-26 individuals (Thach Mai Hoang 2011) and the Conservation Action Plan 2006 for the species was never implemented a new action plan was developed and prepared based on a number of meetings and polls in 2011/2012 by the People Resources and Conservation Foundation (PRCF) (Fig. 3). The goal of this Species Conservation Action Plan was again to improve the management of Na Hang Nature Reserve through collaboration between local communities and other key stakeholders for long-term sustainable development and to stabilize the nationally and globally critically endangered population of Tonkin snub-nosed monkey at this site. The action plan was not implemented, and the tiny Tonkin snub-nosed population most likely exterminated.

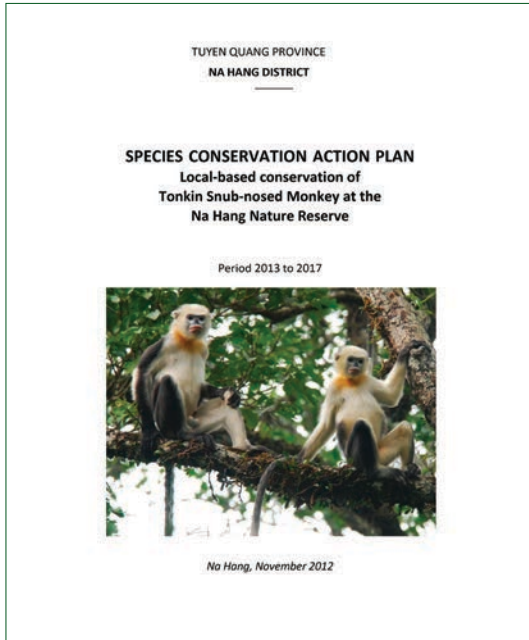


Fig.3. The second action plan for the Tonkin snub-nosed monkey - 2013 to 2017.

Ministry of Natural Resources and Environment. A first draft of the Action Plan was distributed in early 2016, followed by several improved versions. The Prime Minister approved the final plan with the Decision 628/QĐ-TTg on 10th May 2017. This Primate Action Plan (PAP) is a comprehensive and detailed document that provides an excellent guideline for primate protection and conservation. It contains not only general instructions and procedures, but also priority actions for each of the 25 Vietnamese primate taxa (Annex 1).

ASSESSMENT ON IMPLEMENTATION OF THE URGENT CONSERVATION ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, WITH A VISION TO 2030.

The Decision of the Prime Minister's approval of the 'Urgent Conservation Action Plan' (Decision 628/QĐ-TTg) demands periodical reports to the Prime Minister of the Action Plan's implementation. A first Primate Action Plan Report evaluating the degree of implementation (also referred here as PAP Report) was compiled with the support of the German Development Cooperation GIZ, under the framework of the Programme on Conservation and Sustainable Use of Forest Biodiversity and Ecosystem Services in Vietnam (Le Khac Quyet & La Quang Trung 2021). The 'Assessment' bear the date December 2020, however, it was released in August 2021 (Annex 2). The 'Assessment' reflects the activities for the Action Plan halfway the planned timeline.

Implementation issues of the URGENT CONSERVATION ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, VISION 2030

The Primate Action Plan is well structured and allows a detailed assessment about the implementation for the planned activities, even if a number of tasks may only be assessed in a descriptive manner and not always quantitatively.

There are three missions demanded in the Action Plan:

1. Five Specific Objectives (Pt. 3.3. – pages 37/38)
2. Eight Tasks and Solutions with a total of 37 Actions (Pt. 3.4 – pages 12 to 50)
3. Priority Conservation Actions for each primate species (Annex 4 – page 67 to 91)

Surprisingly, the PAP Report assessing in which measure the Action Plan has been implemented so far only evaluates mission 1 and 2 while mission 3 is being ignored (Le Khac Quyet & La Quang Trung 2021). But an implementation status for primate conservation in priority sites is assessed in the report. It is however a challenging task to assess progress for priority sites, given that there are no baseline, specific actions or requirements stipulated for priority sites in the Action Plan.

As level to assess the implementation of a specific objective or task, the PAP Report used four categories: Not Implemented – Low – Medium – High. The published rating about the implementation for all requested activities shows following picture:

The five specific objectives are assessed with an implement level:

2 objectives – Medium level

3 objectives – Low level

The specific 37 Action Plan Activities of the 8 Tasks and Solutions are assessed with an implement level:

Not implemented 8 actions = 21%

Low level implemented 19 actions = 50%

Medium level implemented 8 actions = 21%

High level implemented 3 actions = 8%

Comments on the rating of the actions listed as 'Low level implemented'

During half of the planned timeline about 71% of all planned actions are implemented on a low level or not at all and only 29% implemented at a higher level. This is a very low implementation rate halfway the timeline. However, this rating draws a wrong picture about the real situation. The rating is fixed on a minimum of activities for each objective or action. For example: if an absolute minimum of one action is NOT realized but already discussed it's already rated as 'low level' – even if the activity has actually never been touched.

Some examples are here provided to illustrate the rating in the PAP Report for the five objectives:

Objective 2 (Action Plan 3.3) – rated as 'Low level implemented':

Description objective: To improve law enforcement; to prevent illegal hunting, trapping and trade of primates to 2025 and reduce by 70% illegal hunting activities of primates; to develop at least three standard rescue centers for the rescue and release of primates.

Actual results: There is currently no trend of a recognizable reduction of the illegal trade – see paper on this issue: 'Summary of macaque crime in Vietnam' (page 149), and 'The illegal trade of douc langurs in Vietnam' (page 157).

No extra rescue center has been built or is at present time under construction.

Objective 3 (Action Plan 3.3) – rated as 'Low level implemented':

Description objective: To improve scientific research, to complete a database on primates in Vietnam by 2025 for the management and conservation of primates.

Actual results: The development of a data base was discussed in a meeting of the Primate Working Group, but no actions followed

Objective 4 (Action Plan 3.3) – rated as 'Low level implemented'

Description objective: By 2025 70% of staff working on primate conservation will be trained, increase capacity, increase awareness and primate conservation activities to all government agencies, social organizations and individuals, paying special attention to women's roles and gender equality

Actual results: No comprehensive and country-wide activities were carried out. The only training course focusing on primates is one that is yearly conducted since 11 years as a two weeks training course for 25 students from all over the country at the University of Danang, organized by Frankfurt Zoological Society.

The PAP Implementation Report ranked 50 % of the actions as ‘Low level implemented’, however with a more objective and stricter assessment, this value would more truthfully flag about 70% of the set objectives as ‘Not implemented’.

Comments on the rating of the only three actions listed as ‘High level implemented’

Task 1 / Action Plan 1.2 – rated as ‘High level implemented’

Review legal status of all primate taxa of Vietnam and provide recommendations for strengthening protection.

Expected outcomes:

- All primate species and sub-species in Vietnam will be updated by taxonomists and reviewed as to their conservation status, management, and protection in accordance with laws and regulations.

Actual results: There is no update or review on the conservation status or protection about the Vietnamese primates.

Expected outcomes:

- All primate species and sub-species in Vietnam will be reviewed and assessed as the basis for a proposed update of management and protection in accordance with current legal regulations such as Decree No.32/2006/ND-CP, Decree No. 160/20-13/ND-CP, CITES, bilateral agreements and other relevant legal documents.

Actual results: The Assessment mention the implementation process as ‘completed’, but the law 160/2013/ND-CP is not updated with the taxonomy of the primates.

Task 8 / Action Plan 8.1 – rated as ‘High level implemented’

Establish a Government-level Steering Committee to direct and guide administrative implementation for the Conservation Action Plan for Primates in Vietnam.

Expected outcome:

- A Steering Committee will include representatives of MARD, MONRE, other relevant ministries and agencies and some experts in primatology to have direction on the implementation of this Conservation Action Plan. The Committee will be responsible for reporting to the Prime Minister on the implementation and proposals for the conservation of endangered, rare, and precious primates in Vietnam in order to reach action plan targets.

Actual results: The Steering Committee was established with appointed members, but did not have any guidance, decisive actions on the implementation of the Primate Action Plan, nor involvement in the reporting process.

Task 8 / Action Plan 8.6 – rated as ‘High level implemented’

Cooperate and collaborate with international partners such as INGO's and research institutions to further the implementation of this action plan.

Expected outcome:

- International organizations and individuals will be encouraged to participate in activities of this Action Plan in accordance with laws and regulations of Vietnam.

- Programs and international cooperation projects on scientific research and in-situ conservation of endangered primates will be encouraged and prioritized. Such above tasks and activities can meet general needs for primate conservation with 8 prior projects (Annex 1). Other prior activities for each species will be presented in Annex 4.

Actual results: Cooperation of NGO's working in Vietnam with international partners are principally already established connections, independent from the existence of the Action Plan. However, these activities focus on the internal planning of the organizations and NGO's and doesn't focus on the ‘Expected outcome’ of the Action Plan. Various priority projects and priority conservation actions (Annex 4) are not addressed, and actually ignored.

Comments on the implementation timeline

Besides the clearly delimited deadline to fully implement the Action Plan by 2025, most of the actions defined in the Action Plan are generally not planned along a specific timeline. However, a crucial priority action with set time of completion is the development of Population and Habitat Viability Assessments (PHVA) for the three 'Critically Endangered' and endemic Vietnamese primate species: the Tonkin snub-nosed monkey (*Rhinopithecus avunculus*), the Delacour's langur (*Trachypithecus delacourii*) and the Cat Ba langur (*Trachypithecus poliocephalus*). The latter species is, with less than 70 individuals, one of the rarest and most endangered species in the world. While PHVAs were requested to be completed **before** 2020 (Action Plan 5.2), there is at the present day no apparent plan to reach this goal.

Another priority action is the development of Species Distribution Models (SMD) for Vietnam's primates **before** 2020 to determine and predict the distribution of the species in the future; particularly in the context of climate change impacts (Action Plan 5.4). However, this action has been completely ignored. Instead of such urgently required action, the limited available governmental funds were poured into debatable macaque surveys.

Comments on the use of financial source

The Government allocated 16,226,700,000 VND (about 700,000 USD) to support the implementation of the Action Plan. This fund is spent for surveys and monitoring of primate populations which are actually not in focus for priority actions. More than one-third of the total budget (5,440,000,000 VND, about 240,000 USD) was spent only for macaque surveys in only three protected areas (Ben En National Park, Pu Luong and Pu Huong Nature Reserves).

Conclusion

The implementation of the 'Urgent Conservation Action Plan for Primates' halfway the timeline shows a disastrous picture. The remaining tasks until the completion are now gigantic and will require a drastic change in its implementation approach. This if Vietnam wishes to reach its set missions until 2025 and thereby avoid the ongoing and irreversible decline of the primate fauna in Vietnam.

References

- Boonratana R** (1998): Na Hang Rainforest Conservation Project. Fauna & Flora International, Hanoi.
- Boonratana R & Le Xuan Canh** (1998): Conservation of Tonkin-Snub-nosed Monkeys (*Rhinopithecus avunculus*) in Vietnam. In: Jablonski NG (ed.): The Natural History of the Doucs and Snub-nosed Monkeys. World Scientific Publishing Co. Ltd., Singapore.
- Boonratana R, Le Xuan Canh & Vu Ngoc Thanh** (2001): A Conservation Action Plan for the Primates of Vietnam: 2001-2006. Final Draft to the IUCN/SSC Primate Specialist Group.
- Dine M** (2012): Species Conservation Action Plan: Local-based conservation of Tonkin Snub-nosed Monkey at the Na Hang Nature Reserve. People Resources and Conservation Foundation, Hanoi, Vietnam.
- Eudey A** (comp.) (1987): Action Plan for Asian Primate Conservation: 1987-1991. IUCN/SSC Primate Specialist Group. UNEP, IUCN, WWF.
- Le Khac Quy** (2004): A field survey of primates, focus on Tonkin snub-nosed monkey (*Rhinopithecus avunculus*) in Du Gia Nature Reserve, Ha Giang Province, northeastern Vietnam. Fauna & Flora International-Vietnam Programme, Hanoi.
- Le Khac Quy & La Quang Trung** (2021): Assessment on Implementation of the Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030. GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit.
- Le Xuan Canh & Boonratana R** (2006): A Conservation Action Plan for the Tonkin snub-nosed Monkey in Vietnam. Institute of Ecology and Biological Resources, Hanoi and Primate Conservation Inc.
- Martin B** (2004): Conservation of the Tonkin snub-nosed monkey (*Rhinopithecus avunculus*) and its habitat at Na Hang Nature Reserve during dam construction. In: Nadler T, Streicher U & Ha Thang Long (eds.): Conservation of Primates in Vietnam. Frankfurt Zoological Society & Endangered Primate Rescue Center, Hanoi.
- Mittermeier RA, Schwitzer C, Rylands AB, Taylor LA, Chiozza F, Williamson EA & Wallis J** (eds.) (2012): Primates in Peril – The World's 25 Most Endangered Primates 2012-2014. IUCN/SSC Primate Specialist Group, International Primatological Society, Conservation International and Bristol Conservation and Science Foundation.
- Nadler T & Roos C** (2017) Impeding extinction crisis of the world's primates – Implications for Vietnam. Vietnamese J. Primatol. 2(5), 25-35.
- Ratajszczak R, Cox R & Ha Dinh Duc** (1990): A preliminary survey of primates in North Vietnam. WWF Project 3869. (Unpubl. report).
- Thach Mai Hoang** (2011): Primate Survey Prioritizing Tonkin Snub-nosed Monkey (*Rhinopithecus avunculus*) and Francois' Langur (*Trachypithecus francoisi*) in Na Hang Nature Reserve, Tuyen Quang Province. People Resources and Conservation Foundation, Hanoi. (Unpubl. report).
- Wolters S** (2004): Technical Report – Reassignment and Restructuring. Tonkin snub-nosed Monkey Conservation Project. Westfälische Gesellschaft für Artenschutz.



**URGENT CONSERVATION ACTION PLAN FOR
PRIMATES IN VIETNAM TO 2025, VISION TO 2030**



HANOI, 2017

**THE PRIME MINISTER
OF GOVERNMENT**

**SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness**

No: 628/QĐ-TTg

Hanoi, May 10th, 2017

DECISION

**APPROVING URGENT CONSERVATION ACTION PLAN FOR PRIMATES
IN VIETNAM TO 2025, VISION TO 2030**

THE PRIME MINISTER

Pursuant to the Law on Organization of the Government dated June 19th 2015;

Pursuant to the Law on Forest Protection and Development dated December 3rd 2004;

Pursuant to the Law on Biodiversity dated November 13th 2008;

To implement the Decision No.218/QĐ-TTg dated February 7th 2014 by the Prime Minister approving the Strategy for the management of special-use forests, marine protected areas, and inland protected areas in Vietnam to 2020, vision to 2030;

At the proposal of the Minister – Ministry of Agriculture and Rural Development,

DECIDES:

Article 1. To approve the Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030 with the following main contents:

I. VIEWPOINTS

1. Endangered, rare, and precious primates are natural assets of the country; the conservation of primates contributes to overall biodiversity conservation and protection of the natural environment, which is a task of benefit to the whole of society, including all levels, sectors, organizations, communities, and individuals.

2. The Urgent Conservation Action Plan for Primates in Vietnam to 2025 and vision to 2030 must be in line with the Strategy for the management of special-use forests, marine protected areas, inland protected areas in Vietnam to 2020, vision to 2030

and integrated with other agency strategies and plans related to biodiversity conservation and environment protection.

3. The Government encourages all kinds of investment by organizations, scientists, and individuals to support primate conservation in Vietnam and encourages local communities to participate in primate conservation activities.

4. The management, protection, and conservation of endangered primates in Vietnam must be monitored, evaluated, and adaptively managed in accordance with international standards as well as local contexts in each locality.

II. OBJECTIVES

1. General objective

To secure self-sustaining populations of all Vietnamese primate taxa both inside and outside protected areas achieved through effective protection of populations and habitats under the leadership of the central government and with support and appreciation of civil society.

2. Specific objectives

a) To complete a legal framework to secure the conservation and sustainable development of primates and their habitats;

b) To improve law enforcement; to prevent illegal hunting, trapping and trade of primates to 2025 and reduce by 70% illegal hunting activities of primates; to develop at least three standard rescue centers for the rescue and release of primate individuals;

c) To improve scientific research, and to complete a database on primates in Vietnam by 2025 for the management and conservation of primates;

d) By 2025, 70% of officers working on primate conservation will be provided training and enhanced capacity to raise the awareness and complete primate conservation actions; including from all state agencies, social organizations, and individuals, particularly women to achieve gender equality;

e) To enhance partnership in primate conservation in Vietnam to attract international resources and experience.

III. TASKS AND SOLUTIONS

1. Tasks

a) Review and strengthen the legislative framework for primate conservation

- To update national red-listing of primates in Vietnam, including a review of taxonomy as well as providing recommendations for protection of primates for the Vietnam Red Book and IUCN Red List;

- To review legal status of all primate taxa of Vietnam and provide recommendations for strengthening protection.

b) Improve law enforcement for protection of primate populations and their habitats

- To create and support interagency gun control and confiscation in areas surrounding critically endangered primate populations;

- To enhance existing programs to eliminate trapping throughout Vietnam's protected area system;

- To apply SMART software to protected areas where there are critically endangered primates and integrate SMART data on primates into the central SMART database.

c) Integrate and prioritize primate conservation activities in management plans of protected areas within the distribution of endangered, rare, and precious primates.

- To develop guidelines on how to integrate primate conservation activities into management planning of PAs that include the distribution of endangered, rare, and precious primates;

- To train PA management staff on integrating primate conservation into PA management planning;

- Protected areas with key primate populations will allocate annual funds to protecting, studying, and monitoring primates;

- Protected areas with key primate populations will act to reduce deforestation and forest degradation;

- Protected areas with key primate populations will conduct forest protection, restoration, and reforestation to enhance forest quality and expand habitats;

- Development planning within protected areas will take into account the biological functions of resident primate populations to avoid negative impacts through habitat loss or disturbance.

d) Raising awareness and activities of governmental agencies and social organizations on primate conservation by enhancing conservation education programs

- To enhance awareness of legal agencies to ensure arrests and prosecutions of wildlife crimes targeting primates;

- To integrate training on primate conservation into the national strategy on PA capacity building;

- To improve conservation education programs for local communities in PAs with key primate populations, with notice to the role of women and the importance of gender equality;

- To launch a national level awareness campaign to reduce consumption of primates, especially in urban areas;

- To identify and develop training programs and opportunities for young students on primate conservation through provision of scholarships granted by governments, organizations, and individuals; encourage and create inclusive conditions for women to participate in training;

- To integrate primate conservation modules into training and academic programs at universities and colleges with majors in biodiversity conservation as part of national higher education reform to enhance the skill sets of practitioners;

- To integrate primate and biodiversity conservation modules into primary education to enhance the understanding and appreciation of biodiversity conservation among the general society;

- To coordinate with publicly accessible mass media to build communication programs and advertisements to raise awareness about primate conservation and nature conservation in Vietnam.

đ) Conduct scientific research programs to support and improve primate conservation planning of in Vietnam

- To build a database of Vietnam's primates including information on population size and distribution of each species (with MARD as the responsible agency in coordination with MONRE and the Vietnam Primatology Society);
 - To develop and implement species specific action plans including population and habitat viability assessments (PHVAs) for each critically endangered, endemic primate species, to be completed by 2020; and PHVAs for each critically endangered, non-endemic species, to be completed by 2025;
 - To assess PA coverage in relation to current and future primate distributions;
 - To complete species distribution modeling for Vietnam's primates before 2020 to determine and predict the distribution of the species in the future, particularly in the context and impact of climate change;
 - To conduct patrols, assessments and proposals for conservation of rare and precious endangered primate populations distributed in natural forests outside of SUFs system.
- e) Complete national-standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)
- To develop documentation to guide all actors engaged in rescuing, caring for, housing, and trans-locating primates;
 - To train and build capacity for actors, including rescue center staff, environmental police, border guards, rangers, and custom agents to be appropriately trained to rescue, care for, house, and translocate primates;
 - To assess and control macaque farming operations to ensure no impacts or demands from this activity extend to wild macaque populations;
 - To assess and propose activities for managing primates released outside of their historic range;
 - To develop and implement emergency management plans for small, critically endangered populations (less than 500 individuals) and actions for mitigating risk (diseases and disasters).

g) Develop protocols for responsible ecotourism programs for endangered, rare and precious primates.

- To assess tourism activities related to primate species and develop best practices and communication strategies for each species;

- To manage all primate viewing sites to ensure that conservation of the species is the top priority with mandatory equitable revenue sharing to local livelihoods, and protected area management;

- To prevent tourism activities involving risk of primate-human disease transfer or supporting exhibition of non-native primate taxa.

h) Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade

- To establish a Government-level Steering Committee to direct and guide administrative implementation for the Conservation Action Plan for Primates in Vietnam;

- To establish a National-level Primate Technical Working Group to support implementation of the Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030;

- To facilitate the Vietnamese Primatological Society (VPS) to become an important organization in research and conservation of primates in Vietnam;

- To develop regional and international cooperation programs and projects to combat illegal primate trafficking;

- To develop Transboundary projects to protect key primate populations that cross provincial or national borders;

- To cooperate and collaborate with international partners such as international NGO's and research institutions to further the implementation of this action plan.

2. Implementation solutions

a) Raise responsibilities of management agencies and the community on primate conservation

- To review and complete legislative framework, policies on biodiversity conservation including primates;
- To strengthen the organization and capacity for state management agencies on primate conservation;
- To develop and implement accordingly guideline documents for the supervision, monitoring and support the protection, conservation and development of primate population and habitats;
- To establish inter-ministerial and inter-regional mechanisms to coordinate activities of agencies and localities in the management and conservation of primates;
- To integrate the conservation of endangered, rare and precious primates of prioritized protection to Strategies, plans, planning, programs and projects on socio-economic development in a sustainable manner;
- To develop a sustainable financial mechanism, favorable policies to mobilize and attract domestic and international organizations and individuals for investment, technology transfer for the sustainable protection and development of primates in Vietnam.

b) Application of science and technology to primate conservation

- To enhance surveys, scientific research on primatology and biological conservation of endemic, endangered, rare, and precious primates;
- To conduct research and apply advanced technology in the conservation, protection, and development of primate populations;
- To modernize infrastructure of universities, institutes and research centers for scientific research on conservation of primates;
- To develop and enhance research stations and primate rescue centers.

c) Communication, Education and awareness raising on primate conservation

- To conduct publicity via mass media on primate conservation; to raise awareness and foster stewardship for primate conservation in their habitats;

- To conduct training of relevant stakeholders in communication, education, and awareness raising about primate conservation.

d) Enhancing international cooperation

- To actively participate in Conventions, International, and Regional Agreements;

- To diversify cooperation in primate conservation to have funds and technical assistance.

- To enhance international cooperation in research, training, HR development and investment in projects for primate conservation;

- To raise cooperation in collection, handling, and sharing of relevant information in primate conservation;

- To prevent the illegal trade and transport of primates, their products among countries.

IV. BUDGET FOR IMPLEMENTATION AND PRIORITY PROJECTS

1. Budget for implementation:

Budget for implementation of the Plan are prepared and allocated from the State Budget for the Program for sustainable forestry development and allocated to Ministries, agencies, provinces in accordance with their current delegation authority; income from forest environmental services and support from organizations, individuals; other legal resources.

2. Priority projects:

It is approved in principal 8 projects of national priority for the implementation of the Plan (see attached).

V. IMPLEMENTATION

1. MARD is responsible for:

a) Supporting the Prime Minister to chair, coordinate and implement the Plan;

b) Chairing and coordinating with other Ministries, agencies and localities for the implementation of the Plan;

- c) Chairing and coordinating with relevant Ministries and agencies to have guidelines to localities and local units to develop, conduct appraisal and approval of projects on primate conservation;
- d) Following tasks and assigned priority programs, projects and plans;
- đ) Chairing and mobilizing domestic and international funds for the implementation of this Plan;
- e) Having supervision of the implementation progress, organizing preliminary and summary events of the plan implementation in 2025; having periodical reports to the Prime Minister of the Plan implementation;
- g) The Minister of MARD submits to the Prime Minister to establish the Steering Committee for the implementation of the Plan. The Minister of MARD will be the Head of the Committee. The participants, operational rules of the Committee and Coordinating Office will be decided by Head of the Committee.

2. MONRE is responsible for:

- a) Coordinating closely with MARD and other ministries and agencies to carry out tasks under the scope, responsibilities and powers of the Ministry;
- b) Integrating this action plan with the implementation of the National Strategy on Biodiversity in 2020, vision to 2030, to avoid redundancy with other tasks and activities;
- c) Following tasks and assigned priority programs, projects and plans.

3. MPI is responsible for:

- a) Allocating financing expenses for this Action Plan's activities;
- b) Mobilizing domestic and international funds for conservation and sustainable development of endangered, rare and precious primates in NPs and NRs.

4. MOF is responsible for:

Chairing and coordinating with the Ministry of Planning and Investment, based on the availability of state budget and the approved allocated amount by the National Congress, to allocate budget for the implementation of programs and projects for the

conservation of endangered, rare, and precious primate species; having guidelines, supervision, and monitoring the use of funds allocated from the State budget in accordance with the Law on State Budget management and other legal regulations; in collaboration with the Ministry of Agriculture and Rural Development, Ministry of Natural Resources and Environment and other ministries, central agencies involved in developing mechanisms of financial policies to promote social mobilization, mobilization of funds rather than the state budget, to encourage organizations and individuals to have investment in conservation and sustainable development of endangered, rare, and precious primates.

5. Other relevant Ministries and agencies (Ministry of Science and Technology, Ministry of Education and Training, Ministry of Culture, Sports and Tourism) are responsible for participating in and creating favorable conditions for the implementation of this Action Plan.

6. Law enforcement agencies including Customs, Police, Forest rangers, Border Guard, Market management, Procuratorate and the Court are responsible for coordination with VNFOREST in conducting the inventory, management, and monitoring of primate specimens; strengthening law enforcement to control hunting, use, and illegal trade of primates and their parts and products in domestic markets and at international borders.

7. Relevant PPCs are responsible for:

a) Implementing the Conservation Action Plan in localities following the guidelines of MARD, other ministries, and functional agencies;

b) Mobilizing and allocating local resources and using the allocated resources from the Central government for appropriate purposes and with high efficiency;

c) Organizing publicity, educating about biodiversity and primate conservation; increasing patrols and law enforcement to conserve biodiversity and for primate conservation; increasing the supervision of law enforcement in nature reserves;

d) Integrating effectively tasks and activities of this Action Plan with the provincial Plan for biodiversity conservation; strengthening inter-sectoral coordination; integrating the conservation activities of endangered and precious primates into planning for local socio-economic development;

d) Directing functional agencies to develop investment projects for publicity, supervision, and monitoring of endangered, rare, and precious primate species;

e) Having periodic reports on the status and implementation of the Plan to MARD to consolidate and report to the Prime Minister.

8. Relevant NP and NRs are responsible for meeting requirements of Plan implementation. The Management Boards of NPs and NRs actively develop and directly implement activities of primate conservation for primates that have distribution within their managing areas, have adequate human resources for the conservation of endangered, rare, and precious primate species of prioritized protection; integrate primate conservation with other management and protection activities in NP or NRs that are home to primates.

9. Universities, colleges, and vocational training units (VNU Hanoi University, VNU HCMC University, Thai Nguyen University, Vinh University, Hue University, Tay Nguyen University, HCMC Agriculture and Forestry University, Forestry University, etc.) and Institutes for scientific research (such as the Institute of Ecology and Biological Resources, Southern Institute of Ecology, Institute of Tropical Biology, Forest Inventory and Planning Institute, Central Institute for Natural Resources and Environmental Studies, Institute of Vietnam Forestry Science, etc.) chair the development and implementation of scientific research, projects on primate conservation, studies on solutions for minimizing unintentional use and exploitation of primate species; actively coordinate with functional agencies of MARD to expand relations with domestic and international partners to import measures and new technologies to primate conservation in Vietnam.

10. Relevant enterprises, organizations, community and individuals

- Enterprises are responsible for implementing laws and regulations on biodiversity conservation, including rare, precious, and endangered primates; participating, proposing and implementing programs and projects on primate conservation.

- Political and social organizations and local communities are responsible for implementing targets, tasks, and activities of this Action Plan; monitoring and conducting the assessment of primate conservation activities; and publicizing to raise local awareness about responsibilities for primate conservation.

11. Domestic and international organizations and agencies relating to primate conservation have favorable conditions to participate and make proposals for activities and projects for primate conservation, get financial and technical support for research and conservation of primates in accordance with this Action Plan.

12. Vietnamese Primatological Society – VPS will contribute to promote and enhance scientific understanding and conservation of primates in Vietnam. Its purposes includes: 1) raising awareness and improving the quality of the research and conservation activities for primates in Vietnam; 2) raising capacity for research and conservation activities for primates in Vietnam; 3) acting as the focal point of programs and projects on collaborative research and conservation of primates in Vietnam; and representing the primatologist community to collect and contribute comments from experts on primate conservation in Vietnam and across the world.

Article 2. This Decision takes effect as of its signing.

Article 3. Ministers of MARD, other Ministries, the heads of the ministerial-level agencies, the heads of the agencies attached to the Government, the presidents of the People’s Committees of the provinces and centrally-run cities shall have to implement this Decision.

Recipients:

- Prime Minister, Deputy Prime Ministers;
- Ministries, Ministerial-level agencies, Agencies attached to the Government;
- PPC;
- Parliament Office;
- Supreme People's Court;
- People's Procuratorate of the Supreme;
- State Audit;
- National Financial Supervisory Commission;
- Central Committee of the Vietnam Fatherland Front;
- Central bodies of mass organizations;
- Government Office;
- File.

**ON BEHALF OF THE PRIME
MINISTER
DEPUTY PRIME MINISTER**

Trinh Dinh Dung

ANNEX

LIST OF PRIORITY PROJECTS

(Attached with Decision No.628/QĐ-TTg of May 10th 2017 by the Prime Minister)

No	Name	Timing	Focal agency	Coordinating agency
1.	Review and strengthen legislative framework on primate conservation	2017	MARD	MONRE
2.	Improve law enforcement for protection of primate populations and their habitats	2018	MARD	MONRE, PPC
3.	Integrate and prioritize primate conservation activities in management plans of protected areas within the distribution of endangered, rare and precious primate populations	2017-2025	MARD	MONRE, MBs of NPs and NRs, PPC
4.	Develop protocols of responsible-ecotourism for endangered, rare and precious primates	2020	MARD	PPC, MBs of NPs and NRs, organizations
5.	Raising awareness program about primate conservation by enhancing conservation education programs	2017-2025	MARD	MONRE, PPC, MBs of NPs and NRs
6.	Conduct scientific research programs to support and improve primate conservation planning in Vietnam	2017-2025	MARD	MONRE, PPC, MBs of NPs and NRs
7.	Complete national-standardized guidance practices on rescue and post-	2019	MARD	MONRE

	rescue management of primate individuals (care, transportation, housing, exotic species, and translocation)			
8.	Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade	2017-2025	MARD	MONRE, PPC, MBs of NPs and NRs, organizations

**URGENT CONSERVATION ACTION PLAN FOR
PRIMATES IN VIETNAM TO 2025, VISION TO 2030**

HA NOI, 2017

TABLE OF CONTENTS

ABBREVIATION.....	26
FOREWORD	27
PART 1: BACKGROUND INFORMATION ON PRIMATE CONSERVATION.....	29
1.1. Global Primate Conservation.....	29
1.2. Overview of Primate Conservation in Vietnam	29
PART 2: CONSERVATION NEEDS AND FOUNDATIONS	34
2.1. Conservation Needs.....	34
2.2. Foundations	35
PART 3: URGENT CONSERVATION ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, VISION TO 2030	37
3.1. Viewpoints.....	37
3.2. General Objective	37
3.3. Specific Objectives	37
3.4. Tasks and Solutions	38
PART 4: IMPLEMENTATION SOLUTIONS.....	51
4.1. Raise Responsibilities of Management Agencies and Community on Primate Conservation.....	51
4.2. Application of Science and Technology to Primate Conservation.....	51
4.3. Communication, Education and Awareness Raising.....	51
4.4. International Cooperation	52
4.5. Budget for Implementation.....	52
PART 5: IMPLEMENTATION AGENCIES	53
5.1. Responsibilities.....	53
5.2. Monitoring and Evaluation.....	56
PART 6: IMPLEMENTATION IMPACTS	58
6.1. Environmental Impacts.....	58
6.2. Socio-economic Impacts.....	58
ANNEXES	59
Annex 1: List of Priority Projects.....	59
Annex 2: List of Primates in Vietnam	61
Annex 3: List of priority areas for primate conservation in 2017 – 2025	63
Annex 4: Information of Primates in Vietnam	67
Annex 4: List of agencies, organizations, individuals and donors	92

ABBREVIATION

Animals Asia	Animals Asia Foundation
CI	Conservation International
ENV	Education for Nature - Vietnam
EPRC	Endangered Primate Rescue Center – Cuc Phuong National Park
FFI	Fauna & Flora International
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoEAST	Endangered Asian Species Trust – Cat Tien National Park
IEBR	Institute of Ecology and Biological Resources
IPS	International Primatological Society
IUCN	International Union for Conservation of Nature
MARD	Ministry of Agriculture and Rural Development
MOF	Ministry of Finance
MONRE	Ministry of Natural Resource and Environment
MPI	Ministry of Planning and Investment
NP	National Park
NR	Nature Reserve
PA	Protected Area
PanNature	People and Nature Reconciliation
PHVA	Population and Habitat Viability Assessment
PPC	Provincial People’s Committee
SIE	Southern Institute of Ecology
SMART	Spatial Monitoring and Reporting Tool
TRAFFIC	TRAFFIC – the wildlife trade monitoring network
VNU	Vietnam National University in Hanoi and HCMC
VNUF	Vietnam National University of Forestry
WAR	Wildlife at Risk
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature

FOREWORD

Vietnam is recognized as one of the countries with the highest biodiversity in the world. Biodiversity also plays a very important role in the sustainable development of the country, particularly development of the economic sectors of forestry, fisheries, agriculture, health care, and industry and tourism; bringing benefits and livelihoods to millions of people. However, during recent socio-economic development, the biodiversity of Vietnam has declined rapidly including at the ecosystem, species, and genetic levels.

In past years, the Government of Vietnam (GoV) has implemented several measures and commitments on biodiversity conservation in Vietnam, with special attention to the conservation of threatened animals and plants (those listed as vulnerable, endangered, and critically endangered). Many laws and legal documents will be promulgated to strengthen biodiversity conservation efforts including the Law on Forest Protection and Development; Law Environmental Protection; Law on Biodiversity and some important strategies including: Strategy for national environmental protection until 2020 and vision to 2030, and Strategy for the management of special-use forest systems, marine protected areas, inland water protected areas to 2020, vision 2030. While there are many conservation achievements, biodiversity conservation in Vietnam is still facing threats including from illegal hunting and trapping of wildlife, deforestation, environmental pollution, and climate change. Such challenges have been causing serious threats to the existence of endangered, rare, and precious species, including primates.

Twenty-five species and subspecies of primates occur in Vietnam including four endemic, endangered species: Tonkin snub-nosed monkey (*Rhinopithecus avunculus*), Delacour's langur (*Trachypithecus delacouri*), Cat Ba langur (*Trachypithecus poliocephalus poliocephalus*), and Con Dao long-tailed macaque (*Macaca fascicularis condorensis*). It is particularly noteworthy that three species, the Tonkin snub-nosed monkey, Delacour's langur, and Cat Ba langur, are listed among the top 25 most endangered primates in the world, 2014-2016 and the Tonkin snub-nosed monkey is listed the top 100 threatened species on earth. Although a focus of conservation activities for many years, Vietnam's primates have been threatened by illegal activities including hunting, trafficking and consumption, habitat loss, and habitat disturbance. Thus, it is necessary to develop an urgent conservation action plan for primates in Vietnam.

To implement the Decree 160/2013/ND-CP dated November 12th 2013 by the GOV on species identification and management of rare and precious endangered species and Decision 218/QĐ-TTg dated February 7th 2014 by the Prime Minister approving the Strategy for the management of SUFs, marine PAs, inland PAs in Vietnam to 2020, vision to 2030, the Ministry of Agriculture and Rural Development (MARD) has chaired and cooperated with the Ministry of Natural Resources and Environment (MONRE) to develop the **“Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030”**. This action plan includes specific actions and guidelines for the conservation of primates in Vietnam. This document will also contribute to raising awareness amongst agencies, organizations, communities, and all other stakeholders on the needs and importance of conservation actions for Vietnam’s primates.

PART 1

BACKGROUND INFORMATION ON PRIMATE CONSERVATION

1.1. Global Primate Conservation

The order Primates is one of the best studied mammalian groups because this is the order in which *Homo sapiens* is classified. To date, Primates includes approximately 690 species and subspecies. The vast majority of primate taxa are found in the tropics of Latin-America, Africa, Madagascar, South Asia and Southeast Asia.

According to the IUCN Species Survival Commission Primate Specialist Group, 48% of primate taxa are threatened with extinction – listed by IUCN as Vulnerable (VU), Endangered (EN) or Critically Endangered (CR). The primate experts also noted that the main threats to primates are destruction of habitats, habitat quality reduction, and hunting, trapping, and illegal trading.

Since 2002, IUCN in partnership with CI and IPS published a list of the World's 25 Most Endangered Primates biennially. The list contributed to raise awareness and improve conservation effectiveness for some of the most endangered species of primates globally. Three primates of Vietnam are listed in the publications, including: Tonkin snub nosed monkey (*Rhinopithecus avunculus*), Delacour's langur (*Trachypithecus delacouri*) and Cat Ba langur (*Trachypithecus poliocephalus*) – which are all endemic to Vietnam. Thus, Vietnam clearly faces serious conservation challenges to protect its primates.

1.2. Overview of Primate Conservation in Vietnam

As noted above, Vietnam is home to an impressive diversity of primates with 25 taxa (Annex 1) and Vietnam trails only Indonesia in Southeast Asia in the number of primate taxa found within its borders. At present, 22/25 (88%) of Vietnam's primates are threatened; thus the primates of Vietnam are at a much higher risk of extinction than are primates at the global level.

1.2.1. Primates of Vietnam

Primates of Vietnam have three families: lorises (Loridae), macaques (Cercopithecidae) and gibbons (Hylobatidae) (Details in Annexes 1 and 4).

In Vietnam, lorises of Vietnam (Loridae) have only 1 genus (*Nycticebus*) with two species: Bengal slow loris (*Nycticebus bengalensis*) and pygmy slow loris (*N. pygmaeus*). These two species are distributed in most NPs and NRs in

Vietnam, however their populations are in serious decline due to hunting and trapping, in-situ use for traditional medicines and decoration, and illegal trade.

Old world monkeys (Cercopithecidae), in Vietnam are represented by two subfamilies: macaques (Cercopithecinae) and leaf monkeys (Colobinae). This group is diverse with 17 taxa. Of which:

- Cercopithecines are represented by a single genus *Macaca* with six taxa including the Con Dao longtailed macaque (*M. fascicularis condorensis*), which is endemic to Vietnam, distributed only in some islands of Con Dao NP. The other five species are distributed in most NPs and NRs. They are often targets for hunting and trapping for meat, traditional medicines, and illegal trade. Their habitats have been adversely affected and reduced. Recent assessments revealed that their populations in the wild seriously decreased in Vietnam.

- Colobines are represented by three genera: *Trachypithecus*, *Pygathrix*, and *Rhinopithecus*. Seven species of *Trachypithecus* are found in Vietnam inhabiting primarily evergreen forests. All of these species are threatened and most have limited distribution ranges, being found in some NPs and NRs. Delacour's langur (*Trachypithecus delacouri*) and the Cat Ba langur (*Trachypithecus poliocephalus*) are endemic to Vietnam and both are critically endangered.

Pygathrix has three species: Red-shanked douc (*Pygathrix nemeaus*) distributed from Pu Mat NP (Nghe An) to Chu Mom Ray NP (Kon Tum), Grey-shanked douc (*P. cinerea*) – an endemic species in Vietnam having a limited distribution in the five provinces of Quang Nam, Quang Ngai, Binh Dinh, Gia Lai, and Kon Tum, and Black-shanked douc (*P. nigripes*) distributed from Chu Mom Ray NP (Kon Tum) to Cat Tien NP (Dong Nai).

Rhinopithecus has only one species, Tonkin snub nosed monkey (*Rhinopithecus avunculus*), an endemic species in Vietnam with a limited distribution in some provinces including Ha Giang, Tuyen Quang, Bac Kan, Thai Nguyen, Bac Giang, and Quang Ninh.

Most leaf monkeys (colobines) of Vietnam are endangered, rare and precious primate species and are facing threat of extinction due to illegal hunting, use, trade, and lost or affected habitats.

Gibbon (Hylobatidae) has only one genus *Nomascus* with six species: western black-crested gibbon (*Nomascus concolor*), Cao Vit gibbon (*N. nasutus*), white-cheeked gibbon (*N. leucogenys*), Siki gibbon (*N. siki*), yellow-cheeked gibbon (*N. gabriellae*), and the northern buffed-cheeked gibbon (*N.*

annamensis) which was only described in 2010. Gibbons in Vietnam are distributed mostly in evergreen forests in some NPs and NRs and are facing serious threats from habitat loss, illegal hunting, and trade.

1.2.2. Threats

a) Habitat Loss and Disturbance

Habitat loss and destruction are the greatest threats to the existence of primates in Vietnam. Such activities as burning trees for cultivation, exploitation of wood and non-timber forest products, changing forest land to agricultural land, urbanization, development of infrastructure (transportation system), development of hydro power plants, exploitation of natural resources, etc. are the main reasons for the reduction and loss of habitats of primates and loss of biodiversity.

Forest destruction and habitat fragmentation are major threats to the long term viability of primate populations. Such threats not only directly reduce the quality of habitat and number of animals, but facilitate the exploitation of non-timber forest products. Furthermore, habitat fragmentation can lead to population fragmentation, which can lead to a long-term loss of genetic diversity due to inbreeding and genetic drift.

b) Illegal Hunting, Trapping, and Trafficking

Hunting and trapping are major threats to the sustainability of primate communities in Vietnam. Such activities have serious impacts on the existence of primate individuals. Though the control of gun hunting is improving, some local hunters still design, keep, and illegally use guns for hunting wildlife including primates. In addition, more terrestrial primates such as monkeys can be hunted using simple snare traps in forests in Vietnam nationwide.

Illegal trade of wildlife including animal and plant species is one of the main reasons for the extinction of many wildlife species including primates in Vietnam. Largely, primates are hunted and trapped for trade for food, medicines, pets, and decoration purposes. It is easy to find primate individuals kept as pets despite their trade and use being illegal.

1.2.3. Management and Conservation

In 1992, the GoV first published Vietnam's Red Data Book, which listed 16 primates in Vietnam. This Red Data Book was amended and supplemented in 2007 to list most primates in Vietnam. The GoV also promulgated legal documents on management and conservation of wildlife animal and plant

species including primates such as Law on Forest Protection and Development (2004), Law on Biodiversity (2008), Decree No. 32/2006/ND-CP, and Decree No.160/2013/ND-CP. Furthermore, the National strategy on biodiversity to 2020, vision to 2030 (Decision No.1250/QD-TTg dated July 31st 2013 by PM) and Strategy on SUFs, marine PAs, inland PAs of Vietnam to 2020, vision to 2030 (Decision No.218/QD-TTg dated February 7th 2014) all mentioned the request to develop of plans and programs for the conservation of rare, precious, and endangered species including primates in Vietnam.

Particularly, in 2006, “*A Conservation Action Plan for the Tonkin Snub-nosed Monkey in Vietnam*” was published. This action plan listed necessary conservation activities for the conservation and development of endemic and endangered snub-nosed monkeys in Vietnam.

Over the past 50 years, a system of 34 NPs, 133 NRs and landscape PAs have been designated and established all throughout Vietnam for the conservation of biodiversity including endangered primates. Notably, some SUFs paid special attention and considered primates as the flagship species and symbol for conservation, such as Delacour’s langur (*Trachypithecus delacouri*) in Cuc Phuong NP and Van Long NR (Ninh Binh), Hatinh langur (*Trachypithecus hatinhensis*) in Phong Nha – Ke Bang NP (Quang Binh), Cao Vit gibbon (*Nomascus nasutus*) in Cao Vit Gibbon Species/Habitat Conservation Area in Trung Khanh (Cao Bang), western black-crested gibbon (*Nomascus concolor*) in Mu Cang Chai Species/Habitat Conservation Area (Yen Bai), Tonkin snub-nosed monkey (*Rhinopithecus avunculus*) in Na Hang NR (Tuyen Quang) and Tonkin Snub-nosed Monkey Species/Habitat Conservation Area in Khau Ca (Ha Giang), Red-shanked douc (*Pygathrix nemaeus*) in Son Tra NR (Da Nang), and Grey-shanked douc (*P. cinerea*) in Kon Ka Kinh NP (Gia Lai).

In recent years, many programs and research projects on primates will be conducted in Vietnam and many scientific reports and training courses completed towards scientific staff gaining international qualifications in primate research and conservation.

Primate conservation in Vietnam has received special interest from many domestic and international conservation organizations and agencies. Many conservation projects have made significant contributions to the protection and development of endangered primate populations in Vietnam, such as: the Endangered Primate Rescue Center – Cuc Phuong NP (since 1993), Tonkin Snub-nosed Monkey Conservation Project in Khau Ca (since 2004), Cat Ba Langur Conservation Project in Cat Ba NP (since 2000), Cao Vit Gibbon

Conservation Project in Cao Bang (since 2002), and Dao Tien Rescue Center in Cat Tien NP (since 2008).

Some notable achievements of primate conservation in Vietnam in the past 20 years include: 1) none of Vietnam's primates have gone extinct; 2) Successful rescue procedures are developed at both Primate rescue centers in Cuc Phuong NP and Cat Tien NP; 3) successful discovery of a large snub-nosed monkey population in Khau Ca (Ha Giang); and 4) discovery and description of 2 new primate species including the grey-shanked douc (*Pygathrix cinerea*) and northern buff-cheeked gibbon (*Nomascus annamensis*).

PART 2

CONSERVATION NEEDS AND FOUNDATIONS OF THE URGENT CONSERVATION ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, VISION TO 2030

2.1. Conservation Needs

Of 25 primate taxa recognized in Vietnam, 22 are facing the threat of extinction (details in Annex 2). Main threats to their survival are illegal hunting and trapping for use and trade, and habitat loss and habitat degradation. In the past 50 years, the GOV has made various efforts to implement measures and commitments towards biodiversity conservation, including the conservation of Vietnam's endemic, threatened primates. In the legal framework of biodiversity conservation, primates are priorities for conservation stipulated in laws and regulations. It is well noted that Decree No. 160/2013/ND-CP dated on November 12th 2013 by the GOV identifies criteria of species and management of threatened species of conservation priority, which includes 16 primate species. **Section d, Clause 1, Article 10** of Decree 160/2013/ND-CP clearly stipulates that: *“Each species prioritized protection is preserved through a separate preservation program and assigned to an agency responsible for preservation of such species”*.

On February 7th 2014, the Prime Minister promulgated the Decision No. 218/QĐ-TTg to approve a **“Strategy on management of special use forests, marine protected areas, inland protected areas to 2020, vision to 2030”**, which includes targets for conservation and development of threatened wildlife species to be led by MARD in coordination with MONRE.

At the 25th IPS Congress in Hanoi, primatologists emphasized the conservation importance of primates in Vietnam and recommended the GOV to urgently develop and promulgate a national conservation action plan for primates, particularly including the three species listed in the top 25 most endangered primates in the world.

The **“Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030”** will be developed to implement the targets of biodiversity conservation of the GOV, and strengthen conservation activities for primate taxa in Vietnam. This Action Plan will help raise awareness amongst agencies, organizations, individuals, and communities on the necessity and importance of conservation activities for Primates in Vietnam.

2.2. Foundations

2.2.1. Legislative Framework

“Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030” has been developed on the legal basis of:

1. Law on Forest Protection and Development (2004);
2. Law on Biodiversity (2008);
3. Law on Environment Protection (2014);
4. Decree No.23/2006/ND-CP dated March 3rd 2006 by the GoV on the implementation of Law on forest protection and development;
5. Decree No.32/2006/ND-CP dated March 30th 2006 by the GoV on the management of forest endangered, rare and precious animal species;
6. Decree No.82/2006/ND-CP dated August 10th 2006 by the GoV on management of export, import, re-export, introduction from the sea, transit, breeding, rearing and artificial propagation of endangered species of precious and rare wild fauna and flora;
7. Decision No.79/2007/QD-TTg dated May 31st 2007 by the Prime Minister on approval of “National action plan of biodiversity to 2010 and vision to 2020 for the implementation of Convention of Biological Diversity and Cartagena Protocol on biological safety”;
8. Decree No.65/2010/ND-CP dated June 11th 2010 by the GoV on detailed regulations and guidelines for implementation of some articles of biological diversity law;
9. Decision No.1250/QD-TTg dated July 31st 2013 by the Prime Minister on approval of “National strategy for biodiversity to 2020, vision to 2030”;
10. Decree 160/2013/ND-CP on the criteria for identification and management of endangered, rare and precious species prioritized for protection;
11. Decision No.218/QD-TTg dated February 7th 2014 by the Prime Minister on approval of “Strategy on management of special use forests, marine protected areas, inland protected areas to 2020, vision to 2030”;
12. Decision No.1976/QD-TTg dated October 30th 2014 by the Prime Minister on approval of “Planning of special use forest system in Vietnam to 2020, vision to 2030”.

2.2.2. Scientific Foundations

Together with very large mammals such as Asian elephants (*Elephas maximus*), tigers, bears, gaur (*Bos gaurus*), banteng (*Bos javanicus*), and Saola (*Pseudoryx nghetinhensis*), primates are mammals playing an important role in maintaining balance, diversity, and the development of forest ecosystems in Vietnam.

Of more than 690 primate taxa have been recognized and described in the world, and IUCN and IPS announced a list of the top 25 most endangered primates in the world. On this list, there were 3 primate species endemic to Vietnam, including: Tonkin snub nosed monkey (*Rhinopithecus avunculus*), Delacour's langur (*Trachypithecus delacouri*) and Cat Ba langur (*Trachypithecus poliocephalus*). In addition, 4 of the 25 primate species and sub-species in Vietnam are endemic or only found in Vietnam, including: Tonkin snub nosed monkey (*Rhinopithecus avunculus*), Delacour's langur (*Trachypithecus delacouri*), Cat Ba langur (*Trachypithecus poliocephalus*) and Con Dao long-tailed macaque (*Macaca fascicularis condorensis*). These primates will be the focus of conservation attention from GoV agencies and conservation organizations.

This action plan has been developed under the guidelines of Committee for Species conservation of IUCN¹ with the participation of domestic and international primatologists and other relevant agencies and organizations. This plan provides orientation and detailed guidelines for primate conservation activities in Vietnam. Furthermore, this Plan will also provide information and programs to donors and conservation organizations in terms of coordination and participation in primate conservation in Vietnam.

¹ IUCN/SSC. 2008. *Strategic Planning for Species Conservation: A Handbook*. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission. 104pp.

PART 3

URGENT CONSERVATION ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, VISION TO 2030

3.1. Viewpoints

1. Endangered, rare and precious primates are natural assets of the country; the conservation of primates contributes to overall biodiversity conservation and protection of the natural environment, which is a task of benefit to the whole of society, including all levels, sectors, organizations, communities, and individuals.

2. The Urgent Conservation Action Plan for Primates in Vietnam to 2025 and vision to 2030 must be in line with the Strategy of special use forests, marine protected areas, inland protected areas to 2020, vision to 2030 and integrated with other agency strategies and plans related to biodiversity conservation and environment protection.

3. The Government encourages all kinds of investment by organizations, scientists and individuals to support primate conservation in Vietnam and encourages local communities to participate in primate conservation activities.

4. The management, protection and conservation of endangered primates in Vietnam must be monitored, evaluated, and adaptively managed in accordance with international standards as well as local contexts in each locality.

3.2. General Objective

To secure self-sustaining populations of all Vietnamese primate taxa both inside and outside protected areas achieved through effective protection of populations and habitats under the leadership of the central government and with support and appreciation of civil society.

3.3. Specific Objectives

a) a) To complete a legal framework to secure the conservation and sustainable development of primates and their habitats;

b) To improve law enforcement; to prevent illegal hunting, trapping and trade of primates to 2025 and reduce by 70% illegal hunting activities of primates; to develop at least three standard rescue centers for the rescue and release of primate individuals;

c) To improve scientific research, to complete a database on primates in Vietnam by 2025 for the management and conservation of primates;

d) By 2025, 70% of officers working on primate conservation will be provided training and enhanced capacity to raise the awareness and complete

primate conservation actions; including from all state agencies, social organizations, and individuals, particularly women to achieve gender equality;

đ) To enhance partnership in primate conservation in Vietnam to attract international resources and experience.

3.4. Tasks and Solutions

Task 1: Review and strengthen the legislative framework for primate conservation

Action Plan 1.1: Update national red-listing of primates in Vietnam, including a review of taxonomy as well as providing recommendations for protection of primates for the Vietnam Red Book and IUCN Red List;

Expected outcomes:

– Primates in Vietnam will be reviewed, assessed, and updated in terms of taxonomy to propose updated conservation status information for each species for the Vietnam Red Book and IUCN Red List.

– An updated list in terms of taxonomy and conservation status of all primate species and subspecies in Vietnam will be announced and publicized through mass media to relevant organizations and individuals.

Action Plan 1.2: Review legal status of all primate taxa of Vietnam and provide recommendations for strengthening protection.

Expected outcomes:

– All primate species and sub-species in Vietnam will be updated by taxonomists and reviewed as to their conservation status, management, and protection in accordance with laws and regulations.

– All primate species and sub-species in Vietnam will be reviewed and assessed as the basis for a proposed update of management and protection in accordance with current legal regulations such as Decree No.32/2006/ND-CP, Decree No.160/2013/ND-CP, CITES, bilateral agreements and other relevant legal documents.

Task 2: Improve law enforcement for protection of primate populations and their habitats

Action Plan 2.1: Create and support interagency gun control and confiscation in areas surrounding critically endangered primate populations.

Expected outcomes:

- To develop and implement coordinating mechanisms among relevant agencies (including forest rangers, police, and army) in law enforcement on the management, monitoring, and use of hunting guns in all protected areas with primates.

- All hunting guns inside and around habitats of endangered, rare, and precious primates of prioritized protection should be confiscated and closely monitored, particularly in some areas with an important primate population.

Action Plan 2.2: Enhance existing programs to eliminate trapping throughout Vietnam’s protected area system.

Expected outcomes:

- All kinds of traps and snares in key primate conservation areas will be removed to decrease threats to primates and forest animals in these areas.

- Programs on trap controlling will be developed and implemented in NPs and NRs of key primate conservation importance.

Action Plan 2.3: Apply the Spatial Monitoring and Report Tool (SMART) to PAs where there are endangered primates.

Expected outcomes:

- SMART software is applicable for the monitoring and supervision of primates in NPs and NRs.

- Technical staff and forest rangers will be trained (or have already been trained) and will participate in using the software in primate and biodiversity conservation activities.

- A SMART database on primates will be developed, collected, managed, and integrated with the central SMART database.

Task 3: Integrate and prioritize primate conservation activities in management plans of protected areas within the distribution of endangered, rare, and precious primates.

Action Plan 3.1: Develop guidelines on how to integrate primate conservation activities into management planning of PAs that include the distribution of endangered, rare, and precious primates.

Expected outcomes:

- Develop and implement guiding documents for the integration of conservation activities with management plans and planning of NPs, NRs that include the distribution of endangered, rare, and precious primates.

Action Plan 3.2: Train PA management staff on integrating primate conservation into PA management planning.

Expected outcomes:

– Key technical staff and forest rangers of NPs and NRs that include the distribution of endangered, rare, and precious primates will be provided with training and capacity building for integration of conservation activities with management plans and planning of NPs, NRs.

Action Plan 3.3: Protected areas with key primate populations will allocate annual funds to protecting, studying, and monitoring primates.

Expected outcomes:

– The annual budget will be allocated to conservation activities through research, protection, and monitoring of population and habitats of primates in wild environments.

Action Plan 3.4: Protected areas with key primate populations will act to reduce deforestation and forest degradation.

Expected outcomes:

– Habitats of primates in NPs and NRs will be protected and sustainably developed to provide good living conditions for primate populations and other wildlife.

– Human activities having adverse impacts that degrade forest quality will be prevented and closely controlled.

Action Plan 3.5: PAs with key primate populations will conduct forest protection, restoration, and reforestation to enhance forest quality and expand habitats.

Expected outcomes:

– PAs that are identified as important habitat areas for key critically endangered primate species will conduct restoration, quality enhancement, and expansions to ensure the sustainable existence of *in-situ* species such as Tung Vai and Khau Ca (Ha Giang); Trung Khanh (Cao Bang); Van Long NR (Ninh Binh); Cat Ba NP (Hai Phong); Kien Luong (Kien Giang).

Action Plan 3.6: Development planning within protected areas will take into account the biological functions of resident primate populations to avoid negative impacts through habitat loss or disturbance.

Expected outcomes:

– Characteristics, biological, and ecological functions of primates will be reviewed during the development and management plans of NPs and NRs that include the distribution of endangered, rare, and precious primates prioritized for protection to mitigate adverse impacts on or fragmentation of primate habitats such as that of the Tonkin snub nosed monkey in Tung Vai and Khau Ca, Crested gibbon in Trung Khanh, Delacour’s langur in Van Long NR, Cat Ba langur in Cat Ba NP and Indochinese silvered langur in Kien Luong.

Task 4: Raising awareness and activities of governmental agencies and social organizations on primate conservation by enhancing conservation education programs

Action Plan 4.1: Enhance awareness of legal agencies to ensure arrests and prosecutions of wildlife crimes targeting primates.

Expected outcomes:

– Raise awareness of the importance of primate conservation activities within relevant agencies, particularly the capacity of law enforcement staff in dealing with violations and wildlife crimes through in-depth trainings on primate conservation.

Action Plan 4.2: Integrate training on primate conservation into the national strategy on PA capacity building.

Expected outcomes:

– Training on primate conservation will be strengthened and integrated into the nationwide training strategy for capacity building for staff and forest rangers of NPs and NRs. Through these trainings, capacity of NPs and NRs on primate conservation will be improved towards completing other tasks and actions in this Conservation Action Plan.

Action Plan 4.3: Improve conservation education programs for local communities in PAs with key primate populations, with notice to the role of women and the importance of gender equality.

Expected outcomes:

– Develop materials and documents for conservation education with a focus on endangered primates in accordance with specific conditions and distributed to local communities in PAs within the distribution of primates of prioritized protection.

- Educational materials about primate and biodiversity conservation will be collected, published, and distributed to relevant organizations and individuals and local communities living nearby the distribution of primates of prioritized protection.

- Mass media and education on primate conservation will be developed in various manners with the participation of women to secure gender equality in access to information and to enhance education and training.

Action Plan 4.4: Launch a national level awareness campaign to reduce consumption of primates, especially in urban areas.

Expected outcomes:

- Development of a publicity strategy for awareness raising against using products from or relating to primates (glue, medical alcohol with primate materials, decorations, etc.) that is distributed to local communities. This strategy will be primarily conducted in urban areas and other relevant areas including centers of consumption and trade of products having origins from or relating to primates.

- Publicity activities are designed with clear contents and broadcast in appropriate mass media channels, with a focus on the important role of both men and women in primate conservation.

Action Plan 4.5: Identify and develop training programs and opportunities for young students on primate conservation through provision of scholarships granted by governments, organizations, and individuals; encourage and create inclusive conditions for women to participate in training.

Expected outcomes:

- Short term and long term in-depth trainings on research and conservation of primates will be introduced to students at universities and other places of higher education. Women students will be especially encouraged and inclusive conditions created for them to participate in training at universities and institutes. These programs will be led by high-level, prestigious primate experts in Vietnam as well as international experts. International cooperation and exchange will be encouraged and enhanced through these programs.

- Scholarship funds will be established by Governments, organizations, and individuals to fund research and conservation projects led by students

pursuing education on primate conservation, especially women students pursuing education on primate conservation.

- Summer internship programs, summer camps, and research stations for primate conservation in the field will be established for students, especially women students and researchers and with inclusive and favorable conditions for in-situ primate conservation activities and projects.

Action Plan 4.6: Integrate primate conservation modules into training and academic programs at universities and colleges with majors in biodiversity conservation as part of national higher education reform to enhance the skill sets of practitioners.

Expected outcomes:

- In-depth lectures on research and conservation of primates will be developed and integrated at universities and colleges having majors in biodiversity conservation, such as the Forestry University, HCMC Agriculture and Forestry University, Hue Agriculture and Forestry University, Thai Nguyen Agriculture and Forestry University, Natural Science Universities in Hanoi and HCMC, Tay Nguyen University, etc.

- Lecturers at universities and colleges will be trained to deliver strong and well-informed lectures on primate conservation.

- Some lectures and practical internship programs on primate conservation will be developed so that students gain profound hands-on knowledge on the work and importance of primate conservation.

Action Plan 4.7: Integrate primate and biodiversity conservation modules into primary education to enhance the understanding and appreciation of biodiversity conservation among the general society.

Expected outcomes:

- A framework and lectures on primate and biodiversity conservation will be developed, implemented, and integrated into primary education curricula to raise awareness and knowledge among youth on conservation topics.

- Lecturers participating in the programs will be trained on primate and biodiversity conservation in Vietnam.

Action Plan 4.8: Coordinate with publicly accessible mass media to build communication programs and advertisements to raise awareness about primate conservation and nature conservation in Vietnam.

Expected outcomes:

– Communication programs and advertisements on primate conservation and nature conservation will be developed and shown via various mass media outlets so that they can easily and rapidly reach society-at-large.

– Communication programs and advertisements on primate conservation and nature conservation will be prioritized to integrate with communications and advertisements of all relevant agencies, organizations and individuals in this Action Plan. Notably to secure gender equality in the access of information and participation in primate research and conservation.

Task 5: Conduct scientific research programs to support and improve primate conservation planning of in Vietnam

Action Plan 5.1: Build a database of Vietnam’s primates including information on population size and distribution of each species (with MARD as the responsible agency in coordination with MONRE and the Vietnam Primatology Society).

Expected outcomes:

– A digital database on primate studies and conservation will be developed, updated, and shared publicly. This database will include information on scientific research outputs, conservation, distribution of primates in Vietnam, reference documents on global studies and conservation of primates, and updated information on surveys, monitoring, and conservation of primates in Vietnam.

Action Plan 5.2: Develop and implement species specific action plans including population and habitat viability assessments (PHVAs) for each critically endangered, endemic primate species, to be completed by 2020; and PHVAs for each critically endangered, non-endemic species, to be completed by 2025.

Expected outcomes:

– Population and Habitat Viability Assessments (PHVAs) will be completed for each endemic and critically endangered primate species before 2020 and for critically endangered, non-endemic primates before 2025 as the basis for long term planning for conservation of primates in Vietnam.

– Detailed conservation activities for each primate species will be conducted to ensure effective and sustainable species conservation efforts.

Action Plan 5.3: Assess PA coverage in relation to current and future primate distributions.

Expected outcomes:

– Correlation with and expected developments of forest coverage in NPs and NRs as related to the distribution of primates have been studied and assessed as the basis for planning and proposals for medium and long term management and conservation solutions, such as for the Tonkin snub nosed monkey in Tung Vai and Khau Ca (Ha Giang); Crested gibbon in Trung Khanh (Cao Bang); Delacour’s langur in Van Long NR (Ninh Binh); Cat Ba langur in Cat Ba NP (Hai Phong); Indochinese silvered langur in Kien Luong (Kien Giang).

Action Plan 5.4: Complete species distribution modeling for Vietnam’s primates before 2020 to determine and predict the distribution of the species in the future, particularly in the context and impact of climate change.

Expected outcomes:

– Updated distribution information and distribution modeling of each primate species in Vietnam will be completed before 2020 to identify and predict the distribution of each species in the future, particularly in the context of anticipated global climate change.

– The tolerance of primates in Vietnam to climate change should be studied and assessed thoroughly in order to identify the outlook and plan for reaction to climate change.

Action Plan 5.5: Conduct patrols, assessments and proposals for conservation of rare, precious, endangered primate populations distributed in natural forests outside of SUFs system.

Expected outcomes:

– All rare and precious endangered primate populations distributed in natural forests outside of the SUFs system will be studied and surveyed for the identification and proposal of solutions for the conservation of important populations.

– Feasibility studies and proposals for choosing project areas to set up a species and habitat protected areas for important populations will be conducted.

– Species and habitat protected areas for important populations in approved areas will be established.

Task 6: Complete national-standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)

Action Plan 6.1: Develop documentation to guide all actors engaged in rescuing, caring for, housing, and translocating primates.

Expected outcomes:

– Documented guidelines on rescue, caring for, keeping, and moving confiscated primate individuals in Vietnam will be developed, standardized, and applied to all relevant stakeholders nationwide.

– The guidelines will be updated and adapted to incorporate and standardize with new and effective rescue methods.

Action Plan 6.2: Train and build capacity for actors, including rescue center staff, environmental police, border guards, rangers, and custom agents to be appropriately trained to rescue, care for, house, and translocate primates.

Expected outcomes:

– Functional agencies including rescue staff, environment policemen, customs agents, border guards, and forest rangers will be trained on primate rescue measures, particularly skills of rescue, caring for, and moving of primates during rescue.

Action Plan 6.3: Assess and control macaque farming operations to ensure no impacts or demands from this activity extend to wild macaque populations.

Expected outcomes:

– Breeding farms of monkeys (macaques) in Vietnam will be closely supervised, evaluated, and monitored to make sure that there are not impacts or demands from this breeding activity that impact wild monkey populations; specifically that wild populations are not illegally hunted to be introduced into breeding farms, zoos, or households.

Action Plan 6.4: Assess and propose activities for managing primates released outside of their historic range.

Expected outcome:

– All primates that have been released in habitats outside of their historic range will be assessed and given appropriate management for mitigating adverse impacts to native species.

Action Plan 6.5: Develop and implement emergency management plans for small, critically endangered populations (less than 500 individuals) and actions for mitigating risk (diseases and disasters).

Expected outcome:

– *In situ* emergency management plans for all populations of endemic and critically endangered of primates including Cat Ba langur, Delacour's langur, and Tonkin snub nosed monkey will be developed in order to closely manage these priority species, minimizing risks of diseases and disasters to long term species conservation.

– *Ex situ* emergency management plans for all critically endangered primates individuals such as Cat Ba langur, Delacour's langur, Red-shanked douc, grey-shanked douc, and white-cheeked crested gibbon will be developed for effective care in rescue centers, breeding farms, and zoos to maintain health status, caring conditions, and prevent risks. Accordingly, appropriate measures for conservation will be proposed and enforced in a possible condition and necessity in order to improve conservation efforts of these endangered primates.

Task 7: Develop protocols for responsible-ecotourism programs for endangered, rare and precious primates.

Action Plan 7.1: Assess tourism activities related to primate species and develop best practices and communication strategies for each species.

Expected outcome:

– Tourism activities' impacts on endangered, rare, and precious primates such as Delacour's langur in Van Long (Ninh Binh), Cat Ba langur in Cat Ba NP (Hai Phong), and Red-shanked douc in Son Tra (Da Nang) will be studied and assessments made as well as proposed measures for management and mitigation of tourism impacts.

– Guideline documents will be developed to include norms and guidelines for ecotourism relating to each endangered primate species, which

will be developed and delivered for communication to individuals and groups involved in related tourism activities.

Action Plan 7.2: Manage all primate viewing sites to ensure that conservation of the species is the top priority with mandatory equitable revenue sharing to local livelihoods, and protected area management.

Expected outcome:

– Tourism sites focused on viewing of primates will be managed and monitored to ensure that endangered primates will be protected under laws and regulations without adverse impacts from tourism.

– Benefit sharing from ecotourism will be developed and approved to make favorable conditions for the Management Boards of NPs, NRs, tourism units and individuals to have rights and tasks in the protection and sustainable exploitation of natural resources (primate species) to tourism.

Action Plan 7.3: Prevent tourism activities involving risk of primate-human disease transfer or supporting exhibition of non-native primate taxa.

Expected outcome:

– Tourism activities in areas within the distribution of endangered and critically endangered primates are considered risky as they could bring diseases from human beings. Non-native species exhibited with primates must be checked and closely monitored.

– The exhibition of non-native species in areas within the distribution of endangered and critically endangered primates must be limited and gradually ended to mitigate the risk of bringing diseases to the locality.

Task 8: Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade.

Action Plan 8.1: Establish a Government-level Steering Committee to direct and guide administrative implementation for the Conservation Action Plan for Primates in Vietnam.

Expected outcome:

– A Steering Committee will include representatives of MARD, MONRE, other relevant ministries and agencies and some experts in primatology to have direction on the implementation of this Conservation Action Plan. The Committee will be responsible for reporting to the Prime

Minister on the implementation and proposals for the conservation of endangered, rare, and precious primates in Vietnam in order to reach action plan targets.

Action Plan 8.2: Establish a National-level Primate Technical Working Group to support implementation of the Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030.

Expected outcome:

– The working group on primates will include experts in primatology, conservationists, and management staff. This group will support advisory and technical assistance to the Steering Committee during the implementation of the Action Plan.

Action Plan 8.3: Facilitate the Vietnamese Primatological Society (VPS) to become an important organization in research and conservation of primates in Vietnam.

Expected outcome:

– The Society will move towards active operation with the participation of domestic and international primatology experts, conservationists, management staffs, conservation organizations and anyone interested in primate conservation. For specific research and conservation activities, members of the Society will play an important part in the implementation of this Action Plan.

Action Plan 8.4: Develop regional and international cooperation programs and projects to combat illegal primate trafficking.

Expected outcome:

– Regional and international cooperating programs and projects will be developed and enforced with the participation of government and non-governmental agencies to enhance the prevention of wildlife trade, including primate trade. Trade and exchange of primates listed in Appendix 1 of CITES in Vietnam will be closely monitored.

Action Plan 8.5: Develop Transboundary projects to protect key primate populations that cross provincial or national borders.

Expected outcome:

– Inter-provincial conservation programs and projects on primates will be developed and conducted with prioritization of critically threatened species

such as the snub-nosed monkey in Ha Giang and Tuyen Quang; Delacour's langur in Ninh Binh, Ha Nam, and Hanoi; Red-shanked douc in Quang Binh, Quang Tri, Thua Thien Hue, and Da Nang; Grey-shanked douc in Quang Nam, Binh Dinh, Quang Ngai, Kon Tum, and Gia Lai; white-cheeked crested gibbon in Nghe An, Thanh Hoa, and Son La.

– Inter-border programs and projects in nature reserves will be developed and strengthened to protect primates with populations in Vietnam and neighbouring countries such as the Black crested gibbon, Cao Vit gibbon (in Vietnam and China); red-shanked douc and Hatinh langur (in Vietnam and Laos); black-shanked douc and yellow-cheeked Crested gibbon (in Vietnam and Cambodia).

Action Plan 8.6: Cooperate and collaborate with international partners such as INGO's and research institutions to further the implementation of this action plan.

Expected outcome:

– International organizations and individuals will be encouraged to participate activities of this Action Plan in accordance with laws and regulations of Vietnam.

– Programs and international cooperation projects on scientific research and in-situ conservation of endangered primates will be encouraged and prioritized.

Such above tasks and activities can meet general needs for primate conservation with 8 prior projects (Details in Annex 1). Other prior activities for each species will be presented in Annex 4.

PART 4

IMPLEMENTATION SOLUTIONS

4.1. Raise Responsibilities of Management Agencies and Community on Primate Conservation

- To review and complete legislative framework, policies on biodiversity conservation including primates;

- To strengthen the organization and capacity for state management agencies on primate conservation;

- To develop and implement accordingly guideline documents for the supervision, monitoring and support the protection, conservation and development of primate population and habitats;

- To establish inter-ministerial and inter-regional mechanisms to coordinate activities of agencies and localities in the management and conservation of primates;

- To integrate the conservation of endangered, rare and precious primates of prioritized protection to Strategies, plans, planning, programs and projects on socio-economic development in a sustainable manner;

- To develop a sustainable financial mechanism, favorable policies to mobilize and attract domestic and international organizations and individuals for investment, technology transfer for the sustainable protection and development of primates in Vietnam.

4.2. Application of Science and Technology to Primate Conservation

- To enhance surveys, scientific research on primatology and biological conservation of endemic, endangered, rare, and precious primates;

- To conduct research and apply advanced technology in the conservation, protection, and development of primate populations;

- To modernize infrastructure of universities, institutes and research centers for scientific research on conservation of primates;

- To develop and enhance research stations and primate rescue centers.

4.3. Communication, Education and Awareness Raising

- To conduct publicity via mass media on primate conservation; to raise awareness and foster stewardship for primate conservation in their habitats;

- To conduct training of relevant stakeholders in communication, education, and awareness raising about primate conservation.

4.4. International Cooperation

- To actively participate in Conventions, International, and Regional Agreements;

- To diversify cooperation in primate conservation to have funds and technical assistance.

- To enhance international cooperation in research, training, HR development and investment in projects for primate conservation;

- To raise cooperation in collection, handling, and sharing of relevant information in primate conservation;

- To prevent the illegal trade and transport of primates, their products among countries.

4.5. Budget for Implementation

Budget for implementation of the Plan are prepared and allocated from state budget for the Program for Sustainable Forestry Development and allocated to Ministries, agencies, provinces in accordance with their current delegation authority; income from forest environmental services and support from organizations, individuals; other legal resources.

PART 5

IMPLEMENTATION AGENCIES

5.1. Responsibilities

1. Ministry of Agriculture and Rural Development is responsible for:

a) Supporting the Prime Minister to chair, coordinate and implement the Plan;

b) Chairing and coordinating with other Ministries, agencies and localities for the implementation of the Plan;

c) Chairing and coordinating with relevant Ministries and agencies to have guidelines to localities and local units to develop, conduct appraisal and approval of projects on primate conservation;

d) Following tasks and assigned priority programs, projects and plans;

d) Chairing and mobilizing domestic and international funds for the implementation of this Plan;

e) Having supervision of the implementation progress, organizing preliminary and summary events of the plan implementation in 2025; having periodical reports to the Prime Minister of the Plan implementation;

g) The Minister of MARD submits to the Prime Minister to establish the Steering Committee for the implementation of the Plan. The Minister of MARD will be the Chair of the Committee. The participants, operational rules of the Committee and Coordinating Office will be decided by Chair of the Committee.

2. Ministry of Natural Resources and Environment is responsible for:

a) Coordinating closely with MARD and other ministries and agencies to carry out tasks under the scope, responsibilities and powers of the Ministry;

b) Integrating this action plan with the implementation of the National Strategy on Biodiversity in 2020, vision to 2030, to avoid redundancy with other tasks and activities;

c) Following tasks and assigned priority programs, projects and plans.

3. Ministry of Planning and Investment is responsible for:

a) Allocating financing expenses for this Action Plan's activities.

b) Mobilizing domestic and international funds for conservation and sustainable development of endangered, rare and precious primates in NPs and NRs.

4. Ministry of Finance is responsible for:

Chairing and coordinating with the MPI, based on the availability of state budget and the approved allocated amount by the National Congress, to allocate budget for the implementation of programs and projects for the conservation of endangered, rare, and precious primate species; having guidelines, supervision, and monitoring the use of funds allocated from the State budget in accordance with the Law on State Budget management and other legal regulations; in collaboration with the Ministry of Agriculture and Rural Development, Ministry of Natural Resources and Environment and other ministries, central agencies involved in developing mechanisms of financial policies to promote social mobilization, mobilization of funds rather than the state budget, to encourage organizations and individuals to have investment in conservation and sustainable development of endangered, rare, and precious primates.

5. Other relevant Ministries and agencies (Ministry of Science and Technology, Ministry of Education and Training, Ministry of Culture, Sports and Tourism) are responsible for participating in and creating favorable conditions for the implementation of this Action Plan.

6. Law enforcement agencies including Customs, Police, Forest rangers, Border Guard, Market management, Procuratorate and the Court are responsible for coordination with VNFOREST in conducting the inventory, management, and monitoring of primate specimens; strengthening law enforcement to control hunting, use, and illegal trade of primates and their parts and products in domestic markets and at international borders.

7. Relevant PPCs are responsible for:

a) Implementing the Conservation Action Plan in localities following the guidelines of MARD, other ministries, and functional agencies;

b) Mobilizing and allocating local resources and using the allocated resources from the Central government for appropriate purposes and with high efficiency;

c) Organizing publicity, educating about biodiversity and primate conservation; increasing patrols and law enforcement to conserve biodiversity and for primate conservation; increasing the supervision of law enforcement in nature reserves;

d) Integrating effectively tasks and activities of this Action Plan with the provincial Plan for biodiversity conservation; strengthening inter-sectoral

coordination; integrating the conservation activities of endangered and precious primates into planning for local socio-economic development;

đ) Directing functional agencies to develop investment projects for publicity, supervision, and monitoring of endangered, rare, and precious primate species;

e) Having periodic reports on the status and implementation of the Plan to MARD to consolidate and report to the Prime Minister.

8. Relevant NPs and NRs are responsible for meeting requirements of Plan implementation. The Management Boards of NPs and NRs actively develop and directly implement activities of primate conservation for primates that have distribution within their managing areas, have adequate human resources for the conservation of endangered, rare, and precious primate species of prioritized protection; integrate primate conservation with other management and protection activities in NPs or NRs that are home to primates.

9. Universities, colleges and vocational training units (VNU Hanoi University, VNU HCMC University, Thai Nguyen University, Vinh University, Hue University, Tay Nguyen University, HCMC Agriculture and Forestry University, Forestry University, etc.) and Institutes for scientific research (such as the Institute of Ecology and Biological Resources, Southern Institute of Ecology, Institute of Tropical Biology, Forest Inventory and Planning Institute, Central Institute for Natural Resources and Environmental Studies, Institute of Vietnam Forestry Science, etc.) chair the development and implementation of scientific research, projects on primate conservation, studies on solutions for minimizing unintentional use and exploitation of primate species; actively coordinate with functional agencies of MARD to expand relations with domestic and international partners to import measures and new technologies to primate conservation in Vietnam.

10. Relevant enterprises, organizations, community and individuals

- Enterprises are responsible for implementing laws and regulations on biodiversity conservation, including rare, precious, and endangered primates; participating, proposing and implementing programs and projects on primate conservation.

- Political and social organizations and local communities are responsible for implementing targets, tasks, and activities of this Action Plan; monitoring and conducting the assessment of primate conservation activities; and publicizing to raise local awareness about responsibilities for primate conservation.

11. Domestic and international organizations and agencies relating to primate conservation have favorable conditions to participate and make proposals for activities and projects for primate conservation, get financial and technical support for research and conservation of primates in accordance with this Action Plan.

5.2.12. Vietnamese Primatological Society – VPS will contribute to promote and enhance scientific understanding and conservation of primates in Vietnam. Its purposes include: 1) raising awareness and improving the quality of the research and conservation activities for primates in Vietnam; 2) raising capacity for research and conservation activities for primates in Vietnam; 3) acting as the focal point of programs and projects on collaborative research and conservation of primates in Vietnam; and representing the primatologist community to collect and contribute comments from experts on primate conservation in Vietnam and across the world.

5.2. Monitoring and Evaluation

5.2.1. Monitoring

Monitoring of the Action Plan is aimed at enhancing the efficiency and effectiveness of conservation objectives and goals by providing information and feedback to policy makers to adjust the Plan and have significant solutions.

Main work related to monitoring under this Plan includes:

- Assessment of results and shortcomings in accordance with objectives, actions, and implementation progress;
- Mobilization of resources and financing;
- Analysis, assessment of effectiveness and impacts of Plan implementation;
- Identification and analysis of outstanding issues having impacts on the implementation of the Plan and necessary solutions for amendment.

5.2.2. Evaluation

The focus of evaluation will be on evaluating the effectiveness and impacts of the action plan for conservation of primate species in Vietnam. Evaluation will be based on the objectives and actions of the Plan. Objectively, evaluation must be conducted by independent organizations and agencies including international organizations and non-governmental organizations.

Main contents of the evaluation include:

- Change on policies, socio-economic and environment aspects relating to objectives of the Plan;

- The implementation of objectives and actions of the Plan such as protection and development of primate populations, improvement and expansion of living habitats, local living standards, and contributions of projects on primate protection to socio-economic development;
- The coordination of conducting the Plan among Ministries, agencies, and relevant organizations.

PART 6

IMPLEMENTATION IMPACTS

6.1. Environmental Impacts

The implementation of this “Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030” will ensure the existence and stable habitats for primates, especially endangered, rare, and precious primate species in Vietnam. Via conservation activities, forested areas will be protected and developed in a sustainable manner, primates and other wildlife species will be monitored closely, and there will be stable and sustainable development of the natural environment. This will bring the practical benefits for the environment; natural forests will be protected and developed; water sources and natural resources will be preserved; conservation and storage of genetic resources as well as biodiversity information will be conducted; natural disasters will be limited; natural habitats and ecological security for human beings will be protected.

The conservation of primates and other wildlife species living within their habitats will contribute to environmental protection, nature reserves and biodiversity conservation to prevent and mitigate the adverse impacts of climate change.

6.2. Socio-economic Impacts

The implementation of this conservation action plan will create more jobs to attract local people and communities to participate actively in primate conservation and nature conservation, creating livelihoods to help improve incomes and economic development for local communities in primate conservation project areas.

This Action Plan also helps to deal with existing problems in the management, protection, and conservation of primates; to handle conflicts between biodiversity conservation and socio-economic development goals; to promote the green sustainable development of Vietnam.

Conservation and sustainable development of endemic, endangered, rare, and precious primates of Vietnam is also the conservation and development of natural, cultural, and traditional values for long life afterwards.

ANNEXES

Annex 1: List of Priority Projects

No	Name	Focal Agency	Coordinating Agency	Estimated Cost (billion VND)	Funding Sources
1	Review and strengthen legislative framework on primate conservation	MARD	MONRE IEBR, SIE, VNU, VFU, VPS	5	State budget
2	Improve law enforcement for protection of primate populations and their habitats	MARD	MONRE Ministry of Public Security Ministry of National Defense IEBR, SIE, VNU, VFU, VPS	40	State budget
3	Integrate and prioritize primate conservation activities in management plans of protected areas within the distribution of endangered, rare and precious primate populations.	MARD	MONRE VPS IEBR, SIE, VNU, VFU, IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR, Association of Vietnam's NPs and NRS	50	State budget
4	Raising awareness about primate conservation by enhancing conservation education programs	MARD	MONRE VPS IEBR, SIE, VNU, VFU, IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR	30	State budget
5	Conduct scientific research programs to support	MARD	MONRE VPS, IEBR, SIE, VNU, VFU,	50	Non-business expenditure source

	and improve primate conservation planning of in Vietnam		IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR, Association of Vietnam's NPs and NRS	100	Assistance of International organizations
6	Complete national-standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)	MARD	MONRE VPS, IEBR, SIE, VNU, VFU, IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR	24 26	State budget Assistance of International organizations
7	Develop protocols of responsible-ecotourism for endangered, rare and precious primates	MARD	MONRE VPS, IEBR, SIE, VNU, VFU, IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR	8 10	State budget Assistance of International organizations
8	Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade	MARD	MONRE VPS, IEBR, SIE, VNU, VFU, IUCN, WWF, WCS, FFI, GIZ, TRAFFIC, EPRC, GoEAST, AsiaAnimals, WAR, Association of Vietnam's NPs and NRS	8 10	State budget Assistance of International organizations

Annex 2: List of Primates in Vietnam

TT	Common name	Scientific name	Conservation status				
			32	160	VNRB	IUCN	CITES
	Lorises	Loridae					
1	Pygmy slow loris	<i>Nycticebus pygmaeus</i>	IB	X	VU	EN	I
2	Bengal slow loris	<i>Nycticebus bengalensis</i>	IB	X	VU	EN	I
	Cercopithecids	Cercopithecidae					
	Leaf monkeys	Colobinae					
3	Grey langur	<i>Trachypithecus crepusculus*</i>	IB	X	EN	EN	II
4	Delacour's langur	<i>T. delacouri</i>		X	CR	CR	I
5	Francois' langur	<i>T. francoisi</i>	IB	X	EN	EN	II
6	Indochinese silvered langur	<i>T. germaini**</i>	IB	X	VU	EN	II
7	Annamese silvered langur	<i>T. margarita***</i>	IB	X	VU	EN	II
8	Hatinh langur	<i>T. hatinensis</i>	IB	X	EN	EN	II
9	Cat Ba langur	<i>T. poliocephalus</i>	IB	X	CR	CR	I
10	Grey-shanked douc	<i>Pygathrix cinerea</i>	IB	X	CR	CR	I
11	Red-shanked douc	<i>P. nemaus</i>	IB	X	EN	CR	I
12	Black-shanked douc	<i>P. nigripes</i>	IB	X	EN	CR	I
13	Tonkin snub-nosed monkey	<i>Rhinopithecus avunculus</i>	IB	X	CR	CR	I
	Macaques	Cercopithecinae					
14	Stump-tailed macaque	<i>Macaca arctoides</i>	IIB		VU	VU	II
15	Assamese macaque	<i>M. assamensis assamensis</i>	IIB		VU	NT	II
16	Long-tailed macaque	<i>M. fascicularis fascicularis</i>	IIB		LR	LC	II
17	Con Dao long-tailed macaque	<i>M. fascicularis condorensis</i>	IIB			CR	
18	Northern pig-tailed macaque	<i>M. leonina</i>	IIB		VU	VU	II
19	Rhesus macaque	<i>M. mulatta</i>	IIB		LR	LC	II
	Gibbons	Hylobatidae					
20	Northern buff-cheeked gibbon	<i>Nomascus annamensis***</i>	IB	X		EN	I
21	Western black-crested gibbon	<i>N. concolor</i>	IB	X	EN	CR	I
22	Yellow-cheeked crested gibbon	<i>N. gabriellae</i>	IB	X	EN	EN	I
23	Northern white-cheeked gibbon	<i>N. leucogenys</i>	IB	X	EN	CR	I
24	Cao Vit gibbon	<i>N. nasutus</i>	IB	X	EN	CR	I
25	Southern white-cheeked gibbon	<i>N. siki****</i>	IB	X	EN	CR	I

Notes:

32 – Decision No. 32/2006/ND-CP: IB – Group IB. Wild Animal Species are strictly prohibited to exploitation and use for commercial purposes.

160 – Decision No. 160/2013/ND-CP: X – species under list of endangered, precious and rare species

VNRB – Vietnam’s Red Data Book (2007): CR – Critically Endangered; EN – Endangered; VU – Vulnerable
IUCN – IUCN Red List (2016): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; LC – Least Concerned
CITES – CITES: I – Appendix I; II – Appendix II
*named as *Trachypithecus barbei* (*T. phayrei*); ** named as *Trachypithecus villosus* (*T. cristatus*);
*** newly described in 2010, known as *Nomascus gabriella*; **** ugraded from subspecies *Nomascus leucogenys siki* of White-cheeked gibbon (*Nomascus leucogenys*).

Annex 3: List of priority areas for primate conservation in 2017 – 2025

No.	Protected areas	Location (province/city)	Total area (ha)	Endangered primates
National Parks				
1.	Ba Be	Bac Kan	10.048,00	– Tonkin snub-nosed monkey (habitat) – Francois’ langur
2.	Bach Ma	Thua Thien-Hue	34.380,00	– Red-shanked douc – Northern buff-cheeked gibbon
		Quang Nam	3.107,00	
3.	Bến En	Thanh Hoa	14.735	– Bengal slow loris – Pygmy slow loris
4.	Bidoup-Nui Ba	Lam Dong	57.512,00	– Black-shanked douc – Yellow-cheeked gibbon
5.	Bu Gia Map	Binh Phuoc	25.926,00	– Bengal slow loris – Pygmy slow loris – Black-shanked douc – Yellow-cheeked gibbon
6.	Cat Ba	Hai Phong	15.996,36	– Cat Ba langur
		Quang Ninh	1.366,60	
7.	Cat Tien	Dong Nai	51.721,6	– Annamite silvered langur – Black-shanked douc – Yellow-cheeked gibbon
		Lam Dong	27.228,77	
		Binh Phuoc	4.193,00	
8.	Chu Mom Ray	Kon Tum	56.237,00	– Grey-shanked douc – Red-shanked douc – Black-shanked douc – Northern buff-cheeked gibbon
9.	Chu Yang Sin	Dak Lak	66.980,20	– Black-shanked douc – Yellow-cheeked gibbon
10.	Con Dao	Ba Ria-Vung Tau	5.830,70	– Con Dao long-tailed macaque
11.	Cuc Phuong	Ninh Binh	11.440,00	– Delacour’s langur
		Hoa Binh	5.972,50	
		Thanh Hoa	4.996,30	
12.	Du Gia-Cao Nguyen da Dong Van	Ha Giang	13.651,20	– Tonkin snub-nosed monkey
13.	Hoang Lien	Lao Cai	21.009,00	– Western black-crested gibbon
		Lai Châu	7500,00	
14.	Kon Ka Kinh	Gia Lai	42.057,30	– Grey-shanked douc – Northern buff-cheeked gibbon

No.	Protected areas	Location (province/city)	Total area (ha)	Endangered primates
15.	Lo Go-Xa Mat	Tay Ninh	19.156,00	– Pygmy slow loris – Voọc bạc – Black-shanked douc
16.	Mui Ca Mau	Cà Mau	15.262,00	– Indochinese silvered langur
17.	Nui Chua	Ninh Thuan	22.513,00	– Bengal slow loris – Pygmy slow loris – Black-shanked douc
18.	Phong Nha-Ke Bang	Quang Binh	123.320,78	– Bengal slow loris – Pygmy slow loris – Red-shanked douc – Hatinh langur – White-cheeked gibbon siki
19.	Phu Quoc	Kien Giang	29.625,00	– Indochinese silvered langur
20.	Phuoc Binh	Ninh Thuan	19.684,00	– Black-shanked douc
21.	Pu Mat	Nghe An	93.524,70	– Red-shanked douc – Grey langur
22.	Ta Dung	Dak Nong	20.242,39	– Black-shanked douc – Yellow-cheeked gibbon
23.	Vu Quang	Ha Tinh	52.741,50	– Endangered species
24.	Yok Don	Dak Lak	111.125,95	– Annamite silvered langur – Black-shanked douc – Yellow-cheeked gibbon
		Dak Nong	2.728,00	
Nature Reserves/Species and Habitat Conservation Areas				
25.	An Toan	Binh Định	22.450,00	– Grey-shanked douc
26.	Ba Na-Nui Chua	Da Nang	27.980,60	– Red-shanked douc
27.	Bac Huong Hoa	Quang Tri	23.486,00	– Red-shanked douc – White-cheeked gibbon siki
28.	Son Tra Peninsula	Đà Nẵng	2.591,10	– Red-shanked douc
29.	Binh Chau-Phuoc Bửu	Ba Ria-Vung Tau	10.263,00	– Black-shanked douc
30.	Cham Chu	Tuyen Quang	15.262,30	– Tonkin snub-nosed monkey
31.	Dakrong	Quang Trị	37.681,00	– Red-shanked douc – Northern buff-cheeked gibbon

No.	Protected areas	Location (province/city)	Total area (ha)	Endangered primates
32.	Bac Ma	Ha Giang	9.042,50	– Tonkin snub-nosed monkey (habitat)
33.	Hoang Lien-Van Ban	Lao Cai	25.094,00	– Western black-crested gibbon
34.	Hon Ba	Khanh Hoa	19.285,83	– Black-shanked douc – Yellow-cheeked gibbon
35.	Kim Hy	Bac Kan	15.715,02	– Tonkin snub-nosed monkey (habitat)
36.	Kon Chu Rang	Gia Lai	15.446,00	– Yellow-cheeked gibbon – Grey-shanked douc
37.	Muong La	Son La	17.000,00	– Western black-crested gibbon
38.	Na Hang	Tuyen Quang	21.238,70	– Francois' langur – Tonkin snub-nosed monkey
39.	Nam Nung	Dak Nong	12.307,80	– Black-shanked douc – Yellow-cheeked gibbon
40.	Ngoc Linh	Quang Nam	17.190,00	– Grey-shanked douc
41.	Ngoc Linh	Kon Tum	38.008,66	– Grey-shanked douc
42.	Nui Ong	Binh Thuan	23.834,00	– Black-shanked douc – Yellow-cheeked gibbon
43.	Phong Dien	Thua Thien-Hue	41.508,70	– Red-shanked douc
44.	Phong Quang	Ha Giang	8.445,60	– Tonkin snub-nosed monkey (habitat)
45.	Pu Hoat	Nghe An	34.589,89	– Grey langur – White-cheeked gibbon
46.	Pu Hu	Thanh Hoa	22.688,37	– Bengal slow loris – Pygmy slow loris – Grey langur – White-cheeked gibbon
47.	Pu Huong	Nghe An	40.186,50	– White-cheeked gibbon
48.	Pu Luong	Thanh Hoa	17.171,53	– Delacour's langur (habitat)
49.	Sao la Thua Thien-Hue	Thua Thien-Hue	15.519,93	– Red-shanked douc – Northern buff-cheeked gibbon
50.	Song Thanh	Quang Nam	75.274,34	– Grey-shanked douc
51.	Ta Kou	Binh Thuan	8.407,00	– Black-shanked douc – Annamite silvered langur
52.	Tay Yen Tu	Bac Giang	12.172,20	– Tonkin snub-nosed monkey (habitat)
53.	Van Hoa Dong Nai	Dong Nai	64.752,00	– Black-shanked douc – Yellow-cheeked gibbon

No.	Protected areas	Location (province/city)	Total area (ha)	Endangered primates
54.	Van Long	Ninh Binh	2.235,00	– Delacour’s langur.
55.	Xuan Lien	Thanh Hoa	23.815,50	– Grey langur – White-cheeked gibbon
56.	Mu Cang Chai	Yen Bai	20.108,20	– Western black-crested gibbon
57.	Asian Elephant NR	Quang Nam	17.484,36	– Grey-shanked douc
58.	Nam Dong	Thanh Hoa	646,95	– Grey langur
59.	South Xuan Lac	Bac Kan	4.155,67	– Tonkin snub-nosed monkey (habitat)
60.	Sao La Quang Nam	Quang Nam	15.380,00	– Grey-shanked douc
61.	Trung Khanh	Cao Bang	9.573,68	– Cao Vit gibbon
62.	Hon Chong	Kien Giang	964,70	– Indochinese silvered langur
63.	Huong Son	Ha Noi	3.760,00	– Delacour’s langur
64.	Nui Ba Đen	Tay Ninh	1.761,00	– Indochinese silvered langur
65.	Yen Tu	Quang Ninh	2.783,00	– Tonkin snub-nosed monkey (habitat)
Other sites				
66.	Tung Vai Forest (Quan Ba)	Ha Giang	~ 5.000	– Tonkin snub-nosed monkey
67.	Karst forest of Thach Hoa – Dong Hoa (Tuyen Hoa)	Quang Binh	~ 1.000	– Hatinh langur
68.	Karst forest of Kim Bang	Ha Nam	No information	– Delacour’s langur
69.	Primary forests in Kon Plong and Kon Ray Distrcits	Kon Tum	~ 120.000	– Grey-shanked douc – Nornthern buff-cheeked gibbon
70.	Lam Binh Forest Enterprise	Tuyen Quang	No information	– Francois’ langur
71.	Primary forests in Quang Truc, Tuy Duc Dsitric	Dak Nong	~ 35.000	– Pygmy slow loris – Black-shanked douc – Yellow-cheeked gibbon

Annex 4: Information of Primates in Vietnam²

1. Pygmy slow loris (*Nycticebus pygmaeus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): VU
- IUCN Red List (2016): EN
- CITES: Appendix I

Global status and distribution: *N. pygmaeus* occurs throughout Vietnam and also east of the Mekong River in eastern Cambodia, Lao PDR, and southernmost China (southeastern Yunnan). The western limit of its distribution is uncertain but it appears to be absent or very rare west of the Mekong plain. The global population is unknown.

Summary Status and distribution in Vietnam: *N. pygmaeus* occurs throughout Vietnam in forested areas up to 1,500 m elevation, but at very low densities. The key threats to species include hunting and habitat loss due to development and fragmentation. The species is heavily exploited in Vietnam and internationally for their use as exotic pets and in traditional medicines. The site with the highest recorded density (0.48 individuals/km, confirmed by independent studies) is Bu Gia Map National Park in Binh Phuoc Province, which is a key site for conservation for this species, as is Dong Nai Nature Reserve.

Priority Conservation Actions: Action 1: Control of illegal wildlife trade in lorises including demand reduction efforts and mitigation of illegal online trade. Action 2: Capacity building for protected area scientific staff and community members at key conservation sites to conduct nocturnal population surveys, monitoring, and demand reduction. Action 3: Surveys in northern and central Vietnam to improve understanding of distribution and population size of both species. Action 4: Standardize best practices for rehabilitation, release and post-release monitoring of healthy individuals confiscated from wildlife trade.



Figure 4.1. Pygmy slow loris

Photo: Tran Van Bang/SIE

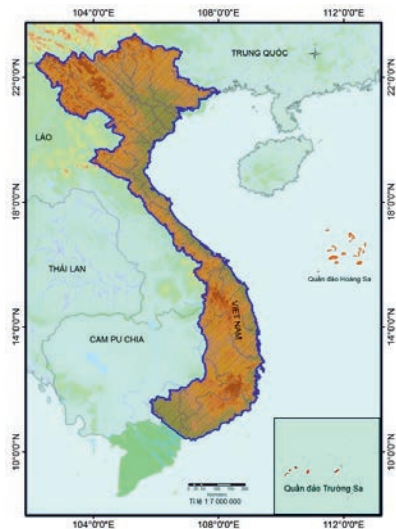


Figure 4.2. Distribution map of Pygmy slow loris in Vietnam

²Source and maps from Nadler & Brockman (2014) và IUCN (2015)

2. Bengal slow loris (*Nycticebus bengalensis*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): VU
- IUCN Red List (2016): EN
- CITES: Appendix I

Global status and distribution: *N. bengalensis* has a wide range, occurring in Bangladesh, north-eastern India, Myanmar, Thailand north of the Isthmus of Kra, Lao PDR, China (southern and western Yunnan and possibly southwestern Guangxi), Cambodia west of the Mekong River, and Vietnam. The global population is unknown

Summary Status and distribution in Vietnam:

N. bengalensis occurs in forested areas up to 2400m and has a disjunct distribution in Vietnam; it has been known historically to occur throughout northern and central Vietnam as far south as Quang Nam Province, and there is also a large population on Phu Quoc Island. However, recent surveys have not recovered Bengal lorises in Quang Nam and suggest very small, dwindling populations in the north, with more animals seen being traded than during forest surveys. Additional important sites for conservation would include protected areas in northern Vietnam that have confirmed populations of both species, such as Na Hang Nature Reserve. The key threats to species include hunting and habitat loss due to development and fragmentation. The species is heavily exploited in Vietnam and internationally for their use as exotic pets and in traditional medicines. Rapid development for tourism on Phu Quoc also threatens the only confirmed healthy population of *N. bengalensis* in Vietnam.

Priority Conservation Actions: Action 1: Control of illegal wildlife trade in lorises including demand reduction efforts and mitigation of illegal online trade. Action 2: Capacity building for protected area scientific staff and community members at key conservation sites to conduct nocturnal population surveys, monitoring, and demand reduction. Action 3: Surveys in northern and central Vietnam to improve understanding of distribution and population size of both species. Action 4: Standardize best practices for rehabilitation, release and post-release monitoring of healthy individuals confiscated from wildlife trade. Action 5: Improved development planning and environmental impact assessment on Phu Quoc to mitigate the impacts of developments on loris habitats.



Figure 4.3. Bengal slow loris
Photo: Hoanhg Minh Duc/SIE

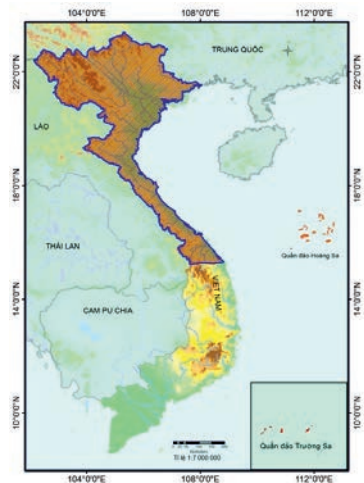


Figure 4.4. Distribution map of Bengal slow loris in Vietnam

3. Delacour's langur (*Trachypithecus delacouri*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam's Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Endemic to Vietnam

Summary Status and distribution in Vietnam: This species is restricted to a small region of northern Vietnam including portions of Ninh Binh, Hoa Binh, Thanh Hoa, and Ha Nam Provinces. Recent surveys (Nadler, 2015) have documented that the occurrence of this species in nine areas and the total wild population is estimated to be between 234 and 275 individuals. In addition, eight local populations have been eradicated during the past 16 years. An ex-situ population of 15 animals exists at the Endangered Primate Rescue Center (EPRC). The key threats to this species is habitat loss due to development and fragmentation and especially hunting.

Priority Conservation Actions: Action 1: Extending Van Long NR to include an additional 4,000 ha and upgrading this protected area to national park status. This would more than double the area of good habitat for the largest remaining wild population. Action 2: Translocating members of isolated groups, particularly those outside of protected areas, to improve the genetic diversity of populations that receive these animals, either captive or wild. Action 3: Develop a large and viable ex-situ population as an insurance colony which can function as a basis for developing a second viable in-situ population. Action 4: Explore possibility of a reintroduction program for the Trang An Scenic Landscape Complex. Action 5: Improved protection of all remaining populations particularly those in protected areas.



Figure 4.5. Delacour's langur
Photo: Le Khắc Quyết

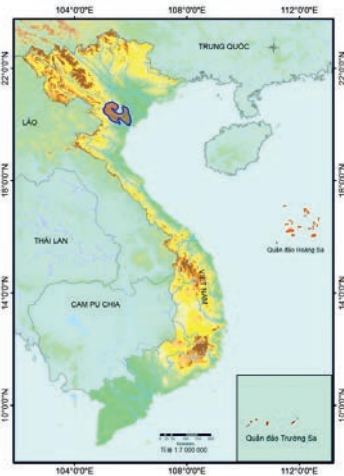


Figure 4.6. Distribution map of Delacour's langur in Vietnam

4. Indochinese silvered langur (*Trachypithecus germaini*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam's Red Data Book (2007): VU (as named *T. villosus*)
- IUCN Red List (2016): EN
- CITES: Appendix II

Global status and distribution: *T. germaini* occurs to the west of the Mekong River in Southern Lao PDR, where it has been reported as far north as about 15.4°N, south to the tip of the Mekong Delta in Ca Mau province. The southernmost record is reported (South limit of 8°50' N) in Ca Mau Province. It is widely distributed throughout Cambodia west of the Mekong, from the Cardamom Mountains in the southwest, through the flooded forests of the Tonle Sap Lake, and across the Northern Plains landscape bordering Lao PDR. It also occurs along the Mekong River in northern Cambodia, in particular along the braided section of the Mekong between Stung Treng and Kratie Towns. To the west, it occurs through Kanchamburi Province in southern Thailand to the Bay of Bengal in Myanmar. Global population is unknown.

Summary Status and distribution in Vietnam: *T. germaini* occurs in a very small area of southern Vietnam and is confirmed in Kien Giang Province on Phu Quoc Island and the Kien Luong Karst area; in one location in An Giang Province, and in a small area of Cau Ma Province. Key sites for conservation include the Kien Luong Karst area and Phu Quoc NP. Population in Vietnam is likely less than 500 individuals. The key threats to this taxon include hunting, habitat loss due to development and fragmentation. In particular limestone quarrying will destroy the habitat of half of the subpopulation in Kien Luong in the coming years and rapid development for tourism on Phu Quoc.

Priority Conservation Actions: Action 1: Improved development planning and environmental impact assessment on Phu Quoc to mitigate the impacts of developments on silvered langur habitats. Action 2: Work with limestone mining companies in Kien Luong to develop corridors between forested limestone blocks. Action 3: Surveys in Phu Quoc Island to improve understanding of distribution and population size.



Figure 4.7. Indochinese silvered langur

Photo: Le Khắc Quyet

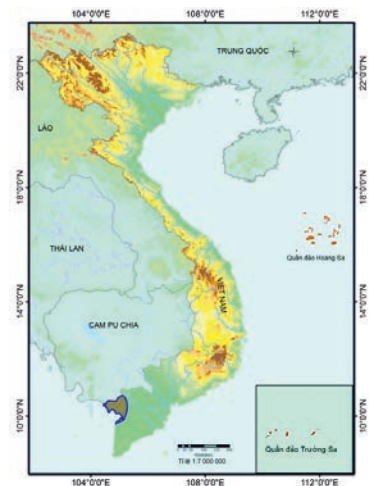


Figure 4.8. Distribution map of Indochinese silvered langur in Vietnam

5. Annamite silvered langur (*Trachypithecus margarita*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): VU (under *T. villosus*)
- IUCN Red List (2016): EN
- CITES: Appendix II



Figure 4.9. Annamite silvered langur

Photo: Tran Van Bang/SIE

Global status and distribution: East of the Mekong River in Lao PDR (south of 16°23’N), Cambodia, Central and Southern Vietnam (south of 14°30’N). Global population unknown but appears to be rare throughout its range.

Summary Status and distribution in Vietnam: It is confirmed in a small number of locations from Gia Lai Province (14°30’N) with the southernmost record at 10° 24’N in Ba Ria – Vung Tau Province (Tran Van Bang pers.com). Isolated populations occur throughout this region including key sites for conservation in Ta Kou NR, Cat Tien NP, Bu Gia Map NP, Kon Ka Kinh NP, Yok Don NP, and Chu Mom Ray NP. Population in Vietnam is likely to be less than 1,000 individuals. The key threats to the taxon include habitat loss due to land use changes, especially in the Central Highlands in Vietnam, hunting, use in traditional medicine, and the pet trade.

Priority Conservation Actions: Action 1: Gun control in communities adjacent to key population sites; Action 2: Control of illegal wildlife trade; Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on silvered langur habitats; Action 4: Surveys in key sites to gain a much better idea of distribution and population size.

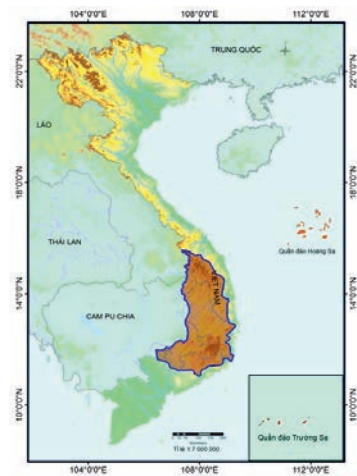


Figure 4.10. Distribution map of Annamite silvered langur in Vietnam

6. Cat Ba langur (*Trachypithecus poliocephalus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Endemic to Vietnam

Summary Status and distribution in Vietnam: Restricted to Cat Ba Island, Hai Phong Province, which is the only site for the taxon. A small ex-situ population of five animals exists at the Endangered Primate Rescue Center. Total wild population estimated to be approximately 70 individuals divided into three sub-populations, two of which are currently breeding (Cua Dong and Sanctuary) and one which is not (Hang Cai). Historically hunting caused the decline that led to the current status, however current threats revolve around issues with small population size and increasing disturbance due to tourism.

Priority Conservation Actions: Action 1: Develop and implement a plan for meta-population management including in-situ and ex-situ populations. Action 2: Review and revise national park zoning to ensure protection of habitat corridors and appropriate habitat for population expansion. Action 3: Assess tourism and development impacts on current and future population and ensure biological needs of the taxon are included in planning. Action 4: Implement continuous population monitoring of all sub-populations. Action 5: Conduct ecological research on the taxon to educate management plans. Action 6: Extend education and awareness of the species to neighboring provinces, especially in Quang Ninh province.



Figure 4.11. Cat Ba langur
Photo: Le Khắc Quyet

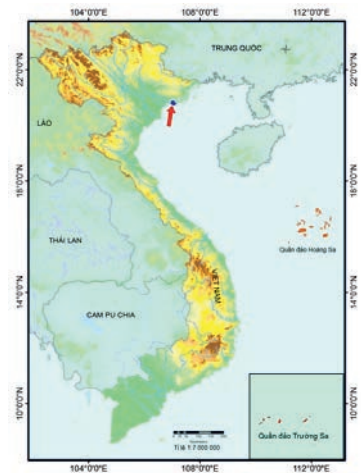


Figure 4.12. Distribution map of Cat Ba langur in Vietnam

7. Francois' langur (*Trachypithecus francoisi*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam's Red Data Book (2007): EN
- IUCN Red List (2016): EN
- CITES: Appendix I

Global status and distribution: Francois' langur is restricted from South China to Northeast Vietnam. Global population is estimated 1.600 – 2.000 individuals.

Summary Status and distribution in Vietnam: Francois' langur is recorded in Ha Giang, Tuyen Quang, Cao Bang, Bac Kan and Thai Nguyen Province. However, due to illegal hunting and habitat loss, many Francois' langur populations in Tuyen Quang, Cao Bang, Bac Kan and Thai Nguyen have been eradicated. Recently, there are a few records of this species in Du Gia NR (Ha Giang), Lam Binh Forestry Enterprise and Na Hang NR (Tuyen Quang), Ba Be NP (Bac Kan). The key threats to the taxon include illegal hunting and trapping for traditional medicine, habitat loss and fragmentation due to agricultural encroachment, construction and hydrodams. Estimated population number is 180 – 200 individuals.

Priority Conservation Actions: Action 1: Conduct intensive census surveys in Du Gia NR (Ha Giang) and Lam Binh Forestry Enterprise (Tuyen Quang); Action 2: Conduct field surveys to confirm status and distribution in Vietnam. Action 3: Establish a species/habitat conservation area in Lam Binh. Action 4: Gun control in communities adjacent to key population sites. Action 5: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.13. Francois' langur

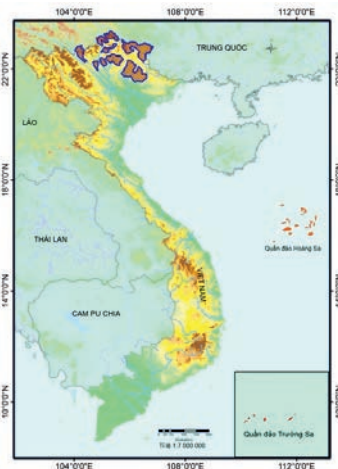


Figure 4.14. Distribution map of Francois' langur in Vietnam

8. **Hatinh langur (*Trachypithecus hatinhensis*)**

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): EN
- IUCN Red List (2016): EN
- CITES: Appendix II

Global status and distribution: Hatinh langur occurs in the forests on limestone of Central Vietnam and Central Lao PDR. Global population is unknown.

Summary Status and distribution in Vietnam: Hatinh langur occurs Ha Tinh, Quang Binh and Quang Tri Provinces. The largest population is in Phong Nha-Ke Bang NP (Quang Binh) having an estimation of about 150 individuals (Nguyen Van Truong, 2013) to 2.143 (± 467) individuals (Haas et al., 2009). Other smaller populations are recorded in Thach Hoa Commune of Tuyen Hoa District (Quang Binh), Ke Go NP (Ha Tinh), Khe Net and Khe Nuoc Trong NRs, and Long Dai Forestry Enterprise (Quang Binh) and Bac Huong Hoa NR (Quang Tri) (Nadler và Brockman, 2014). The key threats to the taxon include illegal hunting and trapping for traditional medicine, habitat loss and fragmentation due to agricultural encroachment.

Priority Conservation Actions: Action 1: Conduct intensive census surveys in Phong Nha-Ke Bang NP and forest of Thach Hoa Commune, Tuyen Hoa District (Quang Binh). Action 2: Conduct field surveys to confirm status and distribution in Vietnam. Action 3: Assess conservation potential of the species in Tuyen Hoa District (Quang Binh). Action 4: Gun control in communities adjacent to key population sites. Action 5: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.15. Hatinh langur
Photo: Le Khac Quyet

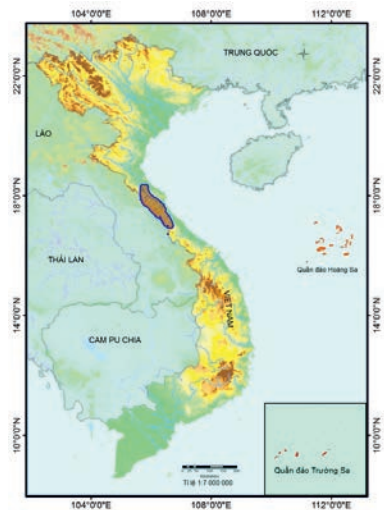


Figure 4.16. Distribution map of Hatinh langur in Vietnam

9. Grey langur (*Trachypithecus crepusculus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007):EN
- IUCN Red List (2016): EN
- CITES: Appendix II

Global status and distribution: Grey langur occurs in Southwestern China, Southern Myanmar, Northern Thailand, Northern and Central Lao PDR and Northern Vietnam. Global population is unknown.

Summary Status and distribution in Vietnam: Grey langur has reported from Lai Chau, Dien Bien, Son La, Yen Bai, Hoa Binh, Thanh Hoa and Nghe An Provinces. Recently, there is very few data on its population status in Vietnam. The largest known population is in Xuan Lien NR (Thanh Hoa), and probably Pu Hoat NR (Nghe An). Number of population is estimated about 500 individuals. The key threats are illegal hunting for traditional medicine and local consumption, habitat loss and fragmentation due to agricultural encroachment, construction and hydrodam development.

Priority Conservation Actions: Action 1: Conduct intensive census surveys in Xuan Lien NR (Thanh Hoa) and Pu Hoat NR (Nghe An). Action 2: Conduct field surveys to confirm status and distribution in Vietnam. Action 3: Gun control in communities adjacent to key population sites. Action 4: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats. Action 5: Promote scientific studies of behavioral ecology and conservation for long term.

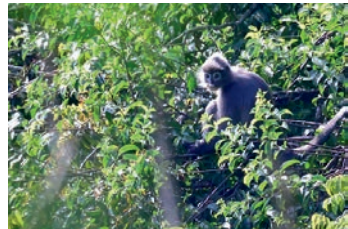


Figure 4.17. Grey langur
Photo: Le Khắc Quyet

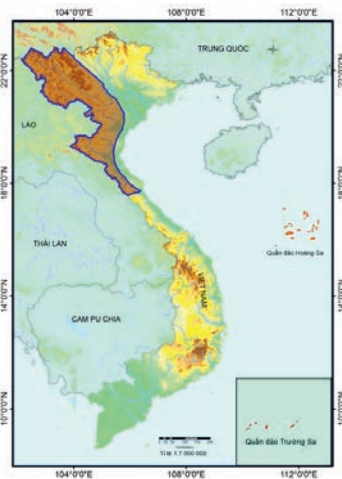


Figure 4.18. Distribution map of Grey langur in Vietnam

10.

11. Grey-shanked douc (*Pygathrix cinerea*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: This species occurs in central Vietnam and possibly a small area in NE Cambodia. Global population is unknown but likely less than 2,000.

Summary Status and distribution in Vietnam: This species occurs in Quang Nam, Kon Tum, Quang Ngai, Gia Lai and Binh Dinh Provinces of central Vietnam in an area of about 28,000 km². Estimate whole population in Vietnam is about 1,450-1,700 individuals. There are 13 isolated sub-populations currently confirmed with available data. Among those sub-populations, 4 sub-populations live in protected forests (Kon Ka Kinh National Park, Kon Chu Rang Nature Reserve, Ngoc Linh National Park, Song Thanh Nature Reserve) with about 560-600 individuals in the area of 1,200 km² nature forest. Kon Ka Kinh NP has a largest remain grey-shanked douc with about 250 individuals in area of 420 km². 9 sub-populations live in un-protected forests contain other half total number of the species with about 600 individuals. The newest survey of sub-population of grey-shanked douc is in Kon Plong district forest. This reveals that the sub-population of about 450 individuals in Kon Plong is very important for the exchange of gene pool. The key threats to the taxon include hunting for traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture and building hydro power station, and construction of roads.

Priority Conservation Actions: Action 1: Establish a protected area or appropriate conservation measure to conserve the sub-population in Kon Plong forest, Kon Tum Province. Action 2: Conduct surveys to estimate the population status of sub-populations live outside the protected forests in Quang Nam, Quang Ngai, Binh Dinh and Phu Yen. Action 3: Establish a green corridor between Kon Ka Kinh National Park and Kon Chu Rang Nature Reserve to save the gene flow between the two protected areas. Action 4: Integrating the primate monitoring program on protected forest Plan in Kon Ka Kinh NP, Song Thanh NR, Kon Chu Rang NR and Ngoc Linh NR. Action 5: Conduct education initiative at the provincial level to inform public about the species and conservation value of the grey-shanked douc.



Figure 4.19. Grey-shanked douc

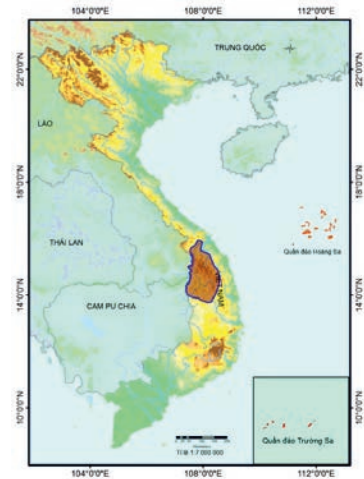


Figure 4.20. Distribution map of Grey-shanked douc in Vietnam

12. Red-shanked douc (*Pygathrix nemaeus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): EN
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Red-shanked douc occurs in Lao, North central and Central Vietnam, and Northeastern Cambodia. Global population estimation is unknown. The large and important populations are in Lao.

Summary Status and distribution in Vietnam: Red-shanked douc occurs in a range from Nghe An to Kon Tum Province. The key sites of its conservation are Phong Nha-Ke Bang NP (Quang Binh) containing the largest Vietnam’s population of about 2.000 individuals, Dak Rong NR (Quang Tri), Bach Ma NP (Thua Thien-Hue and Da Nang), Son Tra NR containing about 600 – 700 individuals. There are probably unknown populations outside of PA system. The key threats are illegal hunting for local consumption and traditional medicine, and trade for pets and zoos. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population declination in Vietnam.

Priority Conservation Actions: Action 1: Conduct field surveys on status and distribution of populations outside of PA system in Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien-Hue, Da Nang and Quang Nam. Provinces. Action 2: Integrate primate monitoring program into operational program of PAs containing Red-shanked doucs. Action 3: Initiate conservation awareness and education programs for communities and social organizations. Action 4: Continue to study Red-shanked douc populations in Phong Nha-Ke Bang NP and Son Tra NR.



Figure 4.21. Red-shanked douc
Photo: Le Khac Quyet

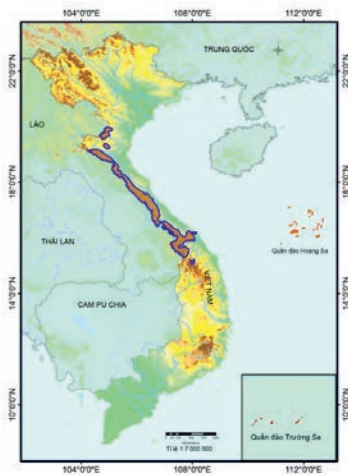


Figure 4.22. Distribution map of Red-shanked douc in Vietnam

13. Black-shanked douc (*Pygathrix nigripes*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam's Red Data Book (2007): EN
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Black-shanked douc distributes in South Vietnam and East Cambodia. Global population number is unknown. The largest population is estimated 40,000 individuals in Seima Biodiversity Conservation Area (Cambodia).

Summary Status and distribution in Vietnam: Black-shanked douc occurs in a range from Chu Mom Ray NP (Kon Tum) to Cat Tien NP (Dong Nai). Key populations are confirmed in Ta Kou NR (Binh Thuan), Nui Chua NP (Ninh Thuan), Bu Gia Map NP (Binh Phuoc), Bidoup-Nui Ba NP (Lam Dong) và Cat Tien NP (Dong Nai). The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption, and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture.

Priority Conservation Actions: Action 1: Conduct field surveys of populations outside of protected areas. Action 2: Integrate primate monitoring program into operational program of PAs containing Black-shanked doucs. Action 3: Initiate conservation awareness raising programs for local communities, authorities and social organizations. Action 4: Promote scientific studies of behavioral ecology and conservation for long term.



Figure 4.23. Black-shanked douc

Photo: Le Khắc Quyet

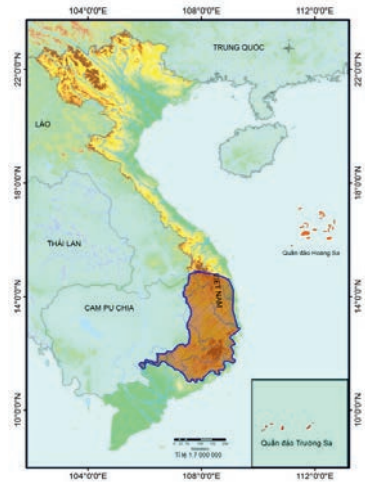


Figure 4.24. Distribution map of Black-shanked douc in Vietnam

14. Tonkin snub-nosed monkey (*Rhinopithecus avunculus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Endemic to Vietnam

Summary Status and distribution in Vietnam: Restricted to a small area in Northeast Vietnam and presently confirmed to occur only in Tuyen Quang and Ha Giang Provinces. Key sites for conservation include Khau Ca and Tung Vai in Ha Giang and Na Hang NR and Cham Chu NR in Tuyen Quang. The Global population is thought to be less than 200 individuals (approximately ~110 at Khau Ca, ~30 Tung Vai, <30 in Na Hang, <20 in Cham Chu). Hunting and habitat degradation are the primary threats to Tonkin snub-nosed monkeys. Cardamom cultivation is a particular threat to the population at Tung Vai.

Priority Conservation Actions: Action 1: Gun confiscation programs in areas surrounding present populations of Tonkin snub-nosed monkeys. Action 2: Mitigate impacts of cardamom cultivation at Tung Vai. Action 3: support process of protected area designation in Quang Ba with focus on appropriate zonation. Action 4: Habitat restoration and expansion program for the Khau Ca forest area. Action 5: review boundary of Du Gia – Dong Van NP ensuring that ecologically important habitat is protected (particularly on the southern edge of Khau Ca) and then clear demarcation. Action 6: habitat protection of the forest corridor linking Khau Ca forest and Du Gia forest. Action 7: Intensive population survey in Tat Ke, Ban Bung, Cham Chu, and Du Gia.



Figure 4.25. Tonkin snub-nosed monkey

Photo: Le Khac Quyet

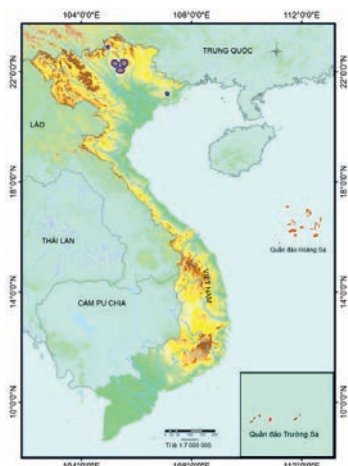


Figure 4.26. Distribution map of Tonkin snub-nosed monkey in Vietnam

15. Stump-tailed macaque (*Macaca arctoides*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): VU
- IUCN Red List (2016): VU
- CITES: Appendix II

Global status and distribution: Stump-tailed macaque occurs in a wide range in Southeast Asia including Northern Myanmar, South China, Lao, Cambodia, Thailand, Vietnam and Malaysia. Global population estimation is unknown.

Summary Status and distribution in Vietnam: Stump-tailed macaque occurs in almost forested regions from Ha Giang to Dak Nong Provinces. There is no population assessment in Vietnam, however, the number of population of Stump-tailed macaque seems to be declined rapidly. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population decline in Vietnam

Priority Conservation Actions: Action 1: Conduct field surveys to confirm status and distribution in Vietnam. Action 2: Gun control in communities adjacent to key population sites. Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.27. Stump-tailed macaque

Photo: Le Khắc Quyet

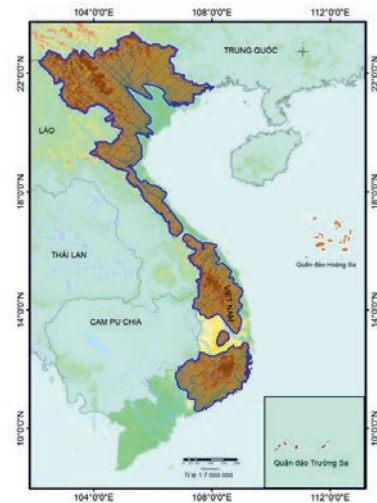


Figure 4.28. Distribution map of Stump-tailed macaque in Vietnam

16. Northern pig-tailed macaque (*Macaca leonina*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Không
- Vietnam's Red Data Book (2007): VU
- IUCN Red List (2016): VU
- CITES: Appendix II

Global status and distribution: Northern pig-tailed macaque occurs in Eastern Bangladesh, Northeastern India, South China, Myanmar, Lao, Thailand, Cambodia and Vietnam. Global population estimation is unknown.

Summary Status and distribution in Vietnam: Northern pig-tailed macaque is recorded from Ha Giang to Central Vietnam. The Annamite Mountains has high density. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population declination in Vietnam

Priority Conservation Actions: Action 1: Conduct field surveys to confirm status and distribution in Vietnam. Action 2: Gun control in communities adjacent to key population sites. Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.29. Northern pig-tailed macaque

Photo: Hoang Minh Duc/SIE

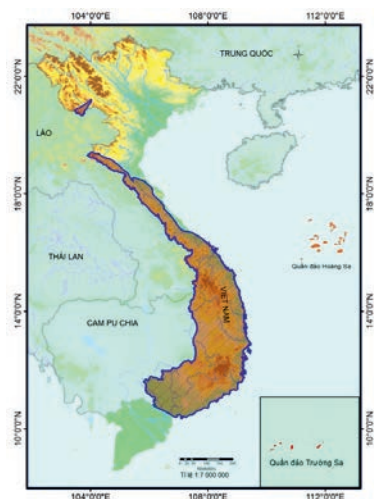


Figure 4.30. Distribution map of Northern pig-tailed macaque in Vietnam

17. Assamese macaque (*Macaca assamensis*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Không
- Vietnam’s Red Data Book (2007): VU
- IUCN Red List (2016): VU
- CITES: Appendix II

Global status and distribution: Assamese macaque occurs widely from Bhutan, Southwestern China, Northeastern India, Northern Lao, Myanmar, Northwestern Thailand and Northern Vietnam. Global population estimation is unknown.

Summary Status and distribution in Vietnam: Assamese macaque distributes from Ha Giang to Quang Nam Provinces. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population declination in Vietnam

Priority Conservation Actions: Action 1: Conduct field surveys to confirm status and distribution in Vietnam. Action 2: Gun control in communities adjacent to key population sites. Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.31. Assamese macaque

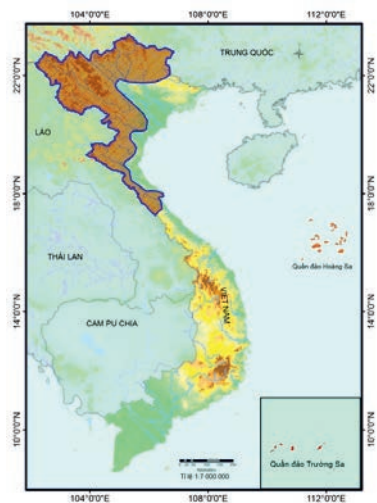


Figure 4.32. Distribution map of Assamese macaque in Vietnam

18. Long-tailed macaque (*Macaca fascicularis fascicularis*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Không
- Vietnam’s Red Data Book (2007): LC
- IUCN Red List (2016): LC
- CITES: Appendix II

Global status and distribution: Long-tailed macaque occurs in Indonesia, Brunei, Malaysia, Philippine, Singapore, South Thailand, Cambodia and South Vietnam. Global population estimation is unknown.

Summary Status and distribution in Vietnam: Long-tailed macaque commonly distributes from Thua Thien-Hue to Southern provinces. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population declination in Vietnam

Priority Conservation Actions: Action 1: Conduct field surveys to confirm status and distribution in Vietnam. Action 2: Gun control in communities adjacent to key population sites. Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.33. Long-tailed macaque
Photo: Hoang Minh Duc/SIE

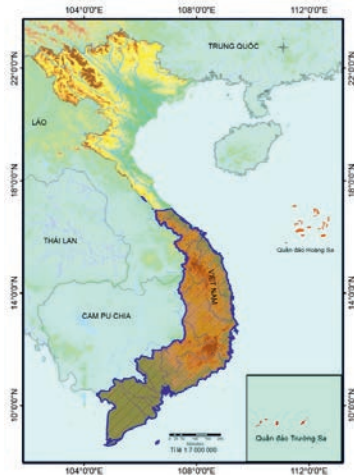


Figure 4.34. Distribution map of Long-tailed macaque in Vietnam

19. Con Dao long-tailed macaque (*Macaca fascicularis condorensis*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Không
- Vietnam’s Red Data Book (2007): LR

- IUCN Red List (2016): CR
- CITES: Appendix II

Global status and distribution: Endemic to Vietnam.

Summary Status and distribution in Vietnam: Endemic to the islands of Con Son, Hon Ba, Bay Cach and Hon Troc of the Con Dao archipelago, Ba Ria-Vung Tau Province; Con Dao National Park is the only site to conserve this taxon. Genetically and morphologically distinct from the mainland population. Estimated population 1500-2000 individuals. Key threats include tourism and infrastructure development projects, human-macaque conflict, potential introduction of non-native macaques and potentially hunting.

Priority Conservation Actions: Action 1: Review development plans including road development on west of island and tourism infrastructure development to avoid fragmenting population on Con Son from that on Hon Ba; Action 2: Initiate human-macaque conflict avoidance programme; Action 3: Address artificial provisioning of macaque populations on Con Son and Hon Dai islands; Action 4: Remove non-native population of *Macaca arctoides* from Hon Dai island to mainland Vietnam; Action 5: Conduct undercover wildlife trade assessment; Action 6: Conduct additional genetic research to clarify whether two taxa of long-tailed macaques occur in the archipelago.



Figure 4.35. Con Dao long-tailed macaque

Photo: Nguyen Van Truong

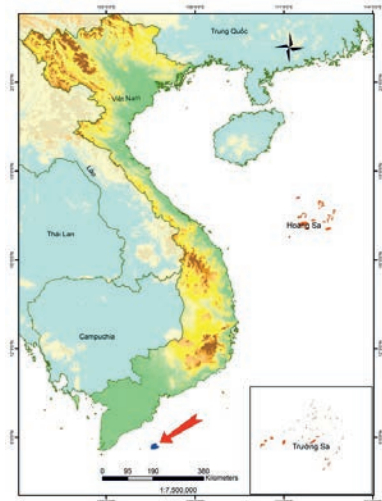


Figure 4.36. Distribution map of Con Dao long-tailed macaque

20. Rhesus macaque (*Macaca mulatta*)

- Decision No. 32/2006/ND-CP: IIB
- Decision No. 160/2013/ND-CP: Không
- Vietnam’s Red Data Book (2007): LC
- IUCN Red List (2016): LC
- CITES: Appendix II

Global status and distribution: Rhesus macaque is recorded in almost throughout Asia, from East Afghanistan, Bangladesh, Bhutan, Central and South China, North and Central India, Nepal, Pakistan, Myanmar, Thailand, Lao and Vietnam. The global population is unknown.

Summary Status and distribution in Vietnam: Rhesus macaque occurs in a wide range from Ha Giang to Dak Lak Provinces, parts of Dak Nong Lam Dong Provinces. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture. Habitat loss and fragmentation due to conversion to agriculture and construction of roads and hydrodams are also threatening to rapid population decline in Vietnam

Priority Conservation Actions: Action 1: Conduct field surveys to confirm status and distribution in Vietnam. Action 2: Gun control in communities adjacent to key population sites. Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on its habitats.



Figure 4.37. Rhesus macaque

Photo: Hoang Minh Duc/SIE

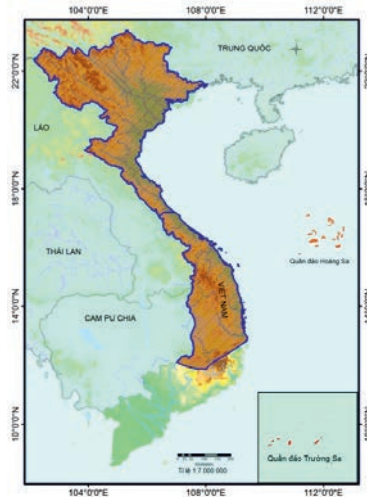


Figure 4.38. Distribution map of Rhesus macaque in Vietnam

21. Northern buff-cheeked gibbon (*Nomascus annamensis*)

- Decision No. 32/2006/ND-CP: NE
- Decision No. 160/2013/ND-CP: NE
- Vietnam's Red Data Book (2007): NE
- IUCN Red List (2016): NE
- CITES: No

Global status and distribution: Central Vietnam; Central and Southern Lao PDR, Northeastern Cambodia. Global population unknown but significant populations in SE Lao PDR and NE Cambodia.

Summary Status and distribution in Vietnam: Relatively widespread in Vietnam, found in nine provinces from Quang Tri in the north to Gia Lai and in the south and within at least 11 protected areas. Key sites for conservation include the contiguous Dak Rong and Phong Dien Nature Reserves with more than 80 groups; Song Thanh, Ngoc Linh (Kon Tum) and Ngoc Linh (Quang Nam) Nature Reserve complex; and the Kon Ka Kinh, Kon Cha Rang Nature Reserve (Gia Lai Province), Kon Plong District (Kon Tum Province) complex. The species population is relatively well known in Vietnam with >200 groups confirmed although additional groups doubtless exist. Holdings of the taxon in ex-situ institutions is unknown and likely confused due to changing taxonomy. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture, and construction of roads and hydroelectric dams.

Priority Conservation Actions: Action 1: Gun control in communities adjacent to key population sites; Action 2: Control of illegal wildlife trade in gibbons including confiscations and crackdown on gibbon traders; Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on gibbon habitats; Action 4: Landscape level planning for gibbon and other biodiversity conservation ensuring maintenance of habitat corridors through key sites for conservation; Action 5: Joint protection efforts between communities and management authorities in key protected sites for conservation; Action 6: Additional research to determine the distributional boundaries between *N. annamensis* and *N. siki*.



Figure 4.39. Northern buff-cheeked gibbon

Photo: Ben Rawson/IUCN

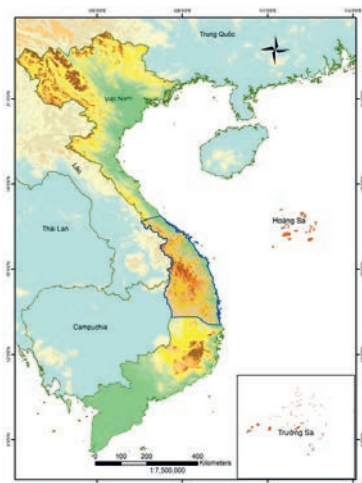


Figure 4.40. Distribution map of Northern buff-cheeked gibbon in Vietnam

22. Western black-crested gibbon (*Nomascus concolor*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: No



Figure 4.41. Western black-crested gibbon

Global status and distribution: Northwestern Vietnam; Northwestern Lao PDR; Southwest China. Global population may number about 2,500 individuals with the majority of the population found in Yunnan Province, China.

Summary Status and distribution in Vietnam: Restricted to a single population in Mu Cang Chai SHCA, Yen Bai Province and adjoining Muong La District, Son La Province. The population in Hoang Lien-Van Ban NR is likely functionally extinct. The total population remaining in Vietnam is ~20 groups with the majority occurring in Mu Cang Chai SHCA. Deforestation and hunting have led to the species decline in Vietnam. In the Muong La/Mu Cang Chai SHCA area the main threats to gibbons are hunting with guns, conversion of forest for agriculture, expanding understory cardamom cultivation and ongoing forest degradation processes.

Priority Conservation Actions: Action 1: Gun control; Action 2: Support designation of the Muong La Nature Reserve which includes appropriate zoning based on biodiversity values and boundary demarcation in conjunction with participatory land-use planning; Action 3: Develop village level regulations for forest resource use to control deforestation and forest degradation processes and hunting; Action 4: Reduce impacts from fuelwood collection through fuel efficient stoves and fuelwood plantations; Action 5: Stream PFES funding into village level forest protection contracts and support community-based patrolling; Action 6: Ensure transboundary coordination between management authorities in Muong La and Mu Cang Chai SHCA for enforcement and threat mitigation.

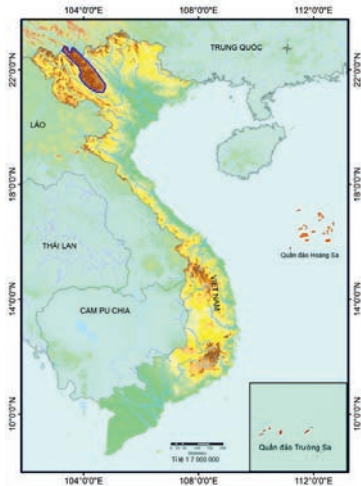


Figure 4.42. Distribution map of Western black-crested gibbon in Vietnam

23. Yellow-cheeked gibbon (*Nomascus gabriellae*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam's Red Data Book (2007): EN
- IUCN Red List (2016): EN
- CITES: Appendix I

Global status and distribution: Southern Vietnam; Eastern Cambodia. Global population unknown but significant populations E Cambodia.

Summary Status and distribution in Vietnam: Relatively widespread in Vietnam and likely the most common gibbon taxon. Found from Gia Lai and Yen Phu Provinces in the north to Binh Thuan Province in the south. Key sites for conservation include Cat Tien National Park and surrounding State Forest Enterprises and parts of Dong Nai Nature Reserve; Bu Gia Map National Park and surrounding forests; and the Chu Yang Sin National Park, Bi Dup-Nui Ba National Park, Phuoc Binh National Park and Hon Ba Nature Reserve complex. There are ex-situ holdings of the taxon nationally and internationally. The key threats to the taxon include hunting to supply the commercial demand from the pet trade and zoos, traditional medicine and local consumption and loss and fragmentation of forest habitats due to legal and illegal logging, conversion for agriculture, and infrastructure development.

Priority Conservation Actions: Action 1: Gun control in communities adjacent to key population sites; Action 2: Control of illegal wildlife trade in gibbons including confiscations and crackdown on gibbon traders; Action 3: Improved development planning and environmental impact assessment to mitigate the impacts of developments on gibbon habitats; Action 4: Landscape level planning for gibbon and other biodiversity conservation ensuring maintenance of habitat corridors through key sites for conservation; Action 5: Joint protection efforts between communities and management authorities in key protected sites for conservation.

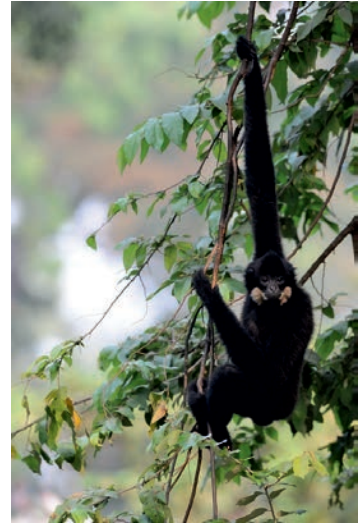


Figure 4.43. Yellow-cheeked gibbon

Photo: Le Van Dung

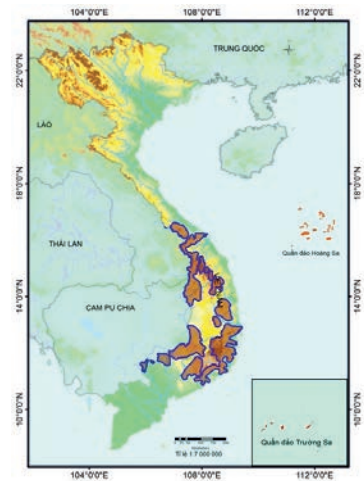


Figure 4.44. Distribution map of Yellow-cheeked gibbon in Vietnam

24. White-checked gibbon (*Nomascus leucogenys*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): EN
- IUCN Red List (2016): CR
- CITES: Appendix I

Global status and distribution: Northwestern Vietnam; Northern Lao PDR; Southwest China (provisionally extinct).

Summary Status and distribution in Vietnam: Confirmed extant in the provinces of Dien Bien, Son La, Thanh Hoa, Nghe An and Ha Tinh. Key sites for conservation include Pu Mat NP, Xuan Lien NR and Muong Nhe with other protected areas within the distribution of the taxon thought to hold small populations. Recent local level extinctions have been recorded inside protected areas, highlighting the high threat the taxon is under. Total population in Vietnam may be 300 groups, highly fragmented within and between sites. Significant ex-situ populations exist in both national and international facilities. Large scale deforestation and high hunting pressure have resulted in remaining populations being isolated, internally fragmented and under severe pressure.

Priority Conservation Actions: Action 1: Identify key locations/concentrations of gibbons within priority protected areas for targeted protection; Action 2: Gun control and effective enforcement in priority protected areas; Action 3: Engage communities impacting key populations and disseminate environmental education and involve in conservation activities (e.g. patrols); Action 4: Assess populations in under-surveyed areas that may hold significant populations; Action 5: Develop transboundary conservation between key protected areas in Vietnam and Lao PDR.

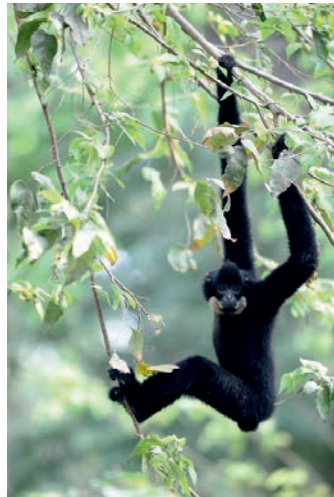


Figure 4.45. White-checked gibbon

Photo: Le Van Dung

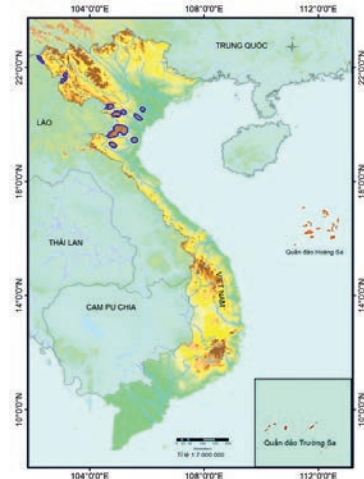


Figure 4.46. Distribution map of White-checked gibbon in Vietnam

25. Cao Vit gibbon (*Nomascus nasutus*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: No

Global status and distribution: Endemic to Cao Bang Province Vietnam and Guang Xi Province, China. Estimated number of population is 130 individuals.

Summary Status and distribution in Vietnam:

Restricted to a single forest block on the Sino-Vietnam border, included in the transboundary protected areas of the Cao Vit Gibbon Conservation Area (Vietnam) and Bangliang National Nature (China). No ex-situ population exists. Total population estimated to be ~130 individuals in 24 groups and is believed to be increasing. Large scale deforestation and hunting have led to the species decline. Lack of available habitat for population expansion and small population size represent significant threats as does ongoing forest degradation.

Priority Conservation Actions: Action 1: Assisted natural regeneration of habitats in the core zone and reforestation activities in the bufferzone; Action 2: Reduce anthropogenic impacts on gibbon habitat through development of fuelwood and elephant grass plantations, goat removal and cattle exclusion fencing; Action 3: Develop conservation-friendly community livelihood development projects through trainings and study tours; Action 4: Transboundary cooperation between Vietnamese and Chinese protected areas, forestry and law enforcement officials; Action 5: Population monitoring and research to understand the population dynamics of the taxon.

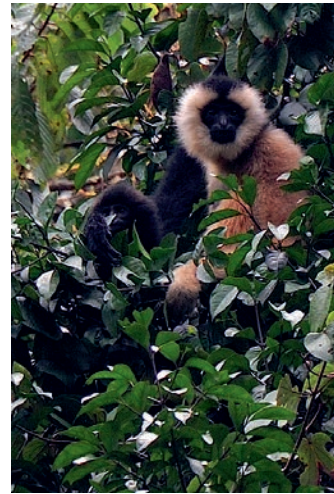


Figure 4.47. Cao Vit gibbon
Photo: Nguyen Van Truong

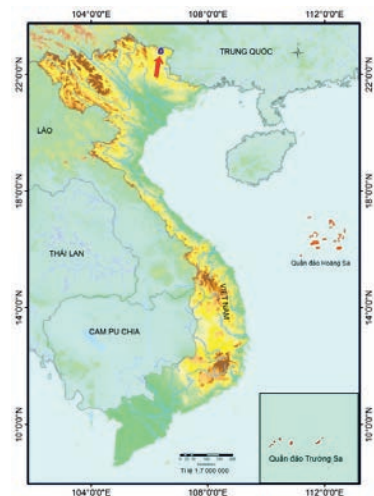


Figure 4.48. Distribution map of Cao Vit gibbon in Vietnam

26. Southern white-cheeked gibbon (*Nomascus siki*)

- Decision No. 32/2006/ND-CP: IB
- Decision No. 160/2013/ND-CP: Yes
- Vietnam’s Red Data Book (2007): CR
- IUCN Red List (2016): CR
- CITES: No

Global status and distribution: Central Vietnam; Central Lao PDR. Global population unknown.

Summary Status and distribution in Vietnam: Restricted to the Central Vietnamese provinces of Ha Tinh, Quang Binh and Quang Tri. Key sites for conservation include two large forest complexes, the Phong Nha-Ke Bang National Park-Truong Son State Forest Enterprise and Khe Giua State Forest Enterprise-Bac Huong Hoa Nature Reserve which contain the majority of the Vietnamese population, although these populations are undocumented. Animals of the taxon exist in national and international zoo collections. The key threat to the taxon in Vietnam is hunting.

Priority Conservation Actions: Action 1: Comprehensive population surveys in key sites for conservation and set up of population monitoring; Action 2: Gun control in communities adjacent to key population sites; Action 3: Targeted and sustained patrolling in areas with high concentrations of gibbons within key sites; Action 4: Detailed threat assessments and threat mitigation plans.

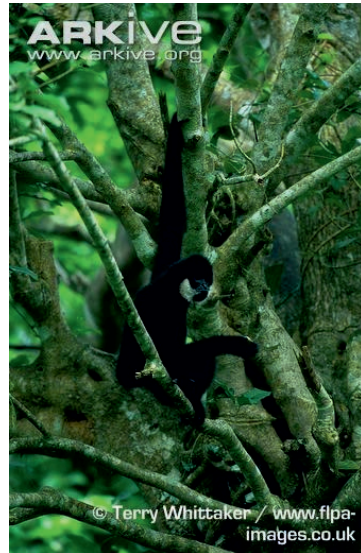


Figure 4.49. Southern white-cheeked gibbon

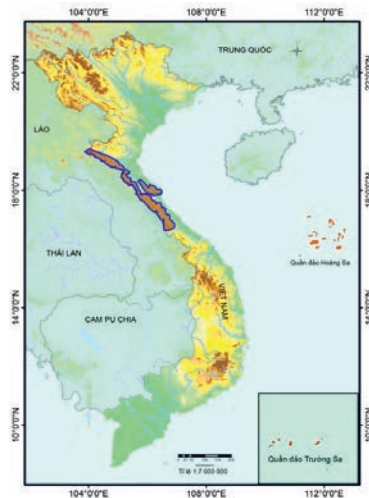


Figure 4.50. Distribution map of Southern white-cheeked gibbon in Vietnam

Annex 4: List of agencies, organizations, individuals and donors participating to develop the Urgent Conservation Action Plan for Primates in Vietnam to 2025, vision to 2030

1. Steering Committee

1. Head of VNFOREST
2. Head of Department of Nature Conservation – VNFOREST
3. Head of VEA
4. Head of Biodiversity Department – VEA

2. Editorial Board

No	Name	Responsibility
1	Mr. Cao Chi Cong	Head
2	Dr. Tran The Lien	Deputy Head
3	Dr. Pham Anh Cuong	Deputy Head
4	Dr. Hoang Thi Thanh Nhan	Member
5	Mr. Doan Minh Tuan	Member
6	Mr. Tong Anh Tuan	Member
7	Dr. Nguyen Vu Linh	Member
8	Ms. Nguyen Thi Van	Member
9	Mr. To Van Thao	Member
10	Mr. Dao Viet Trung	Member
13	Mr. Nguyen Manh Hiep	Secretary
14	Mr. Bui Dang Phong	Member
11	Dr. Le Khac Quyet	Member /Technical Consultant
12	Ms. Tham Thi Hong Phuong	Member/Project Officer of GIZ

- International editorial advisers:

No	Name	Agency	Responsibility
1	Dr. Herbert Covert	University of Colorado (USA)	Head
2	Dr. Ben Rawson	WWF	Member
3	Dr. Mary Blair	American Museum of Natural History	Member
4	Mr. Tilo Nadler	Endangered Primate Rescue Center in Cuc Phuong NP	Member

3. Primate Experts

No	Name	Agency
I	Vietnamese experts	
1	Dr. Ha Thang Long	Frankfurt Zoological Society
2	Dr. Hoang Minh Duc	Southern Institute of Ecology

3	Dr. Dong Thanh Hai	VNUF
4	Dr. Nguyen Manh Ha	Southern Institute of Ecology
5	Mr. Vu Ngoc Thanh	VNU Hanoi University
6	Mr. Thach Mai Hoang	VNU Hanoi University
II	International experts	
1	Dr. Christian Roos	German Primate Center
2	Dr. Amy Levine	Denver Zoo
3	Dr. Jonathan O'Brien	University of Colorado
4	Mr. Neahga Leonard	Cat Ba Langur Conservation Project
5	Dr. Jake Bruner	IUCN

4. Donors

1. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
2. Frankfurt Zoological Society (FZS, Germany)
3. American Museum of Natural History (USA)
4. FFI Vietnam Programme
5. Douc Langur Foundation (DLF, USA)



Published by
giz
German-Vietnam
Cooperation
GIZ GmbH



**ASSESSMENT ON IMPLEMENTATION OF THE URGENT CONSERVATION
ACTION PLAN FOR PRIMATES IN VIETNAM TO 2025, WITH A VISION TO 2030**
(According to Decision No. 628/QĐ-TTg issued on May 10th, 2007)



Le Khắc Quyết
(Independent Consultant)

La Quang Trung
(Centre of Nature Conservation and Development)

Hanoi, December 2020

ABBREVIATIONS

AMNH	American Museum of Natural History
BBC-GEF Project	Integrating biodiversity conservation, adaptation to climate change and sustainable forest management in the Trung Truong Son landscape
CCD	Centre of Nature Conservation and Development
CITES	Convention on International Trade of Endangered Species
CRES	VNU-Central Institute for Natural Resources and Environmental Studies
DLF	Douc Langur Foundation
DOPAM	Department of Protected Area Management
FFI	Fauna & Flora International
FPD	Forestry Protection Department
FZS	Frankfurt Zoological Society
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GreenViet	GreenViet Centre
IEBR	Institute of Ecology and Biological Resources
IUCN	International Union for the Conservation of Nature
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources and Environment
NP	National Park
PA	Protected Area
PRCF	People, Resources and Conservation Foundation
SWW	Save Vietnam's Wildlife
VNFOREST	Vietnam Administration of Forestry
VNU	Vietnam National University
VNUF	Vietnam National University of Forestry
WAR	Wildlife at Risk
WWF	World Wildlife Fund

TABLE OF CONTENTS

Acknowledgement	98
Executive Summary	99
1. Introduction	100
1.1 Primates in Vietnam	100
1.2 Management and Conservation of Primates in Vietnam	100
1.3 The Urgent Conservation Action Plan for Primates in Vietnam to 2025 vision to 2030	101
2. Scope of the Report	102
3. Methodologies	102
3.1 Literature Review	102
3.2 Expert consultation	102
3.3 Field survey	103
4. Results and Discussion	103
4.1 General review	103
4.2 Specific Objectives	103
4.3 Tasks and Solutions	104
4.4 Budget for implementation	107
4.5 Implementation of relevant stakeholders	119
4.6 Species conservation of primates in Vietnam	126
4.7 Primate conservation in priority sites in Vietnam	128
5. Conclusions and Recommendations	135
5.1 Conclusions	135
5.2 Recommendations	135
6. Reference	137
Appendices	138
Appendix 1. List and conservation status of Primates in Vietnam	138
Appendix 2. Some publications of primates in Vietnam in period of 2017-2020	140
Appendix 3. Decision No. 3394/QĐ-BNN-TCLN establishing the Steering Committee	142
Appendix 4. Some provincial notices directing to implementation of the Decision No. 628/QĐ-TTg	144
Appendix 5. Decision No. 709/STH recognized Vietnam Primate Branch	147
List of Tables	
Table 1. Progress and implementation level in specific objectives in period of 2017-2020	103
Table 2. Progress and implementation level of tasks in period 2017-2020	104
Table 3. Summary of progress and level of implementation on tasks and solutions in period of 2017-2020	108
Table 4. Some primate conservation project funded by the State budget in period 2017-2020	118
Table 5. Functions and responsibilities of relevant ministries, agencies, organizations and individuals in implementation of the Decision No. 628/QĐ-TTg	120
Table 6. Status of species conservation of primates in Vietnam in period of 2017-2020	126
Table 7. Status on implementation of the Decision No. 628/QĐ-TTg in priority sites of primate conservation in Vietnam, 2017 – 2020	129

ACKNOWLEDGEMENTS

This report was produced in response to a request by the Department of Protected Area Management (DOPAM) – a department of the Vietnam Administration of Forestry (VNFOREST) at the Ministry of Agriculture and Rural Development (MARD) – with support of the German Development Cooperation (GIZ) project “Conservation and Sustainable Use of Biodiversity and Ecosystem Services in Vietnam – Phase II” (GIZ-Bio II).

We offer sincere thanks to: Ms. Anja Barth, Mr. Tran Le Tra, Ms. Nguyen Thi Hiep Hoa (GIZ-Bio II); and Mr. Nguyen Manh Hiep, Mr. Dong Anh Dai (DOPAM) for their generous support providing information and documentation for this report.

We are especially grateful to the following individuals for providing information on primate conservation work: Dr. Ha Thang Long (Frankfurt Zoological Society), Dr. Hoang Minh Duc (Southern Institute of Ecology), Mr. Nguyen Vu Khoi (Wildlife at Risk), Mr. Hoang Van Lam, Mr. Josh Kempinski (FFI Vietnam), Dr. Benjamin Rawson (WWF Vietnam), Mr. Bui Xuan Truong (BCC-GEF Project), Mr. Nguyen Mau Toan (Xuan Lien Nature Reserve), Mr. Nguyen Quang Sy (Ben En National Park), Mr. Luu Trung Kien (Pu Mat National Park), Dr. Mary Blair (American Museum of Natural History), Mr. Tilo Nadler, Dr. Christian Roos (German Primate Centre), Dr. Herbert Covert (University of Colorado), Dr. Amy Levince, Mr. Luu Tuong Bach (Denver Zoo), Dr. Le Duc Minh (CRES) and Dr. Le Xuan Canh (IEBR).

We would also like to thank technical staff and rangers at the provincial forestry protection departments (FPD) at Cao Bang, Ha Giang and Ha Nam; Kim Bang District FPD, Mu Cang Chai Species/Habitat Conservation Area, Cao Vit Gibbon Species / Habitat Conservation Area in Trung Khanh, Pu Hoat Nature Reserve, and the many project staff who contributed to this report.

EXECUTIVE SUMMARY

The Decision No. 628/QĐ-TTg is an important legal document guiding and directing the activities of the Urgent Conservation Action Plan for Primates of Vietnam to 2025, with a Vision to 2030. Implementation of this Plan is the responsibility of ministries, agencies, organizations and individuals. However, in 2017-2020, the Plan was only implemented at very low level without the effective involvement of relevant parties due to many reasons, limitations and challenges in capacity, financial resources, and coordination in primate conservation in Vietnam.

This report provides information on a preliminary review and evaluation of the performance and implementation of the tasks and conservation activities in Vietnam under Decision No. 628/QĐ-TTg under support of GIZ-Bio project. Many national and international primatological experts were invited to comment and provide feedbacks to this report.

Primate conservation activities in 2017-2020 partially met the objectives and eight tasks of the Plan as mentioned in Decision 628/QĐ-TTg. Only Task 1: "Review and strengthen the legislative framework for primate conservation" was implemented; the other remaining tasks were implemented at low and medium levels or not implemented at all.

In 2017-2020, many primate conservation projects were implemented in Vietnam, including either multi-species conservation projects or those focusing on a few specific primate species. However, these projects are still small in scale, implemented with only a few species and in certain areas, and have not yet fully met the conservation needs of all primate species in Vietnam.

In the coming years, it is necessary to promote and continue to implement the following activities: 1) to prioritize development and implementation of projects within the List of Priority Projects; 2) to continue developing, implementing and improving the effectiveness of patrolling and protection of primate populations and habitats; 3) to develop and implement projects and activities to survey, research and protect endemic and endangered primate populations in areas outside the special use forest system; 4) to develop guidelines for integrating and budgeting for conservation activities of endangered primates into the operation plans of forest protection, management, and biodiversity conservation; 5) to prioritize the development and implementation of studies on population and habitat viability assessments (PHVA), and the adaptability to climate changes of endemic and critically endangered primates of Vietnam; 6) to develop and issue guidelines and standards for primate rescue, care, re-release and keeping in rescue centres, zoos, and conservation facilities; 7) to promote the establishment and operation of Vietnam's Primate Working Group and the Vietnamese Primatological Society; and 8) to develop a mechanism and system of reporting, monitoring and evaluating implementation of Decision No. 628/QĐ-TTg for all relevant agencies.

Budget sources from the "Target program for sustainable forestry development in the period of 2016-2020" will end in 2020; thus, the Government of Vietnam and relevant ministries and agencies will need to allocate budget sources for the continuation of primate conservation activities according to Decision No. 628/QĐ-TTg in the period of 2021-2025. Relevant ministries, agencies, organizations and individuals should continue sourcing and diversifying sustainable financial resources for primate conservation in Vietnam.

1. INTRODUCTION

1.1 Primates in Vietnam

Vietnam is a country with a highly diverse primate system with 25 species and subspecies that is second only to Indonesia in Southeast Asia. Primates in Vietnam are divided into 3 families: Lorises (Loridae, 2 species), Old World monkeys (Cercopithecidae, 17 species and sub-species) and Gibbons (Hylobatidae, 6 species). Of these, four are considered endemic including: the Tonkin Snub-nosed Monkey (*Rhinopithecus avunculus*), Delacour's langur (*Trachypithecus delacouri*), the Cat Ba langur (*Trachypithecus poliocephalus*) and the Con Dao Long-tailed macaque (*Macaca fascicularis condorensis*).

In Vietnam, primate species are distributed mainly in forest ecosystems throughout the territory and in some large islands. In particular, most national parks and nature reserves have reported distributions of primates and are important areas for nurturing and conservation.

Although protection has been an issue for many years, primates in Vietnam are still threaten due to various threats. Illegal hunting and trapping have been identified as major threats to the survival of many endangered primate populations. In addition to being illegally hunted, primates that are highly active on the ground, such as macaques, are being trapped in many forests across the country. Besides that, the habitats of primate species are being narrowed, reduced or divided due to human activities such as slash-and-burn cultivation, exploration of timber and non-timber forest products, conversion of forest land for agricultural land preparation, urbanization, infrastructure development (e.g., road systems), development of hydroelectric dams, and mineral exploitation, etc. The lack of funding and human resources are challenges for research and conservation of primates in Vietnam.

Currently, all primates in Vietnam are protected in accordance with the state laws on forestry and environmental protection. In particular, there are 19 primate species listed in the List of endangered, precious and rare species prioritized for protection in Decree No. 160/2013/ND-CP and Decree 64/2019/ND-CP; 19 species are listed in Group IB and 5 species in Group IIB on the List of endangered, precious and rare wild plants and animals in Decree 06/2019/ND-CP; 4 species are categorized as Critically Endangered (CR), 10 species Endangered (EN), 7 species Will be Endangered (VU) and 2 species under a Least Threat (LR) in Vietnam's Red Book (2007); 10 Critically Endangered (CR), 8 Endangered (EN), and 3 Endangered (VU) species are on the 2020 IUCN Red List (2020); 12 species in Appendix I and 13 species in Appendix II of CITES (2019).

1.2 Management and Conservation of Primates in Vietnam

Vietnam government has promulgated a system of legal documents on the management and protection of wild fauna and flora, including primates, which are always ranked in the group receiving the highest priority for protection.

The management, protection, research and conservation of primates in Vietnam are regulated and guided in accordance with the following laws and legal documents:

1. Law on Forestry (2017).
2. Law on Biodiversity (2008).
3. Decree No. 06/2019/ND-CP dated January 22, 2019 on management of endangered, precious and rare species of forest fauna and flora and observation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.
4. Decree No. 160/2013/ND-CP dated November 12, 2013, on criteria to determine species and regimes for managing species on the list of endangered, precious and rare species for prioritized protection.
5. Decree No. 64/2019/ND-CP amending Article 7 of Decree No. 160/2013/ND-CP dated November 12, 2013 on criteria for identifying species and management regimes for species on the list of endangered, precious and rare species prioritized for protection.

6. Decision No. 1250/QD-TTg dated July 31st, 2013 by the Prime Minister approving the National Strategy on Biodiversity to 2020, with a Vision to 2030.
7. Decision No. 218/QD/TTg dated February 2nd, 2014 of the Prime Minister approving the Strategy on management of special-use forest, marine nature reserves, inland and wetland protected areas of Vietnam to 2020, with a Vision to 2030.
8. Decision No. 45/QD-TTg issued on January 8th, 2014 of the Prime Minister approving the Master Plan on biodiversity conservation in the whole country to 2020, with a Vision to 2030.
9. Decision No. 628/QD-TTg issued on May 10th, 2017 of the Prime Minister approving the Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030.

In particular, over the years primates have always been prioritized for conservation in Vietnam. Management, research, and conservation of primates in Vietnam has resulted in several important achievements including: i) No primate species in Vietnam are extinct; ii) Numerous national parks and nature reserves have been established throughout the country and are contributing to foster and protect primates; iii) Successful rescue and care of numerous endangered, rare and precious primate species; iv) Several critically endangered primate species, such as the Tonkin snub-nosed Monkey (*Rhinopithecus avunculus*), Cat Ba Langur (*Trachypithecus poliocephalus*), Delacour's Langur (*Trachypithecus delacouri*), Grey-shanked Douc (*Pygathrix cinerea*) and Cao Vit gibbon (*Nomascus nasutus*) are being conserved and developed; v) Many primate conservation and research programs have been conducted effectively; and vi) The research and conservation ability of Vietnamese staff has been improved and enhanced to partly adapt to the real requirement.

1.3 The Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030

To emphasize the conservation needs and priorities of endangered species, the Government of Vietnam promulgated Decree No. 160/2013/ND-CP dated November 12th, 2013 of the Prime Minister on criteria for identifying species and management regimes for species on the list of endangered, rare and precious species prioritized for protection. Nineteen primate species have been included on the List of endangered, rare and precious species prioritized for protection in Decree 160/2013/ND-CP (amended, supplemented under Decree No. 64/2019/ND-CP). Section D, Clause 1, Article 10 of the Decree 160/2013/ND-CP states: "Each species prioritized for protection is conserved through separate conservation programs and assigned to responsible agencies for the conservation of these species". In addition, the Prime Minister promulgated Decision No. 218/QD-TTg dated February 2nd, 2014, approving the "Strategy for management of special-use forests, marine protected areas, inland protected areas in Vietnam to 2020, with a Vision to 2030 in which a program "Development of an urgent action plan to conserve the endangered, rare, precious species" is assigned to the Ministry of Agriculture and Rural Development (MARD) to lead the plan's development in collaboration with the Ministry of Natural Resources and Environment (MONRE).

In 2006, to implement the task as mentioned above, MARD assigned the Vietnam Administration of Forestry (VNFOREST) to develop an "**Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030**" for submission to the Prime Minister for approval. The development and finalization of this Action Plan was implemented with significant support from the GIZ-Bio project as well as with the participation and contribution of national and international primate experts. The content of the Action Plan was developed following consultations with relevant agencies and organizations such as: MONRE, the Ministry of Justice, management boards of national parks and nature reserves, and numerous national and international primate conservationists. The Action Plan was approved by the Prime Minister in **Decision No. 268/QD-TTg dated May 10th, 2017**.

The main objective of the "Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030" (hereby referred as the Vietnam Primate Conservation Plan) is stated in Article 1 of Decision No. 628/QD-TTg with the general target to: "Ensure all primate species in Vietnam that are distributed inside and outside national parks and nature reserves are conserved and sustainably

developed through the effective protection of populations and their habitats under government management, participation and support from the society” with 5 specific objectives, 8 main tasks and 38 solutions, as well as funding sources for implementation and 8 priority projects approved. Task and functional implementation, and the deployment of relevant ministries, authorities, organizations and individuals are detailed in Clause V, Article 1 of Decision No. 628/QĐ-TTg. Thus, the Vietnam Primate Conservation Plan has been institutionalized and authorised by the Prime Minister’s Decision No. 628/QĐ-TTg. The Action Plan provides specific direction and instruction for primate conservation in Vietnam, detailing actions and priority projects for sponsors and conservation organizations.

2. SCOPE OF THE REPORT

This report provides information on a preliminary review and evaluation of the performance and implementation of the tasks and conservation activities in Vietnam under Decision No. 628/QĐ-TTg effective from May 10th, 2017. Information presented in this report was gathered from primate conservation programs, projects and activities in Vietnam implemented during the period July 2017 to July 2020.

This report provides information to support relevant agencies, organizations and individuals in understanding implementation, its challenges, difficulties and proposed solutions for primate conservation activities in Vietnam under Decision No. 628/QĐ-TTg.

3. METHODOLOGY

3.1 Literature Review

Information and data are aggregated and updated from two sources available at the Department of Protected Area Management (DOPAM), including: i) Reports of special-use and protection forest management boards for national conferences on the management of special-use forests and protection forests in the period 2018-2020; and ii) information on conservation activities contained in investigation and research reports by conservation agencies and organizations in Vietnam.

Results and other relevant information are referenced and cited from project reports, technical reports, and scientific reports undertaken by projects, institutions and individuals.

Information on primate conservation activities and projects in the period 2017-2020 published and stored on the website has also been collected, reviewed and synthesized for this report.

3.2 Expert consultations

The development and finalisation of this report has been facilitated by the two authors of this report as the key experts in consultation with the relevant stakeholders in Vietnam.

In 2019 the PAP review focussed on gathering inputs and data for the assessment from numerous Vietnamese and international primate research institutes, agencies, conservation organizations, Forest Protection Departments, management boards of national parks, and nature reserves.

A consultation workshop aimed at presenting the assessment findings, as well as gathering further inputs from relevant stakeholders was planned for December 2019. However, the workshop was postponed to due to the Covid-19 situation. As an alternative option, during the period of February to April 2020, the report was sent to leading primate organisations and experts such as WWF Vietnam, FFI Vietnam, Mr. Tilo Nadler, Dr. Ha Thang Long (Frankfurt Zoological Society), Mr. Nguyen Manh Ha (CCD), Mr. Le Khac Quyet, Mr. Trinh Dinh Hoang (CCD) for an in-depth review. According to the international and national primate experts, the report was technically adequate. Nevertheless, regarding achievements, the report could further be enriched to captured the full picture or results of primate conservation efforts. It was also concluded that some information and data needed further verification and grouping.

A follow up review round from October to December 2020 included further data collection and

information verification. In a final consultation workshop in December 2020 last the revised report which reflected comments from the experts in the first round was presented and discussed. The workshop was attended by 40 participants from DOPAM, PAs, (I)NGO and conservationists. Comments and feedback are reflected in the final report.

3.3 Field surveys

Due to limits of time and travel, field surveys were conducted only in a small number of special-use forests. Information from field surveys provided knowledge on the application and implementation of the Action Plan for Primate Conservation in Vietnam at the base/local level.

Due to time constraints, field surveys were conducted in three special-use forests to learn about local primate conservation and the implementation of the Primate Conservation Action Plan, including at Xuan Lien Nature Reserve, Ben En National Park (Thanh Hoa) and Pu Mat National Park (Nghe An). The results of the field trips, although not able to reflect the full picture of primate conservation in national parks and nature reserves in Vietnam, do provide some preliminary information on the situation, as well as on the conservation of local endangered, precious and rare primate species and the challenges facing national parks and nature reserves in implementing Decision No. 628 / QD-TTg.

4. RESULTS AND DISCUSSION

4.1 General review

As approved by the Prime Minister according to Decision No. 628/QD-TTg, the Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030 took effect from 10 May 2017. Article 3 of the Decision 628/QD-TTg states: "The Minister of Agriculture and Rural Development, Ministers, Heads of ministerial-level agencies, Heads of Government agencies, Chairpersons of Provincial and City People's Committees, and Heads of relevant agencies are responsible for the implementation of this Decision". Thus, the implementation of the Conservation Action Plan of Primates in Vietnam is the responsibility of various ministries, departments, agencies, organizations and individuals.

In fact, the Conservation Action Plan of Primates in Vietnam has been partially implemented and does not involve the effective participation of relevant stakeholders due to numerous issues, limitations and challenges in capacity, funding and coordination in primate conservation in Vietnam.

4.2 Specific Objectives

During the period 2017-2020, primate conservation activities in Vietnam were implemented to respond to five specific objectives of the Conservation Action Plan for Primates in Vietnam. However, evaluation shows that achievement of these objectives in recent years is at a low and medium level (Table 1). Activities in the next period need to be strengthened to ensure good results are achieved for all 5 objectives.

Table 1. Progress and implementation level for specific objectives in the period of 2017-2020.

No.	Specific objectives	Implement Progress	Implement level
1	Complete the legal framework to ensure primates and their habitats will be conserved and sustainably developed.	In progress	Medium
2	Strengthen the effectiveness of law enforcement; prevent illegal hunting, wildlife trading to 2025, reduce primate hunting activity by 70%; build at least 3 standard rescue centres to perform rescues, re-introduce primates according to procedures.	In progress	Low

3	Strengthen scientific research by 2025, complete 01 database of primate species in Vietnam to serve management and conservation.	In progress	Low
4	By 2025, 70% of staff working on primate conservation will be trained, increase capacity, increase awareness and primate conservation activities to all government agencies, social organizations and individuals, paying special attention to women's roles and gender equality.	In progress	Low
5	Strengthen collaboration in primate conservation in Vietnam to attract international resources and experience.	In progress	Medium

4.3 Tasks and Solutions

Eight main tasks outlined in the Conservation Action Plan for Primates in Vietnam have been implemented in the period of 2017-2020. Only Task 1: "Review and complete a legal framework on primate conservation" has been implemented to a high level; the other tasks are low (4 tasks), medium (1) or not implemented (1) (Table 2). The progress and implementation level of these tasks and solutions are outlined and discussed in detail below.

Table 2. Progress and implementation level of tasks in period 2017-2020.

No.	Task	Implement Progress	Implement level
1	Review and strengthen the legislative framework for primate conservation	Partly	High
2	Improve law enforcement for protection of primate populations and their habitats	In progress	Medium
3	Integrate and prioritize primate conservation activities in the management plans of protected areas within the distribution of endangered, rare, and precious primates	In progress	Low
4	Raising awareness and activities of governmental agencies and social organizations on primate conservation by enhancing conservation education programs	In progress	Low
5	Conduct scientific research programs to support and improve primate conservation planning in Vietnam	In progress	Low
6	Complete national standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)	In progress	Low
7	Develop protocols for responsible ecotourism programs for endangered, rare and precious primates	Not implemented	None
8	Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade.	In progress	Medium

4.3.1 Task 1: Review and strengthen the legislative framework for primate conservation

Primates in Vietnam have been considered in relevant legal documents on wildlife protection. In particular, the number of species and priority for protection have been considered and updated on the list of Decree No. 64/2019/ND-CP and Appendices IB and IIB of Decree No. 06/2019/ND-CP.

In these two Decrees, common names, scientific names and the conservation priority ranking of primates in Vietnam have been added, updated and rated (Appendix 1).

The conservation status of primates in Vietnam has been updated by IUCN in the 2020 IUCN Red List of Threatened Species 2020 (IUCN, 2020).

Since 2007, Vietnam's Red Data Book has not been updated on the conservation status of fauna and flora. This is a program managed by government agencies. Therefore, there is no update on the taxonomic and conservation status of primates in Vietnam's Red Data Book. This task will be a priority in the upcoming time.

4.3.2 Task 2: Improve law enforcement for the protection of primate populations and their habitats

As well as a priority for wildlife protection, primates are a target group in the programs and activities of law enforcement agencies and organizations on animal protection.

Law enforcement actions have been actively implemented by relevant agencies and organizations in some areas with distributions of primates in recent years. For instance, confiscation and management of shotguns at Kon Ka Kinh National Park, Pu Mat National Park, Kim Bang forest (Ha Nam province), Mu Cang Chai Species/Habitat Conservation Area (Yen Bai province), Cao-Ta-Tung forest (Quan Ba district, Ha Giang province). The trap removal programs in many national parks and nature reserves removed at least 5,768 traps in the period 2017-2019: Kon Ka Kinh National Park (709 traps), Pu Mat National Park (4,984 traps), and Kim Bang forest (175 traps).

At present, there are at least 30 special-use forests and other forests with at least 505 trained staff applying the Spatial Monitoring and Report Tool (SMART) software in forest management, protection and biodiversity monitoring, including primate species. These include Khau Ca (Ha Giang), Trung Khanh (Cao Bang), Pu Mat and Kon Ka Kinh National Parks. Many technical staff and forest rangers of national park and nature reserve management boards and project staff have been trained to use SMART software (Trịnh Đình Hoàng, 2020).

4.3.3 Task 3: Integrate and prioritize primate conservation activities in the management plans of protected areas with distributions of endangered, rare, and precious primates

According to data from DOPAM-VNFOREST, 11 special-use forests have received funding from the state budget for primate conservation projects with a total budget of over VND 13 billion (equivalent to over USD 580,000) (Table 4). There is no investment from the state budget for primate conservation activities in protection forests.

In addition, there are many primate conservation research programs and projects in Vietnam that have been implemented in the period 2017-2020 by national and international agencies and organizations with funding from domestic and international sources.

4.3.4 Task 4: Raising awareness and activities of governmental agencies and social organizations on primate conservation by enhancing conservation education programs

In 2017-2020, awareness raising activities on primate conservation have been implemented and promoted by a number of agencies, organizations and projects on both the mass media and at local levels. However, the implementation level of this task is at a low level.

The awareness-raising activities are often part of or integrated within the framework of biodiversity conservation projects that have been implemented in national parks and nature reserves. During the period 2017-2020, only a handful of conservation awareness programs and projects focused on endangered primate species:

- Tonkin snub-nosed monkey in Ha Giang Province, implemented by Denver Zoo, New Nature Foundation (USA) and FFI Vietnam.

- Cao Vit Gibbon in Cao Bang Province implemented by FFI Vietnam.
- Delacour's Langur in Kim Bang forest (Ha Nam), and Van Long Nature Reserve implemented by FFI Vietnam and FZS.
- Grey-shanked Douc in Kon Ka Kinh National Park implemented by FZS and Kon Ka Kinh National Park's management board.
- Red-shanked Douc in Son Tra Nature Reserve (Da Nang), implemented by GreenViet and DLF.
- Cat Ba langur in Cat Ba National Park, implemented by Leipzig Zoo
- Grey-shanked Douc in Kon Plong (Kon Tum province), implemented by FZS and FFI.

4.3.5 Task 5: Conduct scientific research programs to support and improve primate conservation planning in Vietnam

In 2017-2020, primate research and conservation activities were mainly carried out by a number of research institutes and universities with the cooperation and support of foundations, organizations and international conservation specialists. Many reports and scientific publications have been published during this period. However, only one training program on methods and skills for primate conservation has been maintained and implemented during this time – the Frankfurt Zoological Society-Vietnam Program and the Da Nang Pedagogical University (1 course/20-25 students/year). Small scholarships (for example, Tilo Nadler Scholarship) are also awarded, supporting primate conservation and research projects for students and young researchers. These are contributing to improving human resources for primate conservation in Vietnam (Appendix 2).

4.3.6 Task 6: Complete national standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)

In the 2017-2020 period, there was only one technical document: "A handbook on the husbandry of some primates" developed by the CITES Management Authority of Vietnam (Bui Hong Thuy and Dang Huy Phuong, 2018). However, this is only a reference document, so it is not required and not widely disseminated. Although rescue centres, zoos, and ranches currently have experience and internal procedures for primate care and management, information has not been assembled to develop guidelines for the rescue and post-rescue management of primates (care, transportation, captivity, relocation and management of imported alien species).

In addition, at the Endangered Primate Rescue Center of Cuc Phuong National Park and the Center for Rescue and Conservation of Species in Cat Tien National Park have developed rescuing procedure and captive breeding of primates to applied at their centers.

4.3.7 Task 7: Develop protocols for responsible ecotourism programs for endangered, rare and precious primates

In 2017-2020, no agencies or organization has implemented any specific activities related to this task.

4.3.8 Task 8: Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and stop primate trade

Cooperation and coordination activities between national and international stakeholders have been carried out by competent agencies and organizations. Currently, there are inter-provincial conservation programs and agreements among the provinces in the distribution zones of a number of primates, such as: conservation of Red-shanked douc and Northern Yellow-cheeked gibbon in 3 provinces: Quang Tri, Thua Thien-Hue and Quang Nam. In particular, trans-border conservation cooperation has been helping to protect the Cao vit gibbon population in Trung Khanh (Cao Bang, Vietnam) and Jingxi (Guangxi, China).

Collaboration and exchanges between national and international scientists in primate research are continuing and developing. During the period 2017-2020, several technical reports and scientific works have been published nationally and internationally.

The Steering Committee for implementing the Conservation Action Plan of Primates in Vietnam was established by a decision of the Minister of Agriculture and Rural Development. However, the operational regulations of this Steering Committee have not yet developed. In addition, the lack of a Vietnam Primate Working Group or Vietnam Primate Society are a major limitation to implementing the Action Plan.

4.4 Budget for implementation

Decision No. 628/QĐ-TTg stated: “The budget for implementation of the Plan is prepared and allocated from the state budget for the Program for Sustainable Forestry Development and allocated to ministries, agencies, and provinces in accordance with their current delegation authority; income from forest environmental services and support from organizations, individuals; other legal resources”. According to Decision 886/QĐ-TTg dated June 16th, 2017 by the Prime Minister approving the Targeted Program on Sustainable Forestry Development in the period 2016-2020, “forest protection and nature conservation” is the main task of this Program and “Investing in forest protection and biodiversity conservation of forest ecosystems, especially the special-use forest system; conservation of elephants and several endangered, rare fauna and flora at the edge of extinction” is one of the main investments. Thus, government agencies and organizations can formulate and implement primate conservation projects with funding from the government budget allocated through this program. However, data are not available to assess whether a certain number of projects are being implemented with funding from this source.

According to the available data, the government budget has provided 13 projects with a total of VND 16,226,700,000 (USD 700,000) including projects funded by both VNFOREST and Dong Nai provincial-FPD (Table 4).

In addition, many primate conservation projects have been carried out by national and international agencies and organizations with different funding sources; however, there is no data on the funding sources of these projects.

Table 3. Summary of progress and level of implementation on tasks and solutions in the period 2017-2020.

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
1	Review and strengthen the legislative framework for primate conservation	Complete	High		
1.1	To update the national red-list of primates in Vietnam, including a review of taxonomy as well as providing recommendations for protection of primates for the Vietnam Red Data Book and IUCN Red List of Threatened Species	In progress	Medium	- Update rating in IUCN Red List (2020)	- IUCN primate experts (Vietnam) - IUCN
1.2	To review the legal status of all primate taxa of Vietnam and provide recommendations for strengthening protection	Complete	High	- Update list of primates to the list of endangered, rare and precious primates prioritized for protection in Decree 64/2019/ ND-CP - List of primate species in Vietnam in Appendix IB and IIB of Decree No. 06/2019/ND-CP	- Vietnam Association of Environment- Ministry of Nature Resources and Environment - VAF-MARD - Saving Species Project
2	Improve law enforcement for protection of primate populations and their habitats	In progress	Medium		
2.1	To create and support inter-agency gun control and confiscation in areas surrounding critically endangered primate populations	In progress	Low	- Mechanism for collaboration between management boards of national parks, nature reserves and local authorities	- Management boards of Ben En, Pu Mat, Kon Ka Kinh National Parks, Xuan Lien Nature Reserve, etc. - International Border Army, Police, etc.

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
2.2	Enhance existing programs to eliminate trapping throughout Vietnam's protected area system.	In progress	Medium	- Trap removal program in several national parks and nature reserves	- Management boards of Mu Cang Chai, Sao La (Thua Thien-Hue), Sao La (Quang Nam), Xuan Lien, Kon Ka Kinh, Pu Mat, etc. - WWF Vietnam - FFI Vietnam - Green Annamites project - Save Vietnam's Wildlife (SVW)
2.3	Apply the Spatial Monitoring and Report Tool (SMART) to PAs where there are endangered primates.	In progress	Medium	- It is being applied in many national parks, nature reserves and primate conservation project sites	- Management boards of several national parks, nature reserves - FFI Vietnam
3	Integrate primate conservation activities in the management plans of protected areas with distributions of endangered, rare, and precious primates	In progress	Low		
3.1	To develop guidelines on how to integrate primate conservation activities into management planning of PAs that include the distribution of endangered, rare, and precious primates	Not implemented	None		
3.2	To train PA management staff on integrating primate conservation into PA management planning	Not implemented	None		

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
3.3	Protected areas with endangered, rare, and precious primate populations will allocate annual funds to protect, study, and monitor primates	In progress	Low	- Just a few (11) national parks and nature reserves have been funded for primate research and conservation activities	- Provincial People's Committees of Gia Lai, Dak Lak, Kon Tum, Ha Tinh, Nghe An, Thanh Hoa, Kien Gian, etc. - Management boards of national parks and nature reserves of Ben En, Xuan Lien, Pu Hu, Pu Luong, Pu Huong, Vu Quan, Chu Yang Sin, Chu Mom Ray, Dong Nai, Phu Quoc, etc.
3.4	Protected areas with key primate populations will act to reduce deforestation and forest degradation.	In progress	Low	- Integrate activities for preventing and handling violations of forest protection	- Management boards of national parks and nature reserves of: Yok Don, Sao La (Thua Thien-Hue), Khau Ca, etc.
3.5	Protected areas with key primate populations will conduct forest protection, restoration, and reforestation to enhance forest quality and expand habitats	In progress	Low	- There is only one program promoting reforestation: Cao Vit Species/ Habitat	- FFI Vietnam - PRCF Vietnam
3.6	Development planning within protected areas will take the biological functions of resident primate populations into consideration to avoid negative impacts through habitat loss or disturbance	In progress	Low		
4	Raising awareness of governmental agencies and social organizations on primate conservation via conservation educational programs	In progress	Low		

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
4.1	Raising awareness of legal agencies to ensure arrests and prosecutions of wildlife crimes targeting primates	In progress	Medium	<ul style="list-style-type: none"> - Integrate programs of application and enforcement of legal regulations on handling violations with the regulations on the protection of endangered fauna and flora 	<ul style="list-style-type: none"> - Management boards of national parks and nature reserves
4.2	To integrate training on primate conservation into the national strategy on PA capacity building	In progress	Medium	<ul style="list-style-type: none"> - There is integration of content during implementation of the proposal on strengthening national park and nature reserve management capacity 	<ul style="list-style-type: none"> - Management boards of Kon Ka Kinh National Park, Cao Vit Gibbon Special/Habitat Protected Area
4.3	To improve conservation educational programs for local communities in PAs, with attention to the role of women and the importance of gender equality	In progress	Medium	<ul style="list-style-type: none"> - Primate conservation awareness facilities and materials have been developed and distributed to local communities - The proportion of women participating in the conservation activities has increased 	<ul style="list-style-type: none"> - FFI Vietnam - Denver Zoo - FZS
4.4	To launch a national level awareness campaign to reduce consumption of primates, especially in urban areas	In progress	Low	<ul style="list-style-type: none"> - There is only one advertising and communications campaign on primate conservation 	<ul style="list-style-type: none"> - FFI Vietnam

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
4.5	Identify and develop training programs and opportunities for young students on primate conservation through provision of scholarships granted by governments, organizations, and individuals; encourage and create inclusive conditions for women to participate in training	In progress	Low	<ul style="list-style-type: none"> - Only one annual training course on primate research and conservation - Several students and young staff have received scholarships and support for their primate research and studies 	<ul style="list-style-type: none"> - FZS - Da Nang Pedagogical University - FFI
4.6	To integrate primate conservation modules into training and academic programs at universities and colleges specialized in biodiversity conservation to enhance the skill sets of practitioners	In progress	Low	<ul style="list-style-type: none"> - An integrated lecture program on primate conservation at Biology-Environment Faculty - Da Nang Pedagogical University 	<ul style="list-style-type: none"> - Da Nang Pedagogical University - FZS
4.7	To integrate primate and biodiversity conservation modules into primary education to enhance the understanding and appreciation of biodiversity conservation among the wider society	In progress	Low	<ul style="list-style-type: none"> - Extra-curricular activities on primate conservation in several local schools 	<ul style="list-style-type: none"> - Denver Zoo - FZS - Management boards of national parks and nature reserves: Kon Ka Kinh, Khau Ca, Cao Vit, etc.
4.8	To coordinate with publicly accessible mass media to build communication programs and advertisements with the aim of raising awareness about primate and nature conservation in Vietnam	In progress	Low	<ul style="list-style-type: none"> - Several primate conservation programs have been developed and disseminated 	<ul style="list-style-type: none"> - FZS - FFI Vietnam - VTV2, VTV8
5	Conduct scientific research programs to support and improve primate conservation planning in Vietnam	In progress	Low		

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
5.1	To build a database of Vietnam's primates including information on population sizes and distribution of each species (with MARD as the responsible agency in coordination with MONRE and the Vietnam Primate Society)	In progress	Low	- Project: Investigation, estimation on the distribution status of primates in Vietnam	- VAF
5.2	To develop and implement species-specific action plans including population and habitat viability assessments (PHVAs) for each critically endangered, endemic primate species, to be completed by 2020; and PHVAs for each critically endangered, non-endemic species, to be completed by 2025	In progress	Low	- There are a few PVA reports on the Tonkin Snub-nosed Monkey, Cao Vit Gibbon, Western Black-crested Gibbon, Cat Ba Langur, and the Indochinese Silvered Langur	- FFI Vietnam - Southern Institute of Ecology (SIE)
5.3	To assess PA coverage in relation to current and future primate distributions	In progress	Low	- Results of forest monitoring of national parks and nature reserves	- VAF - Management boards of national parks and nature reserves
5.4	To complete species distribution modelling for Vietnam's primates before 2020 to determine and predict the distribution of species in the future, particularly in the context and impact of climate change	In progress	Low	- Distribution modelling of Red-shanked Douc, Black-shanked Douc, Northern Yellow-cheeked Gibbon, Southern White-cheeked Gibbon, Southern Yellow-cheeked Gibbon	- VNUF - Southern Institute of Ecology (SIE)

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
5.5	To conduct patrols, assessments and proposals for conservation of rare and precious endangered primate populations distributed in natural forests outside of the SUF system	In progress	Medium	<ul style="list-style-type: none"> - Tonkin Snub-nosed Monkey in Quan Ba (Ha Giang) - Delacour's Langur in Kim Bang forest (Ha Nam) - Grey-shanked Douc in Kon Plong district (Kon Tum), Hon Do (Quang Nam), etc. - Red-shanked Douc in Ben Hai protection forest (Quang Tri) - Black-shanked Douc in Chua Chan mountainous area (Dong Nai) - Indochinese Gray Langur in Quan Son (Thanh Hoa) 	<ul style="list-style-type: none"> - FFI Vietnam - GreenViet - VNUF - Project BCC-GEF - Provincial People's Committees of Ha Nam, Kon Tum, Dong Nai. - CCD
6	Complete national standardized guidance practices on rescue and post-rescue management of primate individuals (care, transportation, housing, exotic species and translocation)	In progress	Low		
6.1	To develop documentation to guide all actors engaged in rescuing, caring for, housing, and trans-locating primates	In progress	Low	- A handbook on husbandry of some primates	- CITES Vietnam

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
6.2	To train and build capacity for actors, including rescue centre staff, environmental police, border guards, rangers, and customs agents to be appropriately trained to rescue, care for, house, and translocate primates	In progress	Low	- A few technical staff have been trained on methods and skills in primate rescue and care	- WAR - National parks: Chu Mom Ray, Pu Mat
6.3	To assess and control macaque farming operations to ensure no impacts or demands from this activity extend to wild macaque populations	In progress	Low		
6.4	To assess and propose activities for managing primates released outside their historic range	Not implemented	None		
6.5	To develop and implement emergency management plans for small, critically endangered populations (less than 500 individuals) and actions for mitigating risk (diseases and disasters)	Not implemented	None		
7	Develop guidelines on responsible ecotourism programs for endangered, rare and precious primates	Not implemented	None		
7.1	To assess tourism activities related to primate species and develop best practices and communication strategies for each species	Not implemented	None		
7.2	To manage all primate viewing sites to ensure that conservation of the species is the top priority with mandatory equitable revenue sharing to local livelihoods, and protected area management	Not implemented	None		

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
7.3	To prevent tourism activities involving risk of zoonotic diseases or supporting exhibition of non-native primate taxa	Not implemented	None		
8	Coordinate all actors at local, national, and international levels to enhance cooperation, primate conservation outcomes, and prevent primate trade	In progress	Medium		
8.1	To establish a government-level Steering Committee to direct and guide administrative implementation for the Conservation Action Plan for Primates in Vietnam	Complete	High	- Steering Committee has been established but no activity in fact	- MARD
8.2	To establish a national level Primate Technical Working Group to support implementation of the Conservation Action Plan for Primates in Vietnam	In progress	Low	- Submitted a proposal to request for approval on establishment of this Working Group to the Vietnam Administration of Forestry	- Group of primatologists from Vietnam
8.3	To facilitate the Vietnamese Primatological Society (VPS) to become an important organization in research and conservation of primates in Vietnam	Not implemented	None		
8.4	To develop regional and international cooperation programs and projects to combat illegal primate trafficking	In progress	Low	- Integrate into the contents and activities of several international wildlife trade prevention projects	- CTIES Vietnam - Saving Species Project - WWF Vietnam

No.	Task and Solutions	Implementation progress	Implementation level	Achievements	Implementing agencies
8.5	To develop transboundary projects to protect key primate populations that cross provincial or national borders	In progress	Medium	<ul style="list-style-type: none"> - Western Black- crested Gibbon in Yen Bai and Son La provinces - Eastern Black- crested Gibbon in Vietnam and China - Northern white- cheeked Gibbon in Thanh Hoa and Nghe An provinces - Red-shanked Douc and Northern yellow- cheeked Gibbon in Quang Tri, Quang Nam and Thua Thien-Hue provinces 	<ul style="list-style-type: none"> - FFI Vietnam - CCD
8.6	To cooperate and collaborate with international partners such as international NGO's and research institutions to further the implementation of this action plan	In progress	High	<ul style="list-style-type: none"> - Several organizations and individuals who are participating in primate research and conservation in Vietnam 	<ul style="list-style-type: none"> - FFI - WWF - PRCF - Denver Zoo - Primate Centre – Germany - Museum of Historical Nature - USA - Colorado University - USA - Leigzig Zoo - FZS

Table 4. Primate conservation projects funded by the state budget during 2017-2020.

No.	Project name	Duration	Project budget (VND)	Project budget (VND)
1	Survey and assess the distribution status of primates in Vietnam	2018-2020	2,620,000,000	Vietnam Administration of Forestry
2	Survey and assess status and conservation of macaques	2019-2021	2,495,000,000	Ben En National Park
3	Survey and assess the status, distribution and conservation of macaques (<i>Macaca</i> spp.)	2019-2021	2,496,000,000	Pu Luong Nature Reserve
4	Survey and assess the status, distribution and conservation of macaques (<i>Macaca</i> spp.)	2019	450,000,000	Pu Huong Nature Reserve
5	Survey and assess the status and conservation of primates	2019-2021	2,490,000,000	Pu Hu Nature Reserve
6	Survey and assess the status and conservation of lorises (<i>Nycticebus</i> spp.)	2019-2021	2,495,700,000	Xuan Lien Nature Reserve
7	Survey on primates at the edge of extinction and propose conservation plans	2018-2019	720,000,000	Vu Quang National Park
8	Census surveys on primate populations	2018	65,000,000	Chu Yan Sin National Park
9	Primate monitoring	2019	225,000,000	Chu Mom Ray National Park
10	Monitoring Black-shanked Douc population	2018	155,000,000	Cat Tien National Park
11	Monitoring Silvered Langur population	2019	100,000,000	
12	Survey and assess status of Black-shanked Douc	2019-2020	925,000,000	Dong Nai Nature and Culture Reserve
13	Study on the current status of some biological and ecological characteristics of primates and propose conservation solutions	2018-2019	990,000,000	Phu Quoc National Park
Total			16,226,700,000	

4.5 Implementation by relevant stakeholders

Decision No. 628/QĐ-TTg also outlines the functions and responsibilities of relevant ministries, agencies, organizations and individuals in the implementation of the Conservation Action Plan of Primates in Vietnam. In general, participation in the deployment and implementation of the Plan by relevant ministries, agencies, organizations and individuals in 2017-2020 has been low or there has been a lack of information for evaluation (Table 5).

Due to the lack of information, we could not fully evaluate the implementation of Decision No. 628/QĐ-TTg by ministries, agencies, organizations or individuals.

A Steering Committee has been established by Decision No. 3394/QĐ-BNN-TCLN dated August 16th, 2017 by the Minister of Agriculture and Rural Development with 14 steering committee members who hold concurrently (Appendix 3). However, in fact, this Steering Committee has no working regulations or operation under Decision No. 628/QĐ-TTg.

As per the regulations, the People's Committees of provinces and cities have issued the notice of implementation of Decision No. 628 / QĐ-TTg. These notices are important documents guiding and directing the development and implementation of primate conservation activities for provincial and city agencies (Appendix 4). According to the available data, at least two provinces – Thanh Hoa and Dong Nai – have funded primate conservation projects as activities to implement Decision No. 628 / QĐ-TTg.

The management boards of national parks and nature reserves play important roles in the management and conservation of primates in their protected areas. However, most of these management boards still have limited capacity and financial resources to be able to undertake specialized activities in primate research and conservation. Some protected area's management boards currently have primate conservation projects funded by the state budget. However, to carry out project activities, they have to hire expertise or cooperate with consulting firms and organizations. Many national parks and nature reserves have distributions of primates prioritized for conservation but currently lack on-site conservation activities. Despite this, many of these management boards have not recognized the importance of Decision No. 628 / QĐ-TTg and the opportunities for primate conservation it offers in their protected areas.

Although primates in Vietnam are good subjects for studies on conservation biology of endangered species, it seems that Vietnamese research and training institutions and scientists have not given priority to Vietnam's primates. Currently, only a few research and national training units and scientists have conducted research or conservation activities on primates in the 2017-2020 period. These entities and individuals do not seem to know or care about Decision No. 628 / QĐ-TTg.

Table 5. Functions and responsibilities of relevant ministries, agencies, organizations and individuals in the implementation of Decision No. 628/QĐ-TTg.

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
1	Ministry of Agriculture and Rural Development (MARD)	<ul style="list-style-type: none"> - Supporting the Prime Minister to chair, coordinate and implement the Plan - Chairing and coordinating with other ministries, agencies and localities for implementation of the Plan - Chairing and coordinating with relevant ministries and agencies to give guidelines on how to develop, conduct appraisals and approve primate conservation projects to localities and local units - Following up on tasks and assigned priority programs, projects and plans 	In progress	Medium	<ul style="list-style-type: none"> - No information - No information - No information - The Vietnam Administration of Forestry is implementing the project: "Survey and assess status and distribution of primates in Vietnam"
		<ul style="list-style-type: none"> - Chairing and mobilizing domestic and international funds for implementation of this Plan 	In progress	Low	<ul style="list-style-type: none"> - Vietnam Administration of Forestry is acting as focal point/lead to preside and mobilize several programs and projects
		<ul style="list-style-type: none"> - Supervising implementation process, organizing preliminary and summary events of the Plan's implementation in 2025; providing periodical reports to the Prime Minister on the Plan's implementation 	In progress	Medium	<ul style="list-style-type: none"> - Conducting the review of the Plan's implementation (this report)
		<ul style="list-style-type: none"> - The Minister of MARD submits to the Prime Minister to establish the Steering Committee for implementation of the Plan by 2025. The participants, operational rules of the Committee and Coordinating Office will be decided by the Head of the Committee 	Complete	Medium	<ul style="list-style-type: none"> - The actual working and operation regulations have not been issued

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
2	Ministry of Natural Resources and Environment (MONRE)	<ul style="list-style-type: none"> - Coordinating closely with MARD, other ministries and agencies to carry out tasks under the scope, responsibilities and powers of the Ministry - Integrating this action Plan with implementation of the National Strategy on Biodiversity in 2020, with a vision to 2030, to avoid redundancy of other tasks and activities - Following up on tasks and assigned priority programs, projects and plans 			<ul style="list-style-type: none"> - No information - No information - No information
3	Ministry of Planning and Investment	<ul style="list-style-type: none"> - Allocating financing expenses for the Plan's activities - Mobilizing international funds for conservation and sustainable development of endangered, rare and precious primates in NPs and NRs 			<ul style="list-style-type: none"> - No information - No information
4	Ministry of Finance	<ul style="list-style-type: none"> - Chairing and coordinating with the Ministry of Planning and Investment, based on the availability of the state budget and the approved allocated amount by the National Congress, to allocate budget for the implementation of programs and projects for the conservation of endangered, rare, and precious primate species; developing guidelines, supervising, and monitoring the use of funds allocated from the state budget in accordance with the Law on state budget management and other legal regulations - In collaboration with the Ministry of Agriculture and Rural Development, the Ministry of Natural Resources and Environment and other ministries, and central agencies involved in developing mechanisms of financial policies to promote social mobilization, mobilization of funds rather than the state budget, to encourage organizations and individuals to invest in conservation and sustainable development of endangered, rare, and precious primates 			<ul style="list-style-type: none"> - No information

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
5	Other relevant ministries and agencies (Ministry of Science and Technology, Ministry of Education and Training, Ministry of Culture, Sports and Tourism)	- Participating in and creating favourable conditions for the implementation of this Action Plan			- No information
6	Law enforcement agencies including Customs, Police, Forest rangers, Border Guards, Market management, Procuracy and the Courts	- Coordination with VNFOREST in conducting inventories, management, and monitoring of primate specimens; strengthening law enforcement to control hunting, use, and illegal trade of primates, their body parts and products in domestic markets and at international borders			- No information

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
7	Provincial/ City People's Committees	<ul style="list-style-type: none"> - Implementing the Conservation Action Plan in localities following guidelines from MARD, other ministries, and functional agencies - Mobilizing and allocating local resources and using allocated resources from the Central Government for appropriate purposes and with high efficiency - Organizing publicity, educating about biodiversity and primate conservation; increasing patrols and law enforcement to conserve biodiversity and for primate conservation; increasing the supervision of law enforcement in nature reserves - Effectively integrating tasks and activities of this Action Plan with the provincial Plan for biodiversity conservation; strengthening inter-sectoral coordination; integrating the conservation activities of endangered and precious primates into planning for local socio-economic development 	In progress	Low	<ul style="list-style-type: none"> - Notification of Plan implementation has been issued - No information - No information - No information
8	Management boards of national parks and nature reserves	<ul style="list-style-type: none"> - Directing functional agencies to develop investment projects for publicity, supervision, and monitoring of endangered, rare, and precious primate species - Providing periodic reports on the status and implementation of the Plan to MARD to consolidate and report to the Prime Minister - Actively develop and directly implement activities of primate conservation for primates that have distributions within their areas; have adequate human resources for the conservation of endangered, rare, and precious primate species prioritized for protection - Integrate primate conservation with other management and protection activities in NPs or NRs that are home to primates 	In progress	Low	<ul style="list-style-type: none"> - No information - No information - Lacking and weakness in capacity; financial resources depend on the provincial budget allocation

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
9	Universities, colleges, and vocational training units, and institutes for scientific research	<ul style="list-style-type: none"> - Chair the development and implementation of scientific research, projects on primate conservation, and studies on solutions for minimizing unintentional use and exploitation of primate species - Actively coordinate with functional agencies of IARD to expand relations with domestic and international partners to import measures and new technologies for primate conservation in Vietnam 	In progress	Low	<ul style="list-style-type: none"> - Low quantity; lacking and weakness in capacity; funding and material facilities are lacking and weak - There are just a few international collaboration projects, such as Molecular genetic research at VNU- University of Science and VNU-CRES
10	Relevant enterprises, organizations, community and individuals	<ul style="list-style-type: none"> - Responsible for implementing laws and regulations on biodiversity conservation, including rare, precious, and endangered primates; participating, proposing and implementing programs and projects on primate conservation - Responsible for implementing targets, tasks, and activities of this Action Plan; monitoring and conducting the assessment of primate conservation activities; and publicizing to raise local awareness about responsibilities for primate conservation. 	In progress	Low	<ul style="list-style-type: none"> - No information - No information
11	Domestic and international organizations and agencies	<ul style="list-style-type: none"> - Provide favourable conditions to participate and make proposals for primate conservation activities and projects; offer financial and technical support for research and primates conservation activities in accordance with this Action Plan 	In progress	Medium	<ul style="list-style-type: none"> - National and international conservation organizations are the most active units - Depend on national and international funds

No.	Ministry, Agency, Organization	Function and Responsibilities	Implementation progress	Implementation level	Remarks
12	Vietnamese Primatological Society	<p>- Promote and enhance the scientific understanding and conservation of primates in Vietnam. Its purposes include: 1) raising awareness and improving the quality of research and conservation activities for primates in Vietnam; 2) raising capacity for research and conservation activities for primates in Vietnam; 3) acting as the focal point of programs and projects on collaborative research and conservation of primates in Vietnam; and representing the primatologist community to collect and contribute comments from experts on primate conservation in Vietnam and across the world.</p>	Not implemented		<p>- Necessary to promote the establishment of the Vietnam Primatological Society</p>

There are several organizations running active primate conservation projects and activities in the period 2017-2020, which are funded by the national and international grants listed below:

- FFI Vietnam actively implements endangered primate conservation activities in Vietnam including Tonkin Snub-nosed Monkey in Ha Giang, Delacour's Langur in Kim Bang (Ha Nam), Grey-shanked Douc in Kon Plong (Kon Tum) and Cao Vit Gibbon in Trung Khanh (Cao Bang).
- Frankfurt Zoological Society is conducting a Grey-shanked Douc conservation program in Kon Ka Kinh National Park (Gia Lai).
- Leipzig Zoo (Germany) is conducting conservation programs as the Endangered Primate Rescue Centre – Cuc Phuong National Park and Cat Ba Langur conservation project in Cat Ba National Park (Hai Phong).
- GreenViet Centre is conducting Grey-shanked Douc conservation activities in Son Tra Nature Reserve.
- WWF Vietnam is conducting primate conservation activities that integrate with conservation projects in the Annamite mountainous area.
- The Historical Natural Museum (United States of America) is collaborating with the Central Institute for Natural Resources and Environmental Studies (CRES) and CCS to study the molecular genetics of primates in Vietnam.
- The Centre for Nature Conservation and Development (CCD) is conducting surveys and studies on lorises, the Northern White-cheeked Gibbon, and Delacour's Langur.

In particular, Decision No. 628 / QD-TTg outlines the task of establishing the Vietnam Primate Society with the expectation that it will play an important role in promoting and implementing activities of the Conservation Action Plan of Primates in Vietnam. However, to date there has been no organization or Vietnamese primate specialist group to promote this task. The establishment of the Vietnam Primate Society has been identified as a major limitation to the implementation of Decision No. 628 / QD-TTg. Please note, Dr. Le Xuan Canh reported that the Vietnam Primate Branch of the Vietnam Zoological Association was approved and recognized under Decision No. 709 / STH dated December 25, 2006 of the Chairman of the Vietnam Biological Association (VBA) (a member of the Vietnam Union of Science and Technology Associations – VUSTA) (Appendix 5). However, since its accreditation, the Vietnam Primate Branch has not held a launch event and has conducted no activities related to primate conservation in Vietnam.

4.6 Species conservation of primates in Vietnam

Table 6 shows that only a handful of endangered primate species in Vietnam are receiving high attention. Effective conservation activities include: the Cat Ba Langur in Cat Ba National Park (Hai Phong); the Tonkin Snub-nosed Monkey in Ha Giang; Delacour's Langur in Van Long Nature Reserve (Ninh Binh) and Kim Bang (Ha Nam); Francois' Langur in Tuyen Quang; Gray-shanked Douc in Quang Nam and Gia Lai; and the Red-shanked Douc in Quang Tri and Son Tra Nature Reserve (Da Nang). Other primate species, if any, are conserved under smaller-scale projects or through activities integrated in biodiversity conservation projects.

Table 6. Status of species conservation of primates in Vietnam in the period 2017-2020.

No.	Common name	Conservation activities	Implement agencies
1	Pygmy Slow Loris	- Molecular genetic study - In-situ conservation	AMNH, CRES, CCD, Xuan Lien NR, Vu Quang NP, Phu Quoc NP
2	Bengal Slow Loris	- Molecular genetic study - In-situ conservation	AMNH, CRES, CCD, Xuan Lien NR, Vu Quang NP, Phu Quoc NP
3	Grey Langur	- Study on status and distribution	Vietnam National University of Forestry (VNUF)

4	Delacour's Langur	- In-situ conservation	FFI Vietnam, CCD, CRES
5	Francois' Langur	- In-situ conservation	PRCF Vietnam
6	Indochinese Silvered Langur	- No information	
7	Annamese Silvered Langur	- No information	
8	Ha Tinh Langur	- In-situ conservation	Phong Nha-Ke Bang NP, Quang Binh FPD, Vu Quang NP
9	Cat Ba Langur	- In-situ conservation	Leigzig Zoo, Cat Ba
10	Grey-shanked Douc	- In-situ conservation	FZS, GreenViet, Project BCC-GEF
11	Red-shanked Douc	- In-situ conservation	FZS, WWF, DLF, GreenViet, Project BCC-GEF, Vu Quang NP
12	Black-shanked Douc	- In-situ conservation	Cat Tien NP, Dong Nai FPD, Dong Nai Nature and Culture Reserve, Chu Yang Sin NP
13	Tonkin Snub-nosed Monkey	- In-situ conservation	FFI Vietnam, Denver Zoo, CeRED, Ha Giang FPD, Tuyen Quang FPD
14	Stump-tailed Macaque	- In-situ conservation	National Parks: Ben En, Chu Mom Ray and Phu Quoc; Nature Reserves: Pu Huong, Pu Luong and Pu Hu
15	Assamese Macaque	- In-situ conservation	National Parks: Ben En, Chu Mom Ray, Vu Quang and Phu Quoc; Nature Reserves: Pu Huong, Pu Luong and Pu Hu
16	Long-tailed Macaque	- None	
17	Con Dao Long-tailed Macaque	- None	
18	Northern Pig-tailed Macaque	- In-situ conservation	National Parks: Ben En, Chu Mom Ray and Phu Quoc; Nature Reserves: Pu Huong, Pu Luong and Pu Hu
19	Rhesus Macaque	- In-situ conservation	National Parks: Ben En, Chu Mom Ray and Phu Quoc; Nature Reserves: Pu Huong, Pu Luong and Pu Hu
20	Northern Buff-cheeked Gibbon	- In-situ conservation	WWF, Project BCC-GEF
21	Western Black-crested Gibbon	- In-situ conservation	FFI Vietnam
22	Yellow-cheeked Gibbon	- In-situ conservation	Cat Tien NP
23	Northern white-cheeked Gibbon	- In-situ conservation	CCD
24	Cao Vit Gibbon	- In-situ conservation	FFI Vietnam
25	Southern white-cheeked Gibbon	- In-situ conservation	WWF, Project BCC-GEF

4.7 Primate conservation in priority sites in Vietnam

Table 7 shows 73 priority sites. Most conservation projects and activities have been implemented in national parks and nature reserves with distributions of endangered primates. However, there are only a few conservation projects and programs focused on primate species in specific sites:

- Cat Ba National Park (Hai Phong) conserving the last population of Cat Ba langurs
- Du Gia – Dong Van Plateau National Park (Ha Giang) and Na Hang Nature Reserve conserving Tonkin Snub-nosed Monkey populations and their habitats
- Van Long Nature Reserve (Ninh Binh) conserving the Delacour's langur population and its habitat
- Son Tra Nature Reserve (Da Nang) conserving the Red-shanked Douc
- Kon Ka Kinh National Park (Gia Lai) and forests of Kon Plong district (Kon Tum) conserving the Grey-shanked Douc

Other national parks and nature reserves are also running multi-species primate conservation projects like the project: "Sustainable Natural Resource Management Project (SNRM)" in Bidoup Nui Ba National Park funded by the Japan International Cooperation Agency (JICA) or running conservation activities integrated into biodiversity conservation projects. However, due to a lack of information, we could not fully evaluate the implementation of primate conservation in these national parks and nature reserves according to Decision No. 628/QĐ-TTg.

There are currently a number of priority conservation activities, with particular priority to some endangered primate species in areas outside of the SUF system.

In particular, there are several priority conservation activities that emphasise endangered primates distributed outside of the special-use forest system:

- Cao-Ta-Tung forest (Quan Ba) is supporting a population of Tonkin Snub-nosed Monkeys implementing by Ha Giang FPD and FFI Vietnam
- Forests in Kim Bang district (Ha Nam) is home to the second largest population of Delacour's Langurs in the world implementing by Ha Nam FPD and FFI Vietnam
- Lam Binh-Sinh Long forest (Tuyen Quang) is home to the largest population of Francois' Langurs in Vietnam implementing by Tuyen Quang FPD and PRCF Vietnam
- Tam My Tay forest (Quang Nam) is home to a population of Grey-shanked Doucs
- A forest belonging to Kon Plong (Kon Tum) is home to the largest (possibly) population of Grey-shanked Doucs in Vietnam implementing by Quang Nam FPD and GreenViet.
- Chua Chan mountain (Dong Nai) is home to Black-shanked Doucs implementing by Dong Nai FPD.
- Tuyen Hoa area (Quang Binh province) is home to Hatinh langur implementing by Quang Binh FPD and GreenViet.

These areas have undergone feasibility studies and their establishment as species/habitat conservation areas to conserve these endangered primate populations has been proposed. This also shows that the forests outside the special-use forest system have great potential and need to be investigated to provide a basis for conservation of primates in these areas.

Table 7. Implementation status of Decision No. 628/QĐ-TTg in priority sites of primate conservation in Vietnam, 2017 – 2020.

No.	National Park / Nature Reserve	Location (province/city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
National parks						
1	Ba Be	Bac Kan	10,048.00	- Tonkin Snub-nosed Monkey (habitat) - Francois' Langur	- No information	
2	Bach Ma	Thua Thien-Hue	34,380.00	- Red-shanked Douc	- Basic investigation and monitoring	- Bach Ma National Park
		Quang Nam	3,107.00	- Northern Buff-cheeked Gibbon		
3	Ben En	Thanh Hoa	14,735	- Bengal Slow Loris - Pygmy Slow Loris	- No information	
4	Bidoup-Nui Ba	Lam Dong	57,512.00	- Black-shanked Douc - Yellow-cheeked Crested Gibbon	- Basic investigation and monitoring	- Bidoup-Nui Ba National Park
5	Bu Gia Map	Binh Phuoc	25,926.00	- Bengal Slow Loris - Pygmy Slow Loris - Black-shanked Douc - Yellow-cheeked Crested Gibbon	- Basic investigation and monitoring	- Bu Gia Map National Park
6	Cat Ba	Hai Phong	15,996.36	- Cat Ba Langur	- Population monitoring	- Cat Ba National Park - Cat Ba Langur Conservation Project
		Quang Ninh	1,366.60		- No information	
7	Cat Tien	Dong Nai	51,721.6	- Annamese Silvered Langur - Black-shanked Douc - Yellow-cheeked Crested Gibbon	- Basic investigation and monitoring	- Cat Tien National Park
		Lam Dong	27,228.77			
		Binh Phuoc	4,193.00			
8	Chu Mom Ray	Kon Tum	56,237.00	- Grey-shanked Douc - Red-shanked Douc - Black-shanked Douc - Northern Buff-cheeked Gibbon	- No information	

No.	National Park / Nature Reserve	Location (province/ city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
9	Chu Yang Sin	Dak Lak	66,980.20	- Black-shanked Douc - Yellow-cheeked Crested Gibbon	- Population survey and monitoring	- Chu Yang Sin National Park
10	Con Dao	Ba Ria – Vung Tau	5,830.70	- Con Dao Long-tailed Macaque	- No information	
11	Cuc Phuong	Ninh Binh	11,440.00	- Delacour's Langur	- No information	
		Hoa Binh	5,972.50			
		Thanh Hoa	4,996.30			
12	Du Gia-Dong Van Plateau	Ha Giang	13,651.20	- Tonkin Snub-nosed Monkey	- Population survey and monitoring - Increasing conservation awareness - Scientific Research	- Ha Giang FPD - FFI Vietnam - Denver Zoo
13	Hoang Lien	Lao Cai	21,009.00	- Western Black Crested Gibbon	- No information	
		Lai Chau	7,500.00			
14	Kon Ka Kinh	Gia Lai	42,057.30	- Grey-shanked Douc - Northern Buff-cheeked Gibbon	- Population survey and monitoring - Increasing conservation awareness - Scientific Research	- FZS - Kon Ka Kinh National Park
15	Lo Go – Xa Mat	Tay Ninh	19,156.00	- Pygmy Slow Loris - Silvered Langur - Black-shanked Douc	- No information	
16	Mui Ca Mau	Ca Mau	15,262.00	- Indochinese Silvered Langur	- No information	
17	Nui Chua	Ninh Thuan	22,513.00	- Bengal Slow Loris - Pygmy Slow Loris - Black-shanked Douc	- No information	

No.	National Park / Nature Reserve	Location (province/ city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
18	Phong Nha-Ke Bang	Quang Binh	123,320.78	- Bengal Slow Loris - Pygmy Slow Loris - Red-shanked Douc - Ha Tinh Langur - Southern White-cheeked Gibbon	- Basic investigation and monitoring	- Phong Nha – Ke Bang National Park
19	Phu Quoc	Kien Giang	29,625.00	- Indochinese Silvered Langur	- No information	
20	Phuoc Binh	Ninh Thuan	19,684.00	- Black-shanked Douc	- No information	
21	Pu Mat	Nghe An	93,524.70	- Red-shanked Douc - Grey Langur - Northern White-cheeked Gibbon	- Basic investigation and monitoring	- Pu Mat National Park - SVW
22	Ta Dung	Dak Nong	20,242.39	- Black-shanked Douc - Yellow-cheeked Crested Gibbon	- No information	
23	Vu Quang	Ha Tinh	52,741.50	- Conserve habitats, elephants, tigers, Saolas and other	- Basic investigation and monitoring	- Vu Quang National Park
24	Yok Don	Dak Lak	111,125.95	- Annamese Silvered Langur - Black-shanked Douc - Yellow-cheeked Crested Gibbon	- No information	
		Dak Nong	2,728.00			
Nature Reserves/Species and Habitat Conservation Areas						
25	An Toan	Binh Dinh	22,450.00	- Grey-shanked Douc	- No information	
26	Ba Na – Nui Chua	Da Nang	27,980.60	- Red-shanked Douc	- No information	
27	Bac Huong Hoa	Quang Tri	23,486.00	- Red-shanked Douc - Southern White-cheeked Gibbon	- No information	
28	Son Tra	Da Nang	2,591.10	- Red-shanked Douc	- Population survey and monitoring - Scientific research	- GreenViet - DLF - Da Nang Pedagogy University

No.	National Park / Nature Reserve	Location (province/ city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
29	Binh Chau – Phuoc Buu	Ba Ria – Vung Tau	10,263.00	- Black-shanked Douc	- No information	
30	Cham Chu	Tuyen Quang	15,262.30	- Tonkin Snub-nosed Monkey	- No information	
31	Dak Rong	Quang Tri	37,681.00	- Red-shanked Douc - Annamese Buff-cheeked Gibbon	- No information	
32	Bac Me	Ha Giang	9,042.50	- Tonkin Snub-nosed Monkey (habitat)	- No information	
33	Hoang Lien Van Ban	Lao Cai	25,094.00	- Western Black Crested Gibbon	- No information	
34	Hon Ba	Khanh Hoa	19,285.83	- Black-shanked Douc - Yellow-cheeked Crested Gibbon	- No information	
35	Kim Hy	Bac Kan	15,715.02	- Tonkin Snub-nosed Monkey (habitat)	- No information	
36	Kon Chu Rang	Gia Lai	15,446.00	- Yellow-cheeked Crested Gibbon - Grey-shanked Douc	- No information	
37	Muong La	Son La	17,000.00	- Western Black Crested Gibbon	- No information	
38	Na Hang	Tuyen Quang	21,238.70	- Francois' Langur - Tonkin Snub-nosed Monkey	- Population monitoring	- Tuyen Quang FPD - Na Hang Nature Reserve
39	Nam Nung	Dak Nong	12,307.80	- Yellow-cheeked Crested Gibbon - Black-shanked Douc	- No information	
40	Ngoc Linh	Quang Nam	17,190.00	- Grey-shanked Douc	- No information	
41	Ngoc Linh	Kon Tum	38,008.66	- Grey-shanked Douc	- No information	
42	Nui Ong	Binh Thuan	23,834.00	- Yellow-cheeked Crested Gibbon - Black-shanked Douc	- No information	

No.	National Park / Nature Reserve	Location (province/city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
43	Phong Dien	Thua Thien-Hue	41,508.70	- Red-shanked Douc	- No information	
44	Phong Quang	Ha Giang	8,445.60	- Tonkin Snub-nosed Monkey (habitat)	- No information	
45	Pu Hoat	Nghe An	34,589.89	- Grey Langur - Northern White-cheeked Gibbon	- No information	
46	Pu Hu	Thanh Hoa	22,688.37	- Bengal Slow Loris - Pygmy Slow Loris - Grey Langur - Northern White-cheeked Gibbon	- Basic investigation	- Pu Hu Nature Reserve
47	Pu Huong	Nghe An	40,186.50	- Northern White-cheeked Gibbon	- Basic investigation	- Pu Huong Nature Reserve
48	Pu Luong	Thanh Hoa	17,171.53	- Delacour's Langur (Habitat)	- Basic investigation	- Pu Luong Nature Reserve
49	Sao la Thua Thien-Hue	Thua Thien-Hue	15,519.93	- Red-shanked Douc - Annamese Buff-cheeked Gibbon	- No information	
50	Song Thanh	Quang Nam	75,274.34	- Grey-shanked Douc	- No information	
51	Ta Kou	Binh Thuan	8,407.00	- Black-shanked Douc - Indochinese Silvered Langur	- No information	
52	Tay Yen Tu	Bac Giang	12,172.20	- Tonkin Snub-nosed Monkey (habitat)	- No information	
53	Dong Nai (Vinh Cuu) Culture	Dong Nai	64,752.00	- Yellow-cheeked Crested Gibbon - Black-shanked Douc	- No information	
54	Van Long	Ninh Binh	2,235.00	- Delacour's Langur	- Population investigation	- Van Long Nature Reserve
55	Xuan Lien	Thanh Hoa	23,815.50	- Grey Langur - Northern White-cheeked Gibbon	- Basic investigation	- Xuan Lien Nature Reserve
56	Mu Cang Chai	Yen Bai	20,108.20	- Western Black Crested Gibbon	- Population survey and monitoring	- Mu Cang Chai Nature Reserve

No.	National Park / Nature Reserve	Location (province/ city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
57	Elephant Species/ Habitat Conservation Area	Quang Nam	17,484.36	- Grey-shanked Douc	- No information	
58	Nam Dong	Thanh Hoa	646.95	- Grey Langur	- No information	
59	Nam Xuan Lac	Bac Kan	4,155.67	- Tonkin Snub-nosed Monkey (habitat)	- No information	
60	Sao La Quang Nam	Quang Nam	15,380.00	- Grey-shanked Douc	- No information	
61	Trung Khanh	Cao Bang	9,573.68	- Cao Vit Gibbon	- Population and habitat monitoring	- FFI Vietnam
62	Hon Chong	Kien Giang	964.70	- Indochinese Silvered Langur	- No information	
63	Huong Son	Hanoi	3,760.00	- Delacour's Langur	- No information	
64	Ba Den Mountain	Tay Ninh	1,761.00	- Indochinese Silvered Langur	- No information	
65	Yen Tu	Quang Ninh	2,783.00	- Tonkin Snub-nosed Monkey (habitat)	- No information	
Other sites						
66	Tung Vai forest (Quan Ba)	Ha Giang	~ 5,000	- Tonkin Snub-nosed Monkey	- Population survey and monitoring	- FFI Vietnam
67	Limestone forest Thach Hoa – Dong Hoa (Tuyen Hoa)	Quang Binh	~ 1,000	- Ha Tinh Langur	- Population survey and monitoring	- Quang Binh FPD - Volunteer group to protect the Ha Tinh Langur
68	Limestone forest of Kim Bang	Ha Nam	Unknown	- Delacour's Langur	- Population survey and monitoring	- FFI Vietnam - CCD - CRES
69	Primary forests of Kon Plong and Kon Ray districts	Kon Tum	~ 120,000	- Grey-shanked Douc - Annamese Buff-cheeked Gibbon	- Population survey and monitoring	- FFI Vietnam - GreenViet

No.	National Park / Nature Reserve	Location (province/ city)	Total Area (ha)	Endangered primates	Implementing Progress	Implementing agencies
70	Lam Binh Forest	Tuyen Quang	Unknown	- Francois' Langur	- Population survey and monitoring	- PRCF
71	Primary forest in Quang Truc (Tuy Duc district)	Dak Nong	~ 35,000	- Pygmy Slow Loris - Black-shanked Douc - Yellow-cheeked Crested Gibbon	- No information	
72	Chua Chan Mountain	Dong Nai		- Black-shanked Douc	- Population investigation	- Dong Nai FPD
73	Tam My Tay (Nui Thanh)	Quang Nam		- Grey-shanked Douc	- Population and habitat conservation	- Quang Nam FPD - GreenViet

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Decision No. 628/QĐ-TTg is an important legal document guiding the activities of the Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030. The implementation of this Action Plan is the responsibility of relevant ministries, agencies, organizations and individuals. However, in the period 2017-2020, this Plan has only been on very low level implemented and did not involve the effective participation of all stakeholders due to many reasons, limitations and challenges in capacity, funding and coordination in primate conservation in Vietnam.

The activities that have been implemented in the period 2017-2020 partially meet the objectives and the eight main tasks of the Action Plan as outlined in Decision No. 628 / QĐ-TTg. Only Task 1: "Review and complete the legal framework on primate conservation" has been implemented; the remaining tasks have been implemented at a low level (4 tasks), medium level (1) or not at all (1).

Decision No. 628/QĐ-TTg outlines the functions and responsibilities of relevant ministries, agencies, organizations and individuals in implementing the Conservation Action Plan of Primates in Vietnam. In general, participation in deployment and implementation of the Action Plan in the period 2017-2020 by relevant ministries, agencies, organizations and individuals was low or there is a lack of information for evaluation. In particular, the dissemination and reception of Decision No. 628/QĐ-TTg to local levels is extremely low. Despite the publicity of this Decision and its documented directive for implementation by provincial and city People's Committees, numerous protected area management boards of national parks and nature reserves, provincial agencies, and organizations that they did not have information or did not know about this Decision.

In the period 2017-2020, many projects on primate conservation have been implemented in Vietnam including either multi-species conservation projects or those with emphasis on specific primates. However, these projects are small in scale and have focused on a few specific primate species in specific areas; they have yet to fully meet the conservation needs of every primate species in Vietnam.

5.2 Recommendations

5.2.1 Promote the implementation of primate conservation activities

In order to continue promoting and enhancing implementation of Decision No. 628/QĐ-TTg to conserve primates in Vietnam, the following activities should be considered:

- 1) Develop and implement list of prioritized projects being approved in accordance with Decision 628/QD-TTg
- 2) Information on population status, distribution and management status of primates in Vietnam should be continually updated on documents and completed database. In particular, information on primates will need to be updated in the next versions of the Red Data Book of Vietnam.
- 3) Continue developing, implementing and enhancing the effectiveness of patrolling, protecting the populations and habitats of endemic, endangered primates, especially encouraging community-based conservation models and the application of SMART in patrolling and monitoring primates in special-use forests. Monitoring data should be shared, exchanged, and managed by competent agencies.
- 4) Develop and implement projects and activities to investigate and research endemic, endangered primate populations distributed outside of the special-use forest system.
- 5) Develop guidelines for mainstreaming and allocating budget for primate conservation with forest protection and biodiversity conservation in special-use forest and protection forest. In particular, promote the dissemination of directions to develop and implement plans for Decision No. 628/QD-TTg at local levels, including national parks, nature reserves and relevant areas outside the special-use forest system.
- 6) Endemic and critically endangered primates in Vietnam should be considered and emphasized at the same level as rare and precious species such as elephants, tigers, pangolins, and bears etc. in terms of the content of conservation awareness programs.
- 7) Prioritize the development and implementation of studies of population, habitat viability assessment and adaptive capacity to climate change of endemic and critically endangered primates in Vietnam. In addition, special attention should be paid on fully researching and evaluating the importance of endemic, endangered, rare and precious primate populations which are distributed outside the special-use forest system.
- 8) Develop and issue guidelines and standards for primate rescue, treatment, reintroduction and keeping at rescue centres, zoos, breeding centres and wildlife conservation facilities.
- 9) Promote the establishment and operation of the Vietnam Primate Working Group and Vietnam Primate Society as a connecting, coordinating and advising unit in primate conservation in Vietnam.

5.2.2 Budget for implementation

Funding from the “Sustainable Forestry Development Target Program in the period 2016-2020” will be end in 2020, so the Government, ministries, and agencies will need to allocate funds to continue the implementation of primate conservation activities according to Decision No. 628/QD-TTg in the next period 2021-2025.

Agencies, organizations and individuals should continue to attract and diversify sustainable financial sources to ensure the conservation of endemic, endangered, rare and precious primates in Vietnam.

5.2.3 Implementation

The Steering Committee of the Conservation Action Plan of Primates in Vietnam will need to issue operational and executive regulations to further accelerate implementation of effective primate conservation activities in Vietnam according to Decision No. 628/QD-TTg.

Every relevant ministry, agency, organization and individual will need to promote the dissemination and implementation of the assigned functions and tasks according to Decision No. 628/QD-TTg.

Even though Decision No. 628/QĐ-TTg has been issued and publicly disseminated and Provincial People's Committees have issued implementation plans to local units, the implementation of this decision in many local units, especially those managing and protecting primate populations, is still extremely low. Therefore, it is necessary to disseminate Decision No. 628/QĐ-TTg and guide its implementation for the agencies related to primate conservation in Vietnam.

The Vietnam Primate Working Group and the Vietnam Primate Society will need to be established and operational as soon as possible. These organizations will play important roles as professional advisory panels for primate research and conservation activities in Vietnam.

A mechanism and system for reporting, monitoring and evaluating implementation of Decision No. 628/QĐ-TTg for the concerned agencies should be created. This is “a gap” and reason for the lack of available information for this Report.

6. REFERENCES

Bui, H. T & Dang, H. P., (2018). Handbook of Primate Husbandry. CITES Vietnam. MARD.

Decision No. 1250/QĐ-TTg dated July 31st, 2013 by the Prime Minister approving the National Strategy on Biodiversity to 2020, with a Vision to 2030

Decision No. 218/QĐ-TTg dated February 2nd, 2014 of the Prime Minister approving the Strategy on management of special-use forest, marine nature reserves, inland and wetland protected areas of Vietnam to 2020, with a Vision to 2030

Decision No. 45/QĐ-TTg issued on January 8th, 2014 of the Prime Minister approving the Master planning on biodiversity conservation of the whole country to 2020, with a Vision to 2030

Decision No. 628/QĐ-TTg issued on May 10th, 2017 of the Prime Minister approving the Urgent Conservation Action Plan for Primates in Vietnam to 2025, with a Vision to 2030. ULR: <http://www.tongcuclamnghiep.gov.vn/LamNghiep/Index/quyet-dinh-so-628qd-ttg-ngay-1052017-cua-thu-tuong-chinh-phu-phe-duyet-ke-hoach-hanh-dong-khan-cap-bao-ton-cac-loai-linh-truong-o-viet-nam-den-nam--3388>

Decree No. 06/2019/ND-CP dated January 22, 2019 on management of endangered, precious and rare species of forest fauna and flora and observation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora. ULR: <http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class=id=1&page=1&mode=detail&document-id=196022>

Decree No. 160/2013/ND-CP dated November 12, 2013, on criteria to determine species and regimes for managing species on the list of endangered, precious and rare species prioritized for protection. ULR: <http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class=id=1&page=1&mode=detail&document-id=170893>

Decree No. 64/2019/ND-CP amending Article 7 of Decree No. 160/2013/ND-CP dated November 12, 2013 on criteria for identifying species and management regimes of species on the List of endangered, precious and rare species prioritized for protection. ULR: <http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class=id=1&page=1&mode=detail&document-id=197392>

IUCN (2020), 2020 IUCN Red List of Threatened Species. ULR: <https://www.iucnredlist.org/>

Law No. 16/2017/QH14: Law on Forestry, ULR: <http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class=id=1&page=1&mode=detail&document-id=192329>

Law No. 20/2008/QH12: Law of Biodiversity (2008). ULR: <http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class=id=1&page=1&mode=detail&document-id=81137>

Trinh, D. H., (2020). Progress review for the implementation of NCD Plan on Strengthening the management capacity of protected areas system to 2025, with a vision to 2030 (according to Decision No. 626/QĐ-TTg). Technical report, GIZ-Bio Phase II, Hanoi, Vietnam.

APPENDICES

Appendix 1. List and conservation status of primates in Vietnam.

No	Common name	Latin name	ND 32	ND 06	ND 160	ND 64	IUCN 2017	IUCN 2020	SĐVN	CITES
Lorises		Loridae								
1	Pigmy Slow Loris	<i>Nycticebus pygmaeus</i>	IB	IB	X	X	EN	EN	VU	I
2	Bengal Slow Loris	<i>Nycticebus bengalensis</i>	IB	IB	X	X	EN	EN	VU	I
Old World Monkeys		Cercopithecidae								
3	Grey Langur	<i>Trachypithecus crepusculus*</i>	IB	IB	X	X	EN	EN	EN	II
4	Delacour's Langur	<i>Trachypithecus delacouri</i>			X	X	CR	CR	CR	I
5	Francois' Langur	<i>Trachypithecus francoisi</i>	IB	IB	X	X	VU	EN	EN	II
6	Indochinese Silvered Langur	<i>Trachypithecus germaini**</i>	IB	IB	X	X	VU	EN	VU	II
7	Annamese Silvered Langur	<i>Trachypithecus margarita***</i>	IB	IB	X	X	VU	EN	VU	II
8	Ha Tinh Langur	<i>Trachypithecus hatinensis</i>	IB	IB	X	X	VU	EN	EN	II
9	Cat Ba Langur	<i>Trachypithecus poliocephalus</i>	IB	IB	X	X	CR	CR	CR	I
10	Grey-shanked Douc	<i>Pygathrix cinerea</i>	IB	IB	X	X	EN	CR	CR	I
11	Red-shanked Douc	<i>Pygathrix nemaues</i>	IB	IB	X	X	EN	CR	EN	I
12	Black-shanked Douc	<i>Pygathrix nigripes</i>	IB	IB	X	X	EN	CR	EN	I
13	Tonkin Snub-nosed Monkey	<i>Rhinopithecus avunculus</i>	IB	IB	X	X	CR	CR	CR	I
14	Stump-tailed Macaque	<i>Macaca arctoides</i>	IIB	IIB			VU	VU	VU	II
15	Assamese Macaque	<i>Macaca assamensis assamensis</i>	IIB	IIB			NT	NT	VU	II
16	Long-tailed Macaque	<i>Macaca fascicularis fascicularis</i>	IIB	IIB			LC	LC	LR	II

17	Con Dao Long-tailed Macaque	<i>Macaca fascicularis condorensis</i>	IIB	IIB			LC	CR		
18	Northern Pig-tailed Macaque	<i>Macaca leonina</i>	IIB	IIB			VU	VU	VU	II
19	Rhesus Macaque	<i>Macaca mulatta</i>	IIB	IIB			LC	LC	LR	II
	Gibbons	Hylobatidae								
20	Northern Buff-cheeked Gibbon	<i>Nomascus annamensis</i> ***	IB	IB	X	X	EN	EN		I
21	Western Black-crested Gibbon	<i>Nomascus concolor</i>	IB	IB	X	X	CR	CR	EN	I
22	Yellow-cheeked Gibbon	<i>Nomascus gabriellae</i>	IB	IB	X	X	EN	EN	EN	I
23	Northern white-cheeked Gibbon	<i>Nomascus leucogenys</i>	IB	IB	X	X	EN	CR	EN	I
24	Cao Vit Gibbon	<i>Nomascus nasutus</i>	IB	IB	X	X	CR	CR	EN	I
25	Southern white-cheeked Gibbon	<i>Nomascus siki</i> ****	IB	IB	X	X	EN	CR	EN	I

Notes:

- ND 32 – Degree No. 32/2006/ND-CP: IB – Group IB. Forest animals strictly prohibited to exploitation and use for commercial purposes.; IIB – Group IIB. Forest animals strictly exploited and used for commercial purposes
- ND 06 – Degree No. 06/2019/ND-CP: IB – Group IB. Forest animals strictly prohibited to exploitation and use for commercial purposes.; IIB – Group IIB. Forest animals strictly exploited and used for commercial purposes
- NDD160 – Degree No. 160/2013/ND-CP: X – listed in the List of endangered, precious, rare species for conservation priority
- ND 64 – Degree No. 64/2019/ND-CP: X – listed in the List of endangered, precious, rare species for conservation priority
- SDVN – Vietnam Red Data Book (2007): CR – Critically Endangered; EN – Endangered; VU – Vulnerable; LR – Low Risk
- IUCN – 2020 IUCN Red List of Threatened Species: CR – Critically Endangered; EN – Endangered; VU – Vulnerable; LC – Least Concerned
- CITES – CITES: I – Appendix I; II – Appendix II

*former name *Trachypithecus barbei* (*T. phayrei*); ** former name *Trachypithecus villosus* (*T. cristatus*); *** newly described in 2010, formerly name as *Nomascus gabriellae*; **** upgraded from subspecies *Nomascus leucogenys siki* of *Nomascus leucogenys*.

Appendix 2. Publications on primates in Vietnam during 2017-2020.

1. Anh Tuan Nguyen, Thanh Van Nguyen, Timmins, R., McGowan, P., Thang Van Hoang & Minh Duc Le (2020), Efficacy of camera traps in detecting primates in Hue Saola Nature Reserve. *Primates* 61:697–705. DOI: 10.1007/s10329-020-00823-4
2. Bach Thanh Hai, Jin Chen, Tiwari, A; & Hoang Minh Duc (2020), Ranging behavior of the southern yellow-cheeked gibbon (*Nomascus gabriellae*) in response to food resources and environmental variables *Vietnamese Journal of Primatology* (2020) vol. 3(2): 1-22.
3. Bui Van Tuan, Chia L. Tan, Nguyen Ai Tam, Hoang Quoc Huy, Tran Huu Vy, Van Ngoc Think & Phillips, J.A; (2019) A large population of the northern yellow-cheeked gibbon (*Nomascus annamensis*) and new records on the primate diversity in Ba Na-Nui Chua Nature Reserve, Danang, Vietnam. *Vietnamese Journal of Primatology* (2019) vol. 3(1): 27-40.
4. Bui Van Tuan, Nguyen Ai Tam, Tran Huu Vy, Ha Thang Long, Nguyen Thi Thu Thao, Tran Kim Phung, Hoang Quoc Huy, Pham Minh Huan & Nadler, T., (2019) Discovery of isolated populations of the ‘Critically Endangered’ grey-shanked Douc (*Pygathrix cinerea*) in Quang Nam Province, Vietnam. *Vietnamese Journal of Primatology* (2019) vol. 3(1): 19-25.
5. Dung V. Tran, Thinh T. Vu, Bao Q. Tran, Manh D. Nguyen, Phuong T. Vu, Trang H. Tran, Hoa T. Nguyen, Thong V. Pham & Thanh C. Nguyen (2020), Modelling the change in the distribution of the black-shanked douc, *Pygathrix nigripes* (Milne-Edwards) in the context of climate change: Implications for conservation. *The Raffles Bulletin of Zoology* 68: 769-778.
6. Ha Thang Long (2020) Feeding behaviour and diet of grey-shanked Doucs (*Pygathrix cinerea*) in Kon Ka Kinh National Park, Vietnam. *Vietnamese Journal of Primatology* (2020) vol. 3(2): 59-83
7. Covert, H.H., Hoang Minh Duc, Le Khac Quyet, Ang, A., Harrison-Levine, A., & Tran Van Bang (2017), Primates of Vietnam: Conservation in a Rapidly Developing Country. *Anthropology Now* (9): 27-44. DOI: 10.1080/19428200.2017.1337353
8. Hoang Van Chuong, Hoang Minh Duc, Ha Thang Long, Bui Van Tuan, Covert, H.H., & Williams, S.E (2018), A Review of the Distribution of a New Gibbon Species: The Northern Yellow-cheeked Crested Gibbon (*Nomascus annamensis*) Think, Mootnick, Thanh, Nadler and Roos, 2010. *Primate Conservation* 2018 (32): 185-191.
9. Lippold, L.K., Vu Ngoc Thanh & Tran Dinh Nghia (2018) Resource Assessment and Development Impact on Douc Population at Son Tra Natural Reserve, Vietnam. *Primate Conservation* 2018 (32): 8 pp.
10. Blair, M.E., Minh D. Le, Hoàng M. Thạch, Panariello, A., Ngoc B. Vũ, Birchette, M.G., Sethi, G., & Sterling, E.J., (2017), Applying systems thinking to inform studies of wildlife trade in primates. *American Journal of Primatology* (79). DOI: 10.1002/ajp.22715
11. Nguyen Hai Ha, Dinh Huy Tri, Nguyen Xuan Dang, Bui Ngoc Thanh & Tran Dinh Anh (2020), Photo evidence for the occurrence of the black ‘ebenus’ morph of the Hatinhlangur (*Trachypithecus hatinhensis*) in the Phong Nha-Ke Bang National Park and comments on this morph *Vietnamese Journal of Primatology* (2020) vol. 3(2): 49-52.
12. Nguyen Tuan Anh, Le Duc Minh, Pham Viet Hung & Vu Thi Duyen (2019), Modeling the Red-shanked Douc (*Pygathrix nemaeus*) distribution in Vietnam using Maxent *VNU Journal of Science: Earth and Environmental Sciences*, Vol. 35, No. 3 (2019) 61-71
13. Nguyen Van Linh, Mai Van Quyen & Nadler, T., (2019) Rapid population increase of the Critically Endangered Delacour’s langur (*Trachypithecus delacouri*) in Van Long Nature Reserve due to strict protection. *Vietnamese Journal of Primatology* (2019) vol. 3(1): 3-18.

14. Nguyen Van Minh (2019), Conservation of the Red-shanked Doucs (*Pygathrix nemaeus*) in Bach Ma National Park: An update on distribution and population size. *Journal of Forestry Science and Technology* 7(2019):98-104
15. Thạch H.M., Le M.D., Vũ N.B., Panariello A., Sethi G., Sterling E. & Blair M.E. (2018), Slow Loris Trade in Vietnam: Exploring Diverse Knowledge and Values. *Folia Primatol* (89):45-62. DOI: 10.1159/000481196
16. Thanh Vinh Nguyen, Tong Thi Nhai (2018), Behavior and ecology of *Macaca leonina* (Mammalia: Primates) at Ha Noi Zoo, Vietnam. *Academia Journal of Biology* (40). DOI: 10.15625/2615-9023/v40n3.11454
17. Nadler, T., Bui Van Tuan & Hoang Quoc Huy (2019) Unexpected incidents during reintroduction of Ha Tinh langurs (*Trachypithecus hatinhensis*). *Vietnamese Journal of Primatology* (2019) vol. 3(1): 41-54.
18. Nadler, T., Rabett, R., O'Donnell, S., & Nguyen Thi Mai Huong (2020), Delacour's langur (*Trachypithecus delacouri*) reintroduction program: A preliminary report on the trial release into the Trang An UNESCO World Heritage Site, Ninh Binh Province, Vietnam *Vietnamese Journal of Primatology* (2020) vol. 3(2): 39-48.
19. Van Bang Tran, Minh Duc Hoang, Hong Truong Luu, Workman, C., & Covert, H., (2019), Diet of the Annamese langur (*Trachypithecus margarita*) (Elliot, 1909) at Ta Kou Natural Reserve, Binh Thuan Province, Vietnam. *Raffles Bulletin of Zoology* 67: 352–362.
20. Vo Duy Thanh, Vu Hoai Nam, Le Thi Lan Anh, Tran Nam Trieu, Nguyen Dinh Hung² Nguyen Thi Nhien, Rowley, C., Nadler, T., Bui Khanh Linh (2020), Transmission of *Echinococcus ortleppi* at the Endangered Primate Rescue Centre, Cuc Phuong National Park *Vietnamese Journal of Primatology* (2020) vol. 3(2): 53-58.

**BỘ NÔNG NGHIỆP
VÀ PHÁT TRIỂN NÔNG THÔN**

**CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc**

Số: *3394* /QĐ- BNN-TCLN

Hà Nội, ngày *16* tháng *8* năm *2017*

QUYẾT ĐỊNH

Thành lập Ban chỉ đạo Đề án tăng cường năng lực quản lý hệ thống khu bảo tồn và Kế hoạch hành động khẩn cấp Bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030

BỘ TRƯỞNG BỘ NÔNG NGHIỆP VÀ PHÁT TRIỂN NÔNG THÔN

Căn cứ Nghị định số 15/2017/NĐ-CP ngày 17/02/2017 của Chính phủ quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Nông nghiệp và Phát triển nông thôn;

Căn cứ Quyết định số 626/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ về việc phê duyệt Đề án tăng cường năng lực quản lý hệ thống khu bảo tồn đến năm 2025, tầm nhìn 2030;

Căn cứ Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ về việc phê duyệt Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030;

Xét đề nghị của Tổng cục trưởng Tổng cục Lâm nghiệp tại Tờ trình số *1279* /TTr-TCLN-BTTN ngày *16* /8/2017 về việc thành lập Ban chỉ đạo Đề án tăng cường năng lực quản lý hệ thống khu bảo tồn và Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030,

QUYẾT ĐỊNH:

Điều 1. Thành lập Ban chỉ đạo Đề án tăng cường năng lực quản lý hệ thống khu bảo tồn và Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030 (gọi chung là Ban chỉ đạo) gồm các thành viên như sau:

1. Trưởng ban: Ông Cao Chí Công, Phó Tổng cục trưởng Tổng cục Lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn.
2. Phó trưởng ban: Ông Trần Thế Liên, Vụ trưởng Vụ Bảo tồn thiên nhiên, Tổng cục Lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn.
3. Các thành viên:
 - a) Ông Đoàn Chiến Dũng, Chuyên viên cao cấp Vụ Kinh tế Nông nghiệp, Bộ Kế hoạch và Đầu tư;
 - b) Đại diện Vụ Hành chính Sự nghiệp, Bộ Tài chính;

c) Ông Tống Anh Tuấn, Trưởng phòng Tổ chức biên chế, Bộ Nông nghiệp và Phát triển nông thôn;

d) Ông Phạm Trung Kiên, Chuyên viên Vụ Kế hoạch, Bộ Nông nghiệp và Phát triển nông thôn;

đ) Bà Trần Thị Bảo Ngọc, chuyên viên Vụ Tài chính, Bộ Nông nghiệp và Phát triển nông thôn;

e) Ông Nguyễn Thanh Bình, Phó Vụ trưởng Vụ Bảo tồn và Phát triển nguồn lợi Thủy sản, Tổng cục Thủy sản, Bộ Nông nghiệp và Phát triển nông thôn;

f) Bà Hoàng Thị Thanh Nhân, Phó Cục trưởng Cục Bảo tồn Đa dạng sinh học, Tổng cục Môi trường, Bộ Tài nguyên và Môi trường;

g) Ông Lê Xuân Cảnh, Viện sinh thái tài nguyên và sinh vật, Viện hàn lâm công nghệ Việt Nam;

h) Bà Vũ Thị Lê Lương, Phó Vụ trưởng Vụ Kế hoạch Tài chính, Tổng cục lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn;

i) Ông Vương Tiến Mạnh, Phó Giám đốc Cơ quan Quản lý CITES Việt Nam, Tổng cục Lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn;

j) Ông Trần Hoàng Hà, Kiểm lâm viên phòng Quản lý bảo vệ rừng, Cục Kiểm lâm, Tổng cục Lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn.

k) Ông Nguyễn Mạnh Hiệp, Chuyên viên Vụ Bảo tồn thiên nhiên, Tổng cục Lâm nghiệp, Bộ Nông nghiệp và Phát triển nông thôn (thành viên thư ký);

Điều 2. Ban chỉ đạo có nhiệm vụ giúp Bộ trưởng chỉ đạo, điều hành, thực hiện Quyết định số 626/QĐ-TTg và Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ phê duyệt Đề án tăng cường năng lực quản lý hệ thống khu bảo tồn và Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030.

Điều 3. Nhiệm vụ cụ thể của các thành viên Ban chỉ đạo do Trưởng ban Ban chỉ đạo phân công; giúp việc cho Ban chỉ đạo giao cho Tổng cục Lâm nghiệp đảm nhiệm, thành lập nhóm công tác để hỗ trợ hoạt động của Ban chỉ đạo.

Điều 4. Quyết định này có hiệu lực kể từ ngày ký. Ban chỉ đạo hoạt động theo chế độ kiêm nhiệm và tự giải thể sau khi hoàn thành nhiệm vụ.

Điều 5. Chánh Văn phòng Bộ, Tổng cục trưởng Tổng cục Lâm nghiệp, các thành viên trong Ban chỉ đạo có tên tại Điều 1; Thủ trưởng các cơ quan, đơn vị liên quan chịu trách nhiệm thi hành Quyết định này./.

Nơi nhận:

- Như Điều 5;
- Các Bộ: Kế hoạch và Đầu tư, Tài chính, Tài nguyên và MT;
- Các đơn vị thuộc Bộ, thuộc TCLN;
- Lưu: VT, TCLN. <3C>

KT. BỘ TRƯỞNG
THỨ TRƯỞNG



[Handwritten Signature]

Hà Công Tuấn

Appendix 4. Some provincial notices directing implementation of Decision No. 628/QĐ-TTg.

**ỦY BAN NHÂN DÂN
TỈNH KON TUM**

Số: *3527*/KH-UBND

**CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc**

Kon Tum, ngày *28* tháng 12 năm 2017

KẾ HOẠCH

Triển khai thực hiện Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ về việc phê duyệt Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030 trên địa bàn tỉnh Kon Tum

Thực hiện Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ về phê duyệt Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030 (*sau đây gọi là Quyết định số 628/QĐ-TTg*), UBND tỉnh ban hành Kế hoạch triển khai thực hiện nhiệm vụ bảo tồn linh trưởng trên địa bàn tỉnh với các nội dung như sau:

I. MỤC ĐÍCH, YÊU CẦU

1. Mục đích.

- Tổ chức quán triệt, cụ thể hóa nhiệm vụ và giải pháp để triển khai thực hiện hiệu quả chỉ đạo của Thủ tướng Chính phủ tại Quyết định số 628/QĐ-TTg.
- Tạo môi trường sống đảm bảo cho tất cả các loài linh trưởng hiện có trên địa bàn tỉnh, trọng tâm là khu vực bên trong và bên ngoài các Vườn Quốc gia, khu bảo tồn thiên nhiên, khu bảo tồn loài và sinh cảnh trên địa bàn tỉnh được bảo tồn và phát triển bền vững dưới sự quản lý của Nhà nước và sự tham gia, ủng hộ của toàn thể xã hội.

2. Yêu cầu.

- Các hoạt động, nhiệm vụ và giải pháp bám sát nội dung Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ, đảm bảo đồng bộ, thiết thực, hiệu quả và phù hợp với đặc điểm tự nhiên của tỉnh; được lồng ghép với các chiến lược, quy hoạch, kế hoạch của các ngành, địa phương về bảo tồn đa dạng sinh học, bảo tồn thiên nhiên, bảo vệ môi trường sinh thái.
- Tăng cường công tác phối hợp giữa các Sở, ban ngành trong việc triển khai thực hiện kế hoạch; phân công, xác định rõ đơn vị thực hiện, đơn vị phối hợp với lộ trình thời gian thực hiện cụ thể, khả thi.

II. NHIỆM VỤ VÀ GIẢI PHÁP

1. Nhiệm vụ

1.1. Nâng cao nhận thức và hành động của các cơ quan, tổ chức, cá nhân về bảo tồn linh trưởng thông qua các chương trình giáo dục bảo tồn

- Quán triệt, triển khai đầy đủ nội dung, nhiệm vụ theo chỉ đạo của Thủ tướng Chính phủ tại Quyết định số 628/QĐ-TTg; nâng cao nhận thức, tăng cường



Người ký: Ủy ban Nhân
dân tỉnh Gia Lai
Cơ quan: Tỉnh Gia Lai
Thời gian ký: 04.07.2017
16:01:06 +07:00

**ỦY BAN NHÂN DÂN
TỈNH GIA LAI**

**CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc**

Số: *2496* /UBND-NL
V/v xây dựng Kế hoạch hành động
khẩn cấp bảo tồn các loài linh trưởng
trên địa bàn tỉnh

Gia Lai, ngày 04 tháng 7 năm 2017

Kính gửi:

- Sở Nông nghiệp và Phát triển nông thôn;
- UBND các huyện, thị xã, thành phố.

Thực hiện Quyết định số 628/QĐ-TTg ngày 10/5/2017 của Thủ tướng Chính phủ về Phê duyệt Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng ở Việt Nam đến năm 2025, tầm nhìn 2030. Để đáp ứng được mục tiêu ngăn chặn hoạt động săn bắn, bẫy bắt và buôn bán, vận chuyển trái pháp luật các loài linh trưởng và các sản phẩm của chúng; bảo đảm đến năm 2025 giảm 70% nạn săn bắn các loài linh trưởng nguy cấp, quý hiếm, loài ưu tiên bảo vệ, UBND tỉnh yêu cầu:

1. Vườn Quốc gia Kon Ka Kinh và Khu Bảo tồn thiên nhiên Kon Chư Răng:

- Chủ động xây dựng, thực hiện Kế hoạch hành động khẩn cấp bảo tồn các loài linh trưởng hiện có phân bố trong vùng quản lý của Vườn Quốc gia và Khu Bảo tồn trên cơ sở lồng ghép với Quy hoạch bảo tồn Đa dạng sinh học của tỉnh Gia Lai đến năm 2025, định hướng đến năm 2035; đồng thời phù hợp với công tác quy hoạch, hoạch định chính sách phát triển kinh tế - xã hội của tỉnh; lồng ghép các hoạt động bảo tồn linh trưởng với các hoạt động quản lý, bảo vệ chung của đơn vị.

- Xây dựng, lập kế hoạch tổ chức thực hiện các hoạt động tuyên truyền, giáo dục nâng cao nhận thức về bảo tồn linh trưởng; điều tra, nghiên cứu giám sát các quần thể linh trưởng nguy cấp, quý, hiếm, loài đặc hữu, loài ưu tiên bảo vệ trên diện tích rừng quản lý.

- Chủ động phối hợp với các ngành chức năng liên quan, chính quyền địa phương, các tổ chức đoàn thể tăng cường các biện pháp phòng ngừa, đấu tranh, ngăn chặn các hành vi xâm hại đối với các loài động vật hoang dã, đặc biệt các loài linh trưởng nguy cấp, quý, hiếm, loài ưu tiên bảo vệ.

2. Sở Nông nghiệp và Phát triển nông thôn:

- Phối hợp với Sở Tài nguyên và Môi trường trong việc tuyên truyền, phổ biến giáo dục pháp luật về bảo tồn đa dạng sinh học và bảo tồn các loài linh trưởng; chỉ đạo các đơn vị trực thuộc (Chi cục Kiểm lâm, các đơn vị chủ rừng) tiếp tục phối hợp với các Sở, ngành, UBND các huyện, thị xã, thành phố và các đơn vị liên quan, tổ chức thực hiện nghiêm túc Chỉ thị số 28/CT-TTg ngày 17/9/2016 của Thủ tướng Chính phủ về một số giải pháp cấp bách phòng ngừa, đấu tranh với các hành vi khai thác, săn, bẫy bắt, mua bán, vận chuyển, nuôi, giết mổ, kinh doanh, cất giữ, quảng cáo, tiêu thụ các sản phẩm, dẫn xuất, mẫu vật các loài động vật hoang dã, đặc biệt các loài linh trưởng nguy cấp, quý, hiếm không có nguồn gốc hợp pháp; xử lý nghiêm các tổ chức, cá nhân có hành vi vi phạm.

- Hàng năm, có trách nhiệm tổng hợp, tham mưu UBND tỉnh báo cáo kết quả tổ chức thực hiện Kế hoạch bảo tồn các loài linh trưởng trên địa bàn tỉnh, gửi Bộ Nông nghiệp và Phát triển nông thôn theo quy định.

3. Sở Tài nguyên và Môi trường:



Người ký: Ủy ban nhân dân tỉnh Quảng Ngãi
Cơ quan: Tỉnh Quảng Ngãi
Thời gian ký: 21.05.2020
13:48:54 +07:00

**ỦY BAN NHÂN DÂN
TỈNH QUẢNG NGÃI**

**CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc**

Số: ~~2289~~/UBND-KGVX

Quảng Ngãi, ngày ~~21~~ tháng 5 năm 2020

V/v triển khai thực hiện
Quyết định số 628/QĐ-TTg
ngày 11/5/2020 của
Thủ tướng Chính phủ

Kính gửi: Sở Giáo dục và Đào tạo

Thực hiện Quyết định số 628/QĐ-TTg ngày 11/5/2020 của Thủ tướng Chính phủ ban hành Kế hoạch thực hiện Kết luận số 51-KL/TW ngày 30/5/2019 của Ban Bí thư về tiếp tục thực hiện Nghị quyết Hội nghị Trung ương 8 khóa XI về đổi mới căn bản, toàn diện giáo dục và đào tạo, đáp ứng yêu cầu công nghiệp hóa, hiện đại hóa trong điều kiện kinh tế thị trường định hướng xã hội chủ nghĩa và hội nhập quốc tế (*được gửi trên Trục liên thông văn bản quốc gia*), Chủ tịch UBND tỉnh có ý kiến như sau:

Giao Sở Giáo dục và Đào tạo chủ trì, phối hợp với UBND các huyện, thị xã, thành phố và các sở, ban ngành, đơn vị liên quan căn cứ nội dung tại Quyết định số 628/QĐ-TTg ngày 11/5/2020 của Thủ tướng Chính phủ để tham mưu UBND tỉnh bổ sung hoặc chỉ đạo tiếp tục thực hiện Kế hoạch số 158/KH-UBND ngày 16/12/2019 của UBND tỉnh triển khai thực hiện Kết luận số 51-KL/TW ngày 30/5/2019 của Ban Bí thư; trình UBND tỉnh trước ngày 30/5/2020./.

Nơi nhận:

- Như trên;
- CT, PCT(KGVX) UBND tỉnh (b/c);
- UBND các huyện, thị xã, thành phố;
- VPUB: CVP,PCVP(KGVX), CBTH;
- Lưu: VT, KGVXbthm200

**TL. CHỦ TỊCH
KT. CHÁNH VĂN PHÒNG
PHÓ CHÁNH VĂN PHÒNG**



Trương Minh Sang

Appendix 5. Decision No. 709/STH recognising the Vietnam Primate Branch.

LIÊN HIỆP CÁC HỘI KH VÀ KT VIỆT NAM
HỘI CÁC NGÀNH SINH HỌC VIỆT NAM

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 709 /STH

Hà Nội, ngày 25 tháng 12 năm 2006


**CHỦ TỊCH
HỘI CÁC NGÀNH SINH HỌC VIỆT NAM**

- Căn cứ Quyết định số 32/HĐBT của Hội đồng Bộ trưởng (nay là Chính phủ) ngày 15/8/1982 về việc thành lập Hội Các ngành Sinh học Việt Nam.
- Căn cứ điều lệ Hội Các ngành Sinh học Việt Nam.
- Căn cứ Biên bản của Đại hội IV, Hội Thực vật học Việt Nam họp ngày 28 tháng 5 năm 2004.
- Căn cứ Đề nghị của Chủ tịch Hội Động vật học Việt Nam và Đề nghị của Ban thư ký Hội Các ngành Sinh học Việt Nam.

QUYẾT ĐỊNH

Điều 1. Công nhận Chi hội Linh trưởng Việt Nam thuộc Hội Động vật học Việt Nam.
Điều 2. Cử PGS. TS. Lê Xuân Cảnh làm Chi hội trưởng.
Điều 3. Ông Lê Xuân Cảnh, Ban chấp hành Hội Động vật học Việt Nam và Ban thư ký Hội Các ngành Sinh học Việt Nam chịu trách nhiệm thi hành Quyết định này.

**CHỦ TỊCH
HỘI CÁC NGÀNH SINH HỌC VIỆT NAM**



GS.VS. Vũ Tuyên Hoàng

Nơi gửi:

- Hội Động vật học Việt Nam;
- VP. Hội Các ngành Sinh học Việt Nam;
- Ông Lê Xuân Cảnh.

**Programme on Conservation, Sustainable Use of Forest
Biodiversity and Ecosystem Services in Viet Nam**

Unit 021, 2nd Floor, Coco Building
14 Thuy Khue Str., Tay Ho District, Hanoi, Viet Nam

T: +(84-24) 39 32 95 72
E: office.biodiversity@giz.de
I: www.giz.de/viet-nam

Summary of Macaque Crime in Vietnam: January 2010 - May 2020

Education for Nature – Vietnam (ENV)

P.O. Box 222, Hanoi, Vietnam <env@fpt.vn>

Key words: Macaca, illegal trade, confiscation, legal protection, Vietnam

Summary

**2251 illegal kept macaques found
between January 2010 and May 2020
but the real number is undoubtedly much higher**

All five macaques species found in Vietnam are protected under the Vietnamese law Decree 06/2019/NĐ-CP/Group 2B which prohibits its hunting, buying, selling, advertising, trading, or possession. Despite this decree, a large number of macaques are still illegal kept as pets. ENV presents a summary on macaque-related crimes using data collected and logged on ENV's Wildlife Crime Incident Tracking System during the period January 2010 to May 2020. The purpose of this paper is to present alarming data related to the possession and trafficking of macaques and to highlight the urgent need to tackle the high consumer demand for macaques as pets in Vietnam

ENV wildlife crime case statistics from January 2010 to May 2020 reports a total of 2,685 macaque cases. These cases include possession or trading of macaques, as well as macaque parts and products for the purpose of selling to traditional medicine makers, macaque farms, or other traders/buyers. Hereby, 1,632 cases involved physical possession of 2,251 live macaques whereby 666 cases resulted in the successful confiscation or transfer of 924 animals by authorities.

The dataset comprising the macaque individuals that could have been identified at species level shows that pig-tailed macaques (*Macaca leonina*) are the most common species kept as pets in Vietnam represented with 440 individuals (40%). Long-tailed macaques (*Macaca fascicularis*) embody the second largest group with 281 individuals (25%), while stump-tailed macaques (*Macaca arctoides*) represented with 223 individuals the third largest group (20%). Rhesus macaques (*Macaca mulatta*) and Assamese macaques (*Macaca assamensis*) comprised just 11% and 3% of the total, respectively. A majority of possession cases involved macaques of unknown species.

The large-scale use of macaques as pets in Vietnam is leading to a cascade of issues. Rescue centers and other legal establishments lack the appropriate facilities for indefinitely keeping macaques. Confiscated macaques released into the wild without proper planning, careful site selection, health screening, and monitoring pose a threat to wild populations of macaques and biodiversity as a whole. Urgent measures are necessary to reduce the use of macaques as pets such as:

1. Organize campaigns to raise awareness to reduce the demand for macaques;
2. Strengthen law enforcement to respond to macaque possession crimes;
3. Expand the capacity of legal facilities to provide space for confiscated macaques;
4. Eliminate the legal possession of macaques stemming from erroneously validated papers of ownership.

Tóm tắt các vụ phạm pháp luật về bảo vệ động vật hoang dã liên quan đến Khỉ ở Việt Nam, giai đoạn tháng 1 đến tháng 5 năm 2020

Tóm tắt

2.251 con khỉ được nuôi giữ bất hợp pháp được phát hiện từ tháng 1 năm 2010 đến tháng 5 năm 2020 nhưng con số thực chắc chắn còn cao hơn nhiều

Tất cả năm loài khỉ được tìm thấy ở Việt Nam đều được bảo vệ theo quy định của pháp luật Việt Nam, Nghị định 06/2019 / NĐ-CP / Nhóm 2B nghiêm cấm săn bắt, mua bán, quảng cáo, buôn bán hoặc sở hữu.

Bất chấp nghị định này, số lượng lớn cá thể khỉ vẫn được nuôi làm thú cưng bất hợp pháp. ENV trình bày tóm tắt các vụ vi phạm liên quan đến khỉ. Dữ liệu được thu thập và ghi lại trên hệ thống theo dõi tội phạm động vật hoang dã của ENV từ tháng 1 năm 2010 đến tháng 5 năm 2020.

Mục đích của bài báo này nhằm đưa ra các số liệu đáng báo động liên quan đến việc sở hữu và buôn bán khỉ. Và nêu nhu cầu cấp thiết cần giải quyết thực trạng nhiều người tiêu dùng cần khỉ làm vật nuôi ở Việt Nam.

Số liệu thống kê các trường hợp phạm tội về động vật hoang dã của ENV từ tháng 1 năm 2010 đến tháng 5 năm 2020 chỉ ra rằng có tổng cộng 2.685 trường hợp liên quan đến khỉ. Những trường hợp này bao gồm sở hữu hoặc buôn bán khỉ cũng như các bộ phận và sản phẩm của khỉ với mục đích bán cho các nhà sản xuất y học cổ truyền, trang trại nuôi khỉ hoặc các thương nhân / người mua khác. Theo đó, 1.632 trường hợp liên quan đến việc sở hữu thực tế 2.251 con khỉ còn sống. Trong đó có 666 trường hợp dẫn đến việc cơ quan chức năng tịch thu hoặc chuyển giao thành công 924 con.

Đối với các cá thể khỉ có thể định danh đến loài cho thấy khỉ đuôi lợn (*Macaca leonina*) là loài phổ biến nhất được nuôi làm thú cưng ở Việt Nam với 440 cá thể (40%). Khỉ đuôi dài (*Macaca fascicularis*) là nhóm lớn thứ hai với 281 cá thể (25%), trong khi khỉ đuôi dài (*Macaca arctoides*) có 223 cá thể là nhóm lớn thứ ba (20%). Khỉ vàng Rhesus (*Macaca mulatta*) và khỉ mốc Assamese (*Macaca assamensis*) lần lượt chỉ chiếm 11% và 3% tổng số. Phần lớn các vụ sở hữu liên quan đến khỉ không rõ loài.

Việc sử dụng quy mô lớn khỉ làm vật nuôi ở Việt Nam đang dẫn đến một loạt các vấn đề. Các trung tâm cứu hộ và các cơ sở hợp pháp thiếu các phương tiện thích hợp để giữ khỉ vô thời hạn. Khỉ bị tịch thu thả vào tự nhiên mà không có kế hoạch thích hợp, lựa chọn địa điểm cẩn thận, kiểm tra sức khỏe và giám sát sau khi thả. Đây chính là mối đe dọa đối với quần thể khỉ hoang dã và đa dạng sinh học nói chung. Các biện pháp khẩn cấp để giảm việc sử dụng khỉ làm vật nuôi như:

1. Tổ chức các chiến dịch nâng cao nhận thức để giảm nhu cầu về khỉ;
2. Tăng cường thực thi pháp luật để ứng phó với tội phạm sở hữu trái phép khỉ;
3. Mở rộng năng lực của các cơ sở hợp pháp để cung cấp không gian sống phù hợp cho các con khỉ bị tịch thu;
4. Loại bỏ quyền sở hữu hợp pháp đối với khỉ bắt nguồn từ các giấy tờ sở hữu không đúng quy định của pháp luật.

Introduction

ENV has prepared the summary on macaque crimes in Vietnam using data collected and logged on ENV's Wildlife Crime Incident Tracking System during the period January 2010 to May 2020. The purpose of this summary of critical data is to provide the means necessary to develop interventions aimed at strategically reducing consumer demand for macaques as pets in Vietnam.

ENV recognizes the macaque trade in Vietnam predominantly encompasses large-scale legal farming to meet the demand from Chinese, European, and US laboratories needing test animals, and to a lesser extent, the demand for macaque bones for use in traditional medicine. However, ENV's Wildlife Crime Unit is receiving increasingly widespread reports of the sale, advertisement, and possession of macaques as pets. Responding to these violations on a case by case basis is rapidly becoming a burden for law enforcement, and exasperating concerns over placement and release of confiscated animals.

In March 2020, ENV launched its "Macaques are not pets" campaign to focus on reducing consumer demand and easing the burden upon enforcement agencies and rescue centers. However, efforts aimed at reducing consumer demand are unlikely to be achieved within a short period of time, while rescue centers and other legal establishments are no longer in a position to receive macaques. Furthermore, the release of macaques back into the wild may seem appropriate, but the practice fails to meet international standards, generating concerns over the possibility of introducing disease which could impact wild ecosystems. Additionally, the release of animals accustomed to humans or unfit to survive in the wild may result in death, or the animal's return into the wildlife trade.

Limitations

The data contained in this report is based on cases logged by ENV during the reporting period. While it may reflect the current situation facing macaques in Vietnam, readers should be aware there is a high probability that hundreds of more cases are never reported, and confiscations may only reflect those cases known by ENV, or for which ENV played an active role in working with authorities to secure the confiscation.

Terminology: Seizure, confiscation, transfer

Seizure and confiscation are used interchangeably to mean the same thing: law enforcement intervention resulting in removal of the macaque from its possessor. Transfers, on the other hand, involve voluntary acts by persons possessing macaques who request ENV's help to surrender the animal. In most cases, ENV coordinates with authorities to receive the animal. For the purpose of this data summary, transfer cases are not distinguished separately from confiscations as the purpose is to evaluate the number of animals and cases, not the specific intervention that resulted in macaques being turned over to authorities.

Macaques and their legal protection in Vietnam

There are five species of macaques native to Vietnam: long-tailed macaques (*Macaca fascicularis*), stump-tailed macaques (*Macaca arctoides*), Rhesus macaques (*Macaca mulatta*), pig-tailed macaques (*Macaca leonina*), and Assamese macaques (*Macaca assamensis*). All five species are found in the trade, though Assamese macaques are less common.

All five species of native macaques are protected under the Vietnamese law Decree 06/2019/NĐ-CP/Group 2B which prohibits buying, selling, advertising, trading, or possession of a macaque without a permit issued by the Forest Protection Department. Generally, permits cannot be obtained to keep macaques as pets, though a few have been issued in some cases, which remain as a concern.

Macaque crime overview 2010-2020

ENV wildlife crime case statistics from January 2010 to May 2020 indicate that ENV logged 2,685 macaque cases, comprised of 2,967 individual violations during the reporting period. Of these cases, 1,790 involved physical and online possessions of macaques, or parts and products of macaques, while 771 cases involved advertising or selling macaques or parts and products made from macaques. A total of 107 trafficking cases were logged during this period, which involved individuals transporting or keeping large numbers of macaques for the purpose of selling to traditional medicine makers, macaque farms, or other traders/buyers.

Possession of live macaque cases

Between January 2010 and May 2020, ENV logged 1,632 cases involving physical possession of 2,251 live macaques (this number excludes online cases). Of these 1,632 cases reported, 666 cases resulted in the successful confiscation or transfer of 924 animals by authorities.

Macaque possession case distribution by year

Macaque possession cases reported to ENV increased by 44% from 2018 to 2019, from 177 cases in 2018 to 255 in 2019, suggesting a substantial increase in the number of people keeping macaques as pets (Fig. 1). However, this increase could also be explained as result of increased public reporting of macaque crimes in 2019.

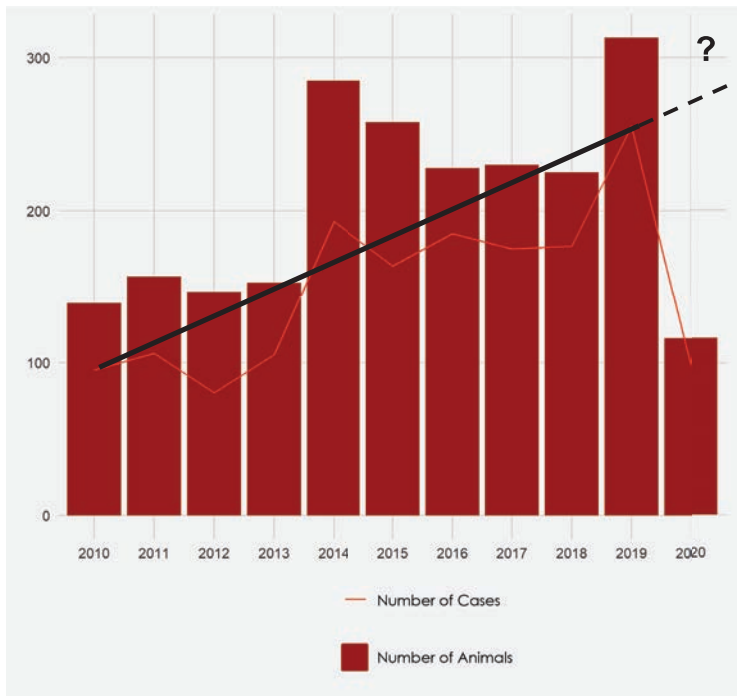


Fig.1. Total number of macaque cases reported by year (January 2010 to May 2020) shows a very strong increase during the last decade.

Species composition of possession cases

ENV data shows that pig-tailed macaques (*Macaca leonina*) are the most common species kept as pets in Vietnam, comprising 40% of the total number of macaques where species was known, represented as 440 animals. Long-tailed macaques (*Macaca fascicularis*) embody the second largest group with 281 animals or 25% of the total, while stump-tailed macaques (*Macaca arctoides*) represented the third largest group with 223 animals or 20% of the total. Rhesus macaques (*Macaca mulatta*) and Assamese macaques (*Macaca assamensis*) comprised just 11% and 3% of the total respectively.

A majority of possession cases involved macaques of unknown species. Lack of species identification stems from non-specific reports from the public regarding macaques observed in captivity which does not result in confiscation by authorities. In a small number of cases, lack of macaque identification in successful confiscation cases is a consequence of poor identification skills by local authorities. As a result, a total of 1,146 macaques remain unidentified, roughly half of the 2,251-total number of macaques reported in possession cases (Fig. 2; Table 1).

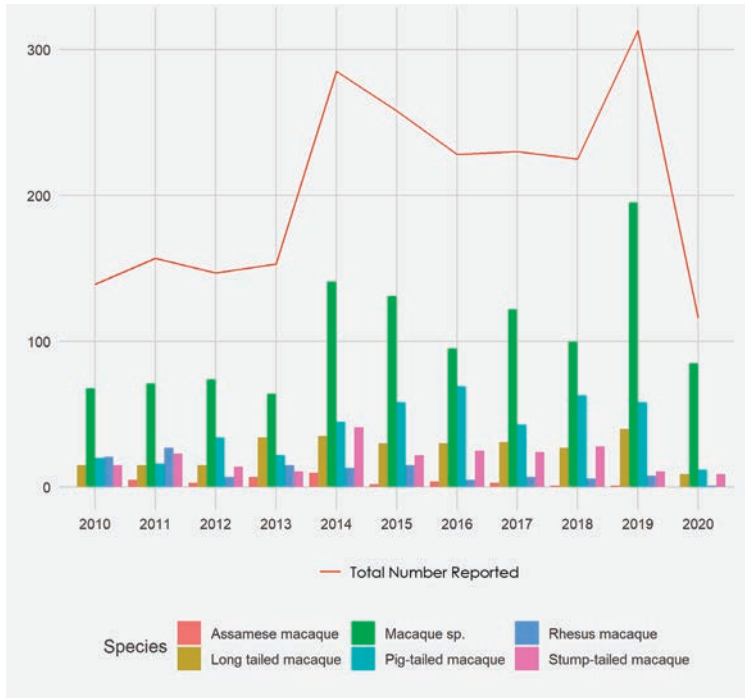


Fig.2. Total number of macaques reported by species and year (January 2010 to May 2020) shows a very strong increase mainly affected by pig-tailed macaques and stump-tailed macaques. Both species are assessed as threatened with the status 'Vulnerable' by the IUCN Red List of Threatened Species (Boonratana et al. 2020; Chetry et al. 2020).

Table 1. Macaque possession numbers by species and year.

Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	May 2020	Total
Long tailed macaque	15	15	15	34	35	30	30	31	27	40	9	281
Pig-tailed macaque	20	16	34	22	45	58	69	43	63	58	12	440
Assamese macaque	0	5	3	7	10	2	4	3	1	1	0	36
Rhesus macaque	21	27	7	15	13	15	5	7	6	8	1	125
Stump-tailed macaque	15	23	14	11	41	22	25	24	28	11	9	223
Macaque sp.	68	71	74	64	141	131	95	122	100	195	85	1146
Total macaques by year	139	157	147	153	285	258	228	230	225	313	116	2251

Seizure distribution and disposition

The southern provinces exceeded northern provinces in terms of number of macaques confiscated by authorities. Ho Chi Minh City led the country with 78 possession cases resulting in the confiscation of 92 macaques, while Ba Ria Vung Tau followed with 52 macaques confiscated, trailed closely by Hanoi [52], Da Nang and Khanh Hoa [each 48] (Fig. 3). As noted previously, one of the most pressing challenges authorities face when confiscating macaques is what to do with the animal once it is confiscated. Choices include transferring the animal to a rescue center or other legal establishment, such as a zoo, a safari park or releasing the macaque into nature.

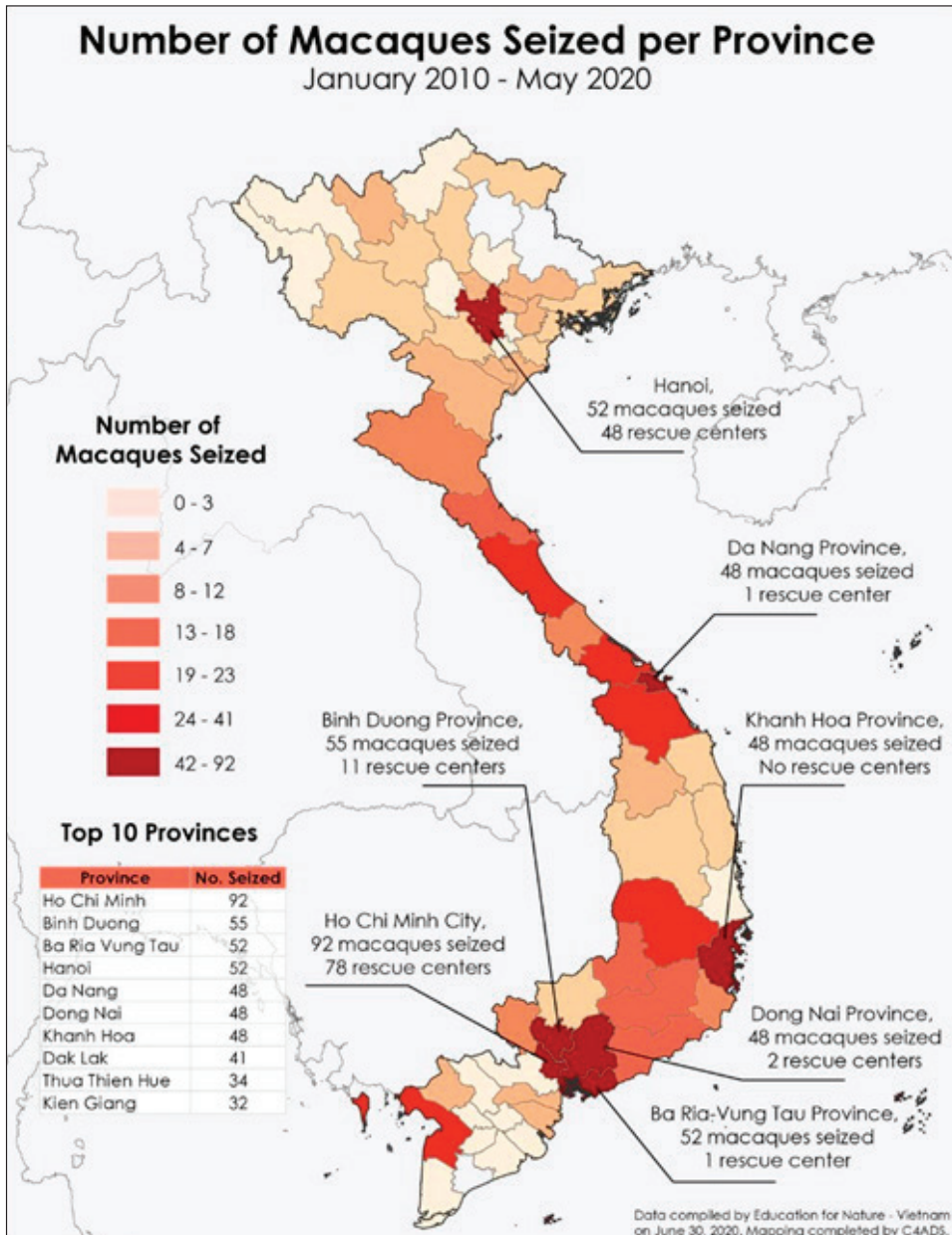


Fig.3. Hotspots for macaque confiscations. Number of macaques seized per province (January 2010 to May 2020).

Rescue centers and other legal establishments lack the appropriate facilities for indefinitely keeping macaques and must consider critical factors such as preventing captive macaques from breeding in shared cages. Even when there is space available, provincial Forest Protection Departments generally lack the funds to transfer macaques to rescue centers beyond provincial borders, and rescue centers may be either unwilling to make the long trip to recover one or more macaques, or lack the budget to do so. Lack of space is a serious problem for macaques and will continue to become an increasingly serious issue unless specific facilities are made available with suitable funding to receive animals.

The predominant alternative to placement at a legal facility has been release, with 593 of 924 confiscations [64%] resulting in releases. The release of macaques and other wildlife back into the wild may appear to be a reasonable solution; however, release of animals that have been held in captivity is not an accepted solution. Firstly, macaques are rarely released to their original habitat, and thus are released into an unfamiliar area. Macaques released in an area of a different species create the danger of hybridisation and can adulterate the gene pool of a native species. The risk for the native species and the biodiversity is uncalculable. Moreover, macaques from the wildlife trade may have been exposed to or be carrying specific diseases that could be introduced into otherwise healthy populations of macaques. Macaques are not unusual infected with tuberculosis, herpes or hepatitis which can be fatal for a whole native population.

Likewise, animals that have spent time in captivity become accustomed to humans, particularly macaques raised in captivity from infancy, making it difficult or even impossible to adjust to living in the wild.

In all likelihood, releases result in the animal dying due to inability to adjust to the new environment, becoming prey, or being recaptured by hunters.

The sound release of an animal requires extensive planning, careful site selection, health screening, and monitoring post release to increase the chance of an animal's survival in the wild after a stint in captivity.

Provinces where the majority of macaques are released following confiscation correspond with those provinces which lack accessibility to rescue centers, or lack rescue centers that accept macaques.

Macaques as pets: Future outlook

If wild macaque populations are to be fully protected in Vietnam, the only viable option is to strengthen protection and reduce consumer demand for macaques as pets. ENV has outlined the following measures that must be undertaken to ensure macaque protection:

1. Actively campaign to raise awareness and reduce consumer demand for macaques as pets. While ENV has already initiated macaque campaign efforts in this regard, a much broader and wide-reaching effort by multiple organizations and the government would strengthen this aim.
2. Sustain current efforts by authorities to respond to macaque possession crimes and confiscate macaques. Through continued law enforcement actions, combined with increased awareness, macaque possession can be deterred as the idea of keeping a macaque or other wild animal will be increasingly recognized and associated with illegal behavior.
3. Address the urgent need for legal facilities to receive confiscated macaques. Without these facilities, there will remain difficulties in securing successful enforcement interventions by authorities, and the release of macaques back into the wild will continue.
4. Reduce and eliminate the legal possession of macaques with valid papers, preventing visible possession from stimulating the desire of others to keep macaques as well.

Acknowledgements

ENV wishes to thank the Center for Advanced Defence Studies for their contribution of maps, and Cruelty Free International for their contribution to ENV's broader efforts to examine macaque trafficking in Vietnam.

References

Boonratana R, Chetry D, Long Y, Jiang X-L, Htun S & Timmins RJ (2020): *Macaca leonina*. The IUCN Red List of Threatened Species.

Chetry D, Boonratana R, Das J, Long Y, Htun S & Timmins RJ (2020): *Macaca arctoides*. The IUCN Red List of Threatened Species.



Education for Nature – Vietnam (ENV) was established in 2000 as Vietnam's first non-governmental organization focused on the conservation of nature and the protection of the environment. ENV combats the illegal wildlife trade and aims to foster greater understanding amongst the Vietnamese public about the need to protect nature and wildlife. ENV employs creative and innovative strategies to influence public attitudes and reduce demand for wildlife trade products. ENV works closely with government partners to strengthen policy and legislation, and directly supports enforcement efforts in the protection of endangered species of regional, national, and global significance.

The illegal trade of the douc langurs (*Pygathrix* sp.) in Vietnam – January 2010 to December 2020

Alexandra McEwan¹, Tilo Nadler² and Owen Nevin^{3,4,5}

¹ The College of Law, Criminology, and Justice, Central Queensland University (Melbourne Campus) Australia. Corresponding author <a.mcewan@cqu.edu.au>

² Three Monkeys Wildlife Conservancy, Cuc Phuong Commune, Nho Quan District, Ninh Binh Province, Vietnam. <t.nadler@hust.edu.vn>

³ The Western Australian Biodiversity Science Institute, Perth, Australia. <owen.nevin@wabsi.org.au>

⁴ Central Queensland University, Australia.

⁵ University of Cumbria, UK.

Key words: illegal trade, douc langur, *Pygathrix*, Vietnam

Summary

All three species of douc langur existing in Vietnam, the red-shanked, the grey-shanked, and the black shanked douc langur (*Pygathrix nemaeus*, *P. cinerea* and *P. nigripes*) are categorized as 'Critically Endangered' in the IUCN Red List of Threatened Species. All populations in Vietnam are relatively small and fragmented. Nevertheless, the illegal trade of these species is occurring at an alarming rate despite their protection under Vietnamese laws.

The case files about douc langur seizures collected and logged on the Education for Nature's Wildlife Crime Incident Tracking System (ENV) from January 2010 to December 2020 provide background for analysis. During this period, a total of 684 douc langurs were seized in 80 cases. Black-shanked douc langurs were seized in 46 cases with a total of 560 animals, representing 82% of the confiscated douc langurs. Grey-shanked douc langurs were seized in 10 cases with 69 animals (10%), red-shanked douc langurs were seized in 20 cases with 50 animals (7%), and in 5 cases a total of 5 unidentified (1%) douc langurs were confiscated.

The main trade route commences from the southern and central provinces of Vietnam, nearby the main distribution areas of the species. The trading route then moves northwards to the Chinese border to cross the border, where the animals are sold for higher profit than they would fetch in Vietnam. One of the main identified trade centers is Binh Phuoc Province in South Vietnam which borders Cambodia not far from the Seima Biodiversity Conservation Area. This protected area harbors one of the largest known populations of black-shanked douc langurs and provides the primary source for hunting and illegal transboundary trade of douc langurs. However, Vietnamese populations of that species suffer as well from hunting and trading.

In Central Vietnam, Kon Tum and Gia Lai Provinces are among the main trading hotspots for all three species of douc langurs. Here, red-shanked douc langurs are mainly sourced from nearby Nakai-Nam Theun National Protected Area in eastern Laos and probably also from Phong Nha-Ke Bang National Park in Central Vietnam. Grey shanked doucs are most liked extracted from Vietnam's central highlands. In Northern Vietnam, the capital city Hanoi forms a trade corridor towards the north through to Bac Kan and Cao Bang Provinces, where the trade moves across the border to China.

Urgent measures and activities with focus on the key provinces of the trade are necessary to reduce the illegal trade with these 'Critically Endangered' species.

Hoạt động buôn bán bất hợp pháp các loài voọc chà vá (*Pygathrix* sp.) ở Việt Nam – tháng 1/2010 – tháng 12/2020

Tóm tắt

Cả ba loài voọc chà vá hiện có ở Việt Nam gồm: chà vá chân nâu, chà vá chân xám và voọc chà vá chân đen (*Pygathrix nemaesus*, *P. cinerea* và *P. nigripes*) đều được xếp vào loại 'Cực kỳ nguy cấp' trong Danh lục Đỏ của IUCN. Tất cả các quần thể voọc chà vá ở Việt Nam tương đối nhỏ và bị chia cắt. Tuy nhiên, hoạt động buôn bán bất hợp pháp các loài này vẫn diễn ra ở mức báo động mặc dù đã được pháp luật Việt Nam hết sức bảo vệ.

Hồ sơ vụ án về các vụ bắt giữ voọc chà vá được thu thập và ghi lại trên hệ thống theo dõi sự cố về tội phạm động vật hoang dã của Tổ chức Giáo dục cho Thiên nhiên (ENV) từ tháng 1 năm 2010 đến tháng 12 năm 2020 được phân tích. Kết quả cho thấy, tổng số 684 cá thể voọc chà vá đã bị bắt giữ trong 80 vụ. Voọc chà vá chân đen bị bắt giữ 46 vụ với tổng số 560 con, chiếm 82% số voọc bị tịch thu. Voọc chà vá chân xám bị bắt giữ 10 vụ với 69 con (10%), voọc chà vá chân nâu bị bắt giữ 20 vụ với 50 con (7%), 5 vụ có tổng số 5 con voọc không xác định (1%).

Con đường buôn bán bất hợp pháp chính khởi nguồn từ các tỉnh miền Nam và miền Trung Việt Nam, gần các khu vực phân bố chính của các loài này. Con đường buôn bán hướng về phía bắc đến biên giới Trung Quốc để qua biên giới, nơi những con vật được bán với lợi nhuận cao hơn so với giá trị khi chúng được đưa vào Việt Nam. Một trong những trung tâm mua bán chính là tỉnh Bình Phước, miền Nam Việt Nam, giáp Campuchia, cách Khu Bảo tồn Đa dạng Sinh học Seima không xa. Khu bảo tồn này có một trong những quần thể voọc chà vá chân đen lớn nhất được biết đến. Đây cũng là nơi hoạt động săn bắt và buôn bán trái phép voọc chà vá chân đen diễn ra. Đồng thời, các quần thể loài này ở Việt Nam cũng bị ảnh hưởng bởi nạn săn bắn và buôn bán.

Ở miền Trung Việt Nam, các tỉnh Kon Tum và Gia Lai là một trong những điểm nóng buôn bán chính của cả ba loài voọc chà vá. Ở đây, voọc chà vá chân nâu chủ yếu có nguồn gốc từ Khu bảo tồn quốc gia Nakai-Nam Theun phía đông Lào và Vườn quốc gia Phong Nha-Kẻ Bàng ở miền Trung Việt Nam. Voọc chà vá chân xám được săn bắn từ Tây Nguyên của Việt Nam. Ở miền Bắc Việt Nam, thủ đô Hà Nội tạo thành một hành lang thương mại qua các tỉnh Bắc Kạn và Cao Bằng, và điểm đến là biên giới với Trung Quốc.

Các biện pháp khẩn cấp và các hoạt động tập trung vào các tỉnh trọng điểm của hoạt động buôn bán bất hợp pháp là cần thiết nhằm giảm việc buôn bán bất hợp pháp các loài 'Cực kỳ nguy cấp' này.

Introduction

Southeast Asia supports an illicit illegal wildlife trading market, and Vietnam's position within the Indo-Burma biodiversity hotspot (Myers et al. 2000) places it at the heart of the trade. Vietnam is a 'cross-bridge' for international wildlife trafficking from Indochina to China, Korea, and Japan (Nguyen Thanh Cao 2016; Krishnasamy & Zavagli 2020). The range of wild animal species illegally traded in the region is vast and the impetus towards species extermination is reaching a critical threshold. The past decade has seen a surge in efforts to combat the illegal trade of several iconic endangered taxa, which includes several primate taxa. Primates are hunted for food, traditional medicine, and the pet trade. In traditional medicine, the use of body parts is a particularly severe factor affecting population decline (Beyle et al. 2014; Nadler 2014; Estrada et al. 2017; Nadler & Roos 2017).

Twenty-two of Vietnam's 25 primate taxa are threatened with extinction and 11 taxa are listed as 'Critically Endangered' (IUCN Red List of Threatened Species 2021). The pressure of hunting for the illegal trade has pushed the douc langur species to the brink of extinction: all three species of douc langurs are now listed as 'Critically Endangered' (Coudrat et al. 2020; Ha Thang Long et al. 2020; Hoang Minh Duc et al. 2021). The red-shanked douc langur (*P. nemaesus*) and the black-

shanked douc langur (*P. nigripes*) were classified as 'Endangered' in 1988 and 2000 respectively and were elevated to 'Critically Endangered' in 2020. The grey-shanked douc langur (*P. cinerea*) was classified as 'Endangered' in 2003 and eventually listed as 'Critically Endangered' in 2008. In the present study, the case files collected and logged on Education for Nature Vietnam's (ENV) Wildlife Crime Incident Tracking System related to trading seizures involving douc langurs are analyzed across a time span of 11 years, from January 2010 to December 2020. The analysis contributes to our understanding of the illegal trade by describing its nature, identifying trading hotspots, and outlining the implications of this analysis for regulatory strategies.

Protection status of douc langurs in Vietnam

The douc langur species have been protected in Vietnam since the first animal protection law was enacted in 1992 (No. 18 HDBT). Currently, the species are protected on the highest level with Decree 06/2019 ND-CP-Group IB. Hunting, trading, advertising, and possessing of individuals are illegal and are punishable under the Penal Code Decree 35/2019/ND-CP and the Penal Code (No. 100/2015/QH13, amended by No. 12/2017/QH14) sections 234 and 244. International trade is restricted by the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). All three douc species are listed in the CITES Appendix I, a list comprising highly endangered species. Trade of species under this list require special permits for transboundary transport of body parts (e.g. samples for scientific research) or alive individuals (e.g. for captive breeding purposes for conservation).

Distribution of the douc langur species

The three douc langur species occur in nonoverlapping geographic areas and are therefore defined as widely allopatric distributed. The ranges of the three species are aligned from North to South in the following order: red-, grey- and black-shanked douc langurs. However, in Quang Nam Province, there is a small sympatric population, most probably also consisting of a hybridization between red- and grey-shanked douc langurs (Bui Van Tuan et al. 2019). Another contact between these species exists in Northeast Cambodia with evidence of hybridization (Rawson & Roos 2008).

Red shanked-douc langur

The species occurs in northern and central Vietnam and East-central Laos reaching along the Annamite Mountain Chain southwards to the Northeast corner of Cambodia, from about 19°40' to 14°20' N (Nadler et al. 2003; Rawson & Roos 2008; Nadler & Brockman 2014). The largest population, representing the stronghold of the species, is found in Central Laos within the Nakai-Nam Theun National Protected Area (Coudrat 2013; Coudrat et al. 2013; Coudrat et al. 2020). The population in this area was estimated to comprise about 4,400 groups, which makes with an estimated average of 13 individuals/group (Coudrat et al. 2013) a population of about 57,000 individuals. Populations in Vietnam are small and highly fragmented (Nadler et al. 2003; Nadler & Brockman 2014). The largest populations in Vietnam exist probably in Phong Nha-Ke Bang National Park, Quang Binh Province, with a maximum of 2,000 Individuals (Haus et al. 2009), and on Son Tra Peninsula, Danang with 1,000 to 1,600 individuals (Bui et al. 2018). For several protected areas with smaller populations there are no reliable population numbers available.

Grey-shanked douc langur

The grey-shanked douc langur is the last discovered douc langur species with the scientific description in 1997 (Nadler 1997). The species occurs in fragmented and partly in very small populations between 16° to 14° N, in Vietnam from Quang Nam Province southwards to the Gia Lai Province (Nadler et al. 2003; Nadler & Brockman 2014; Ha Thang Long et al. 2020). The global population is unknown but comprises likely less than 2,000 individuals. The entire population estimated for Vietnam is about 1,450-1,700 individuals (Ha Thang Long et al. 2020). There are 14 isolated subpopulations currently confirmed. Kon Ka Kinh National Park holds the largest subpopulation with about 250 individuals. Four larger subpopulations are located in protected areas

(Kon Ka Kinh National Park, Kon Chu Rang Nature Reserve, Ngoc Linh National Park, and Song Thanh Nature Reserve) with a total of about 560-600 individuals (Ha Thang Long et al. 2020). Small populations exist across the border of Vietnam in the Southeast corner of Laos and the Northeast corner of Cambodia (Rawson & Roos 2008).

Black-shanked douc langur

Black-shanked douc langurs occur in southern Vietnam and in northeastern Cambodia in the Ratanakiri and Mondulakiri Provinces between 11° to 13°N. The largest population probably exists in Seima Biodiversity Conservation Area, Cambodia, with an estimate of more than 40,000 individuals (Pollard et al. 2007; Clements et al. 2008). In Vietnam there are several populations in isolated areas. The largest known population in Vietnam occurs in Bu Gia Map National Park, Binh Phuoc Province, with an estimated population between 1,300 and 2,400 individuals. Other strongholds for the species are recorded in Nui Chua National Park, Ninh Thuan Province, where it is estimated that there are 500-700 individuals (Hoang Minh Duc 2007; Hoang Minh Duc & Ly Ngoc Sam 2008), in Chu Prong Nature Reserve, Gia Lai Province with about 200 to 250 individuals (Nadler 2010), and in Cat Tien National Park with about 200 to 400 individuals (Cat Tien National Park 2019).

Methods

ENV case files are created in response to a trigger event, such as identification of a Facebook post involving wildlife trafficking, phone calls via the toll-free wildlife crime hotline or notifications by the media and information from police and forest protection authorities. Files contain information from a range of sources including media reports, notes from conversations with law enforcement officers and officers of the courts, and notes drawn from documentation received from the courts.

The case files differentiate between hunting and trading cases. Hunting cases relate to circumstances in which a person is apprehended 'red-handed' with hunted animals. In trading cases, live animals or carcasses are seized after they have been transferred from the hunter to the trader. Hunting cases, of course, occur only within or nearby the area of occurrence of one of the species. Hunted animals can be used by local people, though also provide a source for the trade. Unfortunately, there are not enough data available to ascertain the percentage of hunted individuals used locally compared to those supplied for the trade. Therefore, it is not possible to present accurate information about local use.

Case file selection

The sample involved seizures made from January 2010 to December 2020. A total of 80 douc langur related cases are included in the study. A wildlife crime study conducted by Wildlife Conservation Society - Vietnam reported 1,504 wildlife-related cases detected and registered between 2013 and 2017. Approximately 120 cases (8%) involved primates (Wildlife Conservation Society Vietnam Program 2018). This high number of primate cases also includes other primate species and did not focus on douc langurs.

Case file analysis

Vietnam has 63 provinces and provinces are Vietnam's basic jurisdictional units. Cases recorded the province in which the seizure occurred, and this was an important variable for understanding the trade. The cases were organized into three regional clusters: northern, central, and southern (Fig. 1). The 'northern cluster' encompassed seizures made in Cao Bang, Bac Kan, Lang Son, Hanoi and Thanh Hoa. The 'central cluster' encompassed seizures made in Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien-Hue, Danang, Quang Nam, Kon Tum, Quang Ngai, Binh Dinh and Gia Lai. The 'southern cluster' encompassed seizures made in Dak Lak, Binh Phuoc, Dak Nong, Lam Dong, Khanh Hoan, Ninh Thuan, Dong Nai, Binh Duong and Ho Chi Minh City.

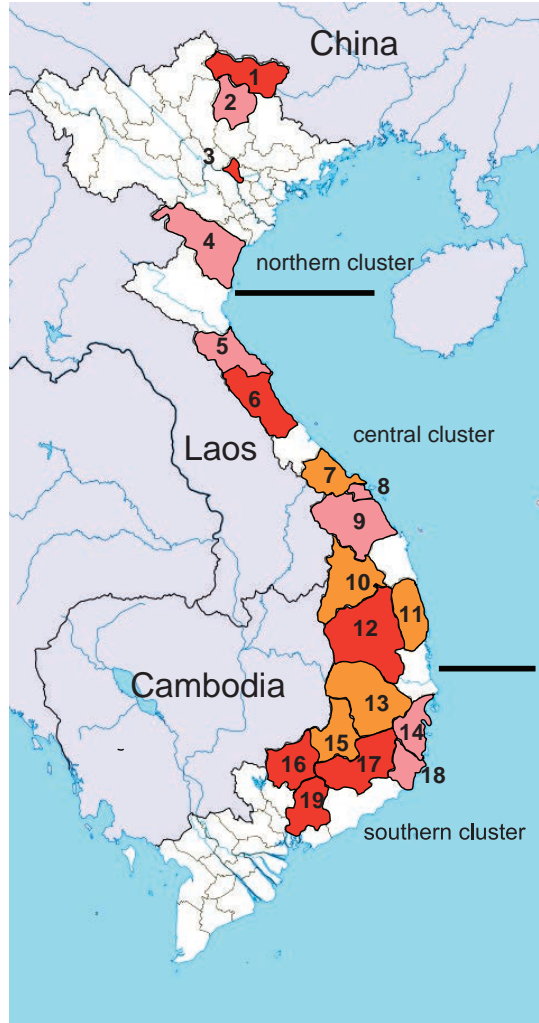


Fig.1. Confiscations of douc langurs in Vietnamese provinces.

Provinces in pink color: 2 and 3 confiscations. Provinces in orange color 3 and 4 confiscations. Provinces in red color more than 4 confiscations. Provinces in the northern cluster: 1- Cao Bang; 2- Bac Kan; 3- Hanoi; 4- Thanh Hoa. Provinces in the central cluster: 5- Nghe An; 6- Quang Binh; 7- Thu Thien-Hue; 8- Danang; 9- Quang Nam; 10- Kon Tum; 11- Binh Dinh; 12- Gia Lai. Provinces in the southern cluster: 13- Dak Lak; 14- Khanh Hoa; 15- Dak Nong; 16- Binh Phuoc; 17- Lam Dong; 18- Ninh Thuan; 19- Dong Nai.

Results

Number of douc langurs seized and species composition

Within the study period, 684 douc langurs were seized in 80 cases (Table 1). Black-shanked douc langurs were seized in 46 cases with a total of 560 animals, representing 82% of the confiscated douc langurs. Grey-shanked douc langurs were seized in 10 cases with 69 animals (10%) and red-shanked douc langurs seized in 20 cases with 50 animals (7%). In 5 cases 5 animals (1%) were not identified on species level.

By combining the province of seizure and the species, it is possible to identify the approximate origin of each douc langur. Qualitative data within the files often provided further details regarding the trade route. Geographical distribution of the species and province formed the basis of analysis, which developed a portrayal of the illegal trade and use of douc langurs both within Vietnam and across its borders.

Table 1. Douc langur seizures between January 2010 and December 2020 sorted by provinces.

Province	Species	No. of douc langurs seized
Northern Cluster		
Cao Bang	Grey-shanked	20
	Red-shanked	1
	Black-shanked	4
	Black-shanked	10
	Black-shanked	13
	Black-shanked	25
	Black-shanked	29
	Black-shanked	40
	Black-shanked	18
	Black-shanked	16
Bac Kan	Black-shanked	16
	Black-shanked	42
Lang Son	Black-shanked	21
Hanoi	Red-shanked	10
	Grey-shanked	5
	Black-shanked	5
	Black-shanked	20
	Black-shanked	2
	Red-shanked	2
Thanh Hoa	Black-shanked	6
	Red-shanked	2
Central Cluster		
Nghe An	Red-shanked	1
Ha Tinh	Red-shanked	1
	Red-shanked	2
Quang Binh	Red-shanked	1
	Black-shanked	10
	Red-shanked	3
	Red-shanked	1
Quang Tri	Red-shanked	1
Thua Thien-Hue	Black-shanked	1
	Red-shanked	3
	Red-shanked	1
Danang	Red-shanked	2
	Red-shanked	1
Quang Nam	Red-shanked	13
	unidentified	1
	Grey-shanked	2
Kon Tum	Grey-shanked	30
	Grey-shanked	3

	Red-shanked	2
Quang Ngai	Grey-shanked	1
Binh Dinh	Red-shanked	1
	Red-shanked	1
	Grey-shanked	2
Gia Lai	Grey-shanked	4
	unidentified	2
	Black-shanked	108
	Grey-shanked	1
Southern Cluster		
Dak Lak	Black-shanked	13
	Black-shanked	1
	Black-shanked	14
Binh Phuoc	Black-shanked	5
	Black-shanked	3
	Black-shanked	3
	Black-shanked	18
	Black-shanked	4
	Black-shanked	8
Dak Nong	Black-shanked	6
	Black-shanked	14
	Black-shanked	1
Lam Dong	Black-shanked	8
	Black-shanked	7
	Black-shanked	1
	Black-shanked	3
	Black-shanked	2
Khanh Hoa	Black-shanked	9
	Black-shanked	1
Ninh Thuan	Black-shanked	5
	Black-shanked	15
Dong Nai	Black-shanked	3
	Black-shanked	4
	Black-shanked	2
	Black-shanked	1
	Black-shanked	1
	unidentified	1
	unidentified	1
	Black-shanked	21
	Black-shanked	1
Binh Duong	Grey-shanked	1
Ho Chi Minh City	Red-shanked	1

Results according to regional cluster

Seizures occurred in 23 provinces and additional one in Hanoi and Ho Chi Minh City each. The largest number of seizures occurred in the southern cluster with 32 cases, followed by the central cluster with 27 cases and the northern cluster with 21 cases (Fig. 1).

Northern Cluster

The movement of the trade within the northern cluster was northwards. All seizures in this area were destined for China. Eight of the 10 seizures in Cao Bang Province, close to the Chinese border, comprised 155 black-shanked douc langurs. Twenty grey-shanked douc langurs had been purchased in Kon Tum Province and the subject had travelled from Kon Tum to Cao Bang. Six seizures were made in Hanoi, with a total of 44 douc langurs in transit to Cao Bang Province. Cao Bang Province is clearly a hotspot for the illegal trade to China.

Central Cluster

The central cluster cases bring supply across the border from Laos and Cambodia into the douc langur trading market. Kon Tum and Gia Lai Provinces were identified as douc langur trading hotspots and transit points. In Nghe An Province, the northernmost province in the central cluster, the trade was moving northwards. Traders from the North bought douc langurs in central provinces, which originated mostly from Laos and Cambodia. The composition of the confiscated animals in the central provinces of Vietnam show a high number of red-shanked douc langurs which originated in a large portion from the largest known population in Nakai-Nam Theun National Protected Area, Laos. The 'central cluster' is the distribution area of red- and grey-shanked douc langurs which is reflected in the species composition of the seizures. In 15 cases 34 red-shanked doucs were confiscated, in 7 cases 43 grey-shanked doucs and in 3 cases 144 black-shanked doucs, including the absolute largest seizure with 108 carcasses. Numerous cases document the use of douc langur for the preparation of "bone glue" as a traditional medicine.

For illustrative purposes, the text box summarizes the largest seizure of black shanked douc carcasses.

Largest trading case seizure

On 20th March 2013 one person bought 26 frozen black-shanked douc langurs and 82 skeletons of black-shanked douc langurs in the Dak Mil District, Dak Nong Province and in Buon Ma Thuot City, Dak Lak Province for 5 million VND per carcass with the intention to sell it in Kon Tum Province. He hired a car to transport the carcasses but was caught by police when he passed through Gia Lai Province.

Southern Cluster

All seizures in the southern cluster cases comprised black-shanked doucs. Multiple cases involve evidence of crossing the border into Cambodia for hunting to bring douc langurs from Cambodia into Vietnam. Binh Phuoc Province is where the most significant crossover of black shanked douc langur occurs, as it shares a border with Cambodia and is close to Seima Biodiversity Conservation area in Cambodia. This protected area contains the largest recorded population of black-shanked douc langurs. Dak Lak was the reported purchase location for the douc langur and is a place of interest with regards to understanding the douc langur trade. In total, 30 cases were recorded with 174 black-shanked doucs and 2 unidentified carcasses, but most probably also belonging to this species. Interesting is the seizure of one grey-shanked douc in Binh Duong Province and one red-shanked douc in Ho Chi Minh City as the doucs were being transported southwards from central Vietnam.

Development of the douc langur trade over the examined period

The confiscation of douc langurs across a period of 11 years does not demonstrate a clear trend (Fig. 2). The extremely high numbers in 2012 and 2013 reflect the confiscation of very large single shipments. It is does exclude that other large single shipments occurred during the years that were not detected. The detected and confiscated douc langurs during the last decade – with the exception of large single shipments - were between 30 and 50 individuals. This is roughly supported by confiscations figures for live animals, most of which end up at the Endangered Primate Rescue Center in Cuc Phuong National Park and are published yearly in the *Vietnamese Journal of Primatology*. During the eleven years period the center received 40 confiscated douc langurs, 17 red-shanked doucs, 20 grey-shanked doucs and 3 black-shanked doucs. Included are 24 juveniles which are still dependent on female care. It means the females of these juveniles were killed. However, despite the observed fluctuations, comparison with the data presented by Beyle et al. (2014) shows there has been an increase of the douc langur trade since 2008.

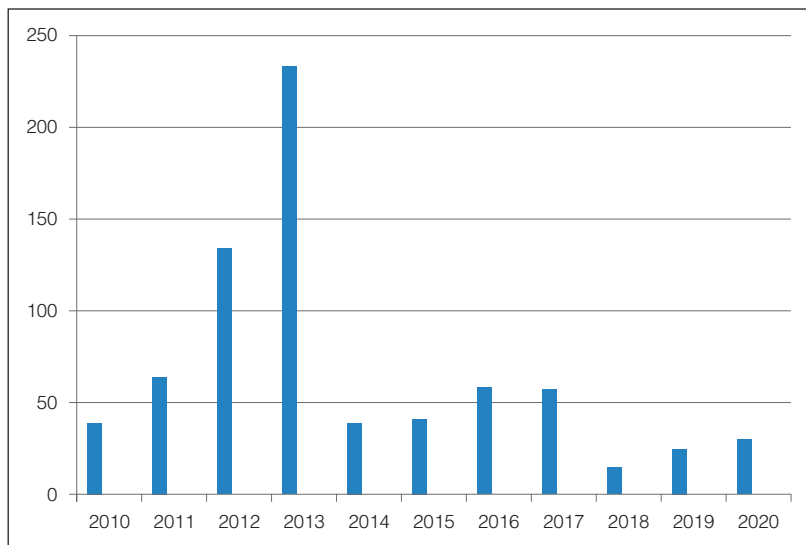


Fig.2. Number of seized douc langurs per year. The largest number in 2012 and 2013 is resulted in very large single seizures. In 2012 three seizures with more than 20 individuals and in March 2013 the largest seizure ever with 108 black-shanked douc langur carcasses.

Discussion

The black-shanked douc langur population in Vietnam is fragmented and relatively small compared to the population in Cambodia. The analysis of the 46 cases including black-shanked douc langurs shows the origin from southern Vietnam and eastern Cambodia. The fact that an estimated population in the Seima Biodiversity Conservation Area, Cambodia comprises about 40,000 individuals, strongly suggests entry points into southern Vietnam as trafficking hotspots. Seizures of black-shanked douc langurs in the northern provinces, especially Cao Bang, indicate traffickers are transiting the entire length of the country. There is evidence that black-shanked douc langurs are transported from Cambodia into Vietnam, and then moved north to Cao Bang Province towards China.

The northern central provinces of Vietnam are the distribution area for red-shanked douc langurs and are also close to the largest population of the species in Nakai-Nam Theun National Protected Area, Laos which provides a considerable number of animals to the trade. The findings related to a total of 69 grey-shanked douc langurs seized is also noteworthy. The largest seizure with 30 carcasses occurred in Kon Tum Province. Grey-shanked douc langurs also made an appearance in one Hanoi case and one case in Cao Bang.

The data analysis supports the conclusion that there are four hotspots in Vietnam. First - Binh Phuoc Province is the beginning of a trade route. Second - Kon Tum and Gia Lai Provinces operates as a trading centre for the southern provinces. These findings are based on the distribution of the seizures, and by case file data indicating the direction the subjects were heading to and/or statements made by the subjects involved. Third - the central provinces Ha Tinh, Quang Binh and Quang Tri are the main providers for red-shanked doucs to the illegal trade. Fourth - Hanoi, Bac Kan and Cao Bang form a trading corridor to China (Fig. 3).

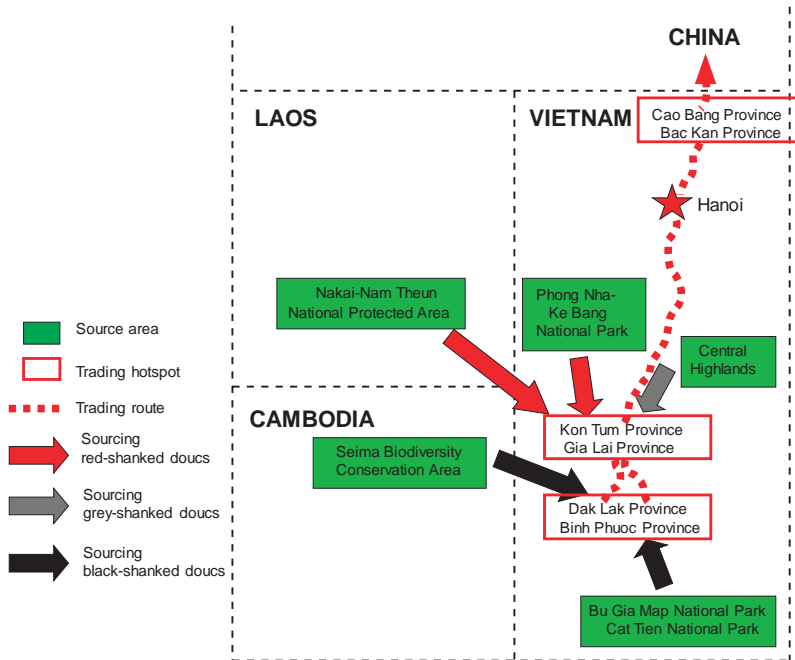


Fig.3. Schematic diagram about the douc langur sources and the main trade routes.

The appearance of confiscated douc langurs and its planned use

ENV trading case files include details regarding the form langurs were in at the point of seizure, expressed in the cases in the following terms:

- live animals
- dried and smoked langurs
- bones and skeletons
- frozen animals

Live animals are normally confiscated as single individuals (Fig. 4). A relatively high number are infants which are still dependent on female care. If a female with an infant is shot, the hunters or traders will typically try to sell the young one alive. The chance of survival for these infants is nonexistent, unless the young animal ends up at the Endangered Primate Rescue Center in Cuc Phuong National Park or at the Endangered Primate Species Centre in Cat Tien National Park (Fig. 5).



Fig.4. Adult male grey-shanked douc langur (*Pygathrix cinerea*) confiscated on the illegal trade. Photo: Voice of Vietnam.



Fig.5. Red-shanked douc langur infant before confiscation. Animals in this age don't have a chance to survive without very special food and care. Photo: Tilo Nadler.

All forms of douc langur carcasses in the trade – dried, smoked, frozen or the animal's bones – are used solely for the preparation of traditional medicine, especially to produce 'bone glue' (Fig.6). However, 'bone glue' is not prepared locally for distribution. Instead, the body parts are transported and distributed before they are processed. The reason for this practice is mistrust on the part of traders and end point consumers that bones from species of animals other than rare douc langurs may be substituted. Hence, 'bone glue' will only be accepted where there is faith in the product's authenticity. The price for 'bone glue' is about 4 to 5 million VND/kg (170 to 220 USD).



Fig.6. Confiscated red-shanked douc langur (*Pygathrix nemaeus*) hunted in Bach Ma National Park, Thua Thien-Hue Province. Photo: Bach Ma National Park.

The cases also provided evidence that douc langurs are used for taxidermy. One case involved illegal taxidermy and the seizure involved 13 stuffed animals and one black-shanked douc langur skin. There is an increasing demand of stuffed animals, despite the poor quality of the taxidermic work (Fig. 7).



Fig.7. Two stuffed grey-shanked douc langurs (*Pygathrix cinerea*) as decoration in a local restaurant. Photo: Tilo Nadler.

Recommendations

The present case study highlights that urgent actions are required to prevent the imminent extinction of all three critically endangered douc langur species. We urge implementation of the following broad strategies:

- Coordinated and collaborative enforcement activities between border police and enforcement authorities to detect and prevent hunting and trade, especially in:
 - o border areas close to Cambodia's Seima Biodiversity Conservation area (e.g. in Binh Phuoc Province) and close to the Laos Nakai-Nam Theun National Protected Area in central Vietnam.

- o trading hotspots Binh Phuoc, Gia Lai, Kon Tum, and Cao Bang Provinces in Vietnam.
- Community awareness and educational programs aiming at behavioral change, with priority in the identified trading hotspots and border areas.
- Clear elucidation about the laws and the heavy penalties for violations of the wildlife protection laws, given that the illegal wildlife trade is still broadly considered as a relatively low-risk, high-profit activity.
- The involvement of traditional medicine practitioners to support law enforcement as well as the expungement of widespread beliefs and customs associated with the purported benefits of traditional medicine derived from wild animals.

Conclusions

The hunting and trading of all three 'Critically Endangered' douc langur species is occurring at an alarming rate. It is reasonable to assume that the real number of douc langurs in the illegal trade is many times higher than the confiscations demonstrate. This is dramatic pressure on the existing populations, even for larger populations like the black-shanked douc langurs in Seima Biodiversity Conservation Area, Cambodia and the red-shanked douc langur population in Nakai-Nam Theun National Protected Area, Laos. The trend and continuously high level of confiscations also show that the current measures and activities are not sufficient to combat this illegal trade.

The methods developed and applied within this case file analysis may have utility in comparable research relating to other endangered species of fauna traded and consumed in Vietnam and across its borders.

Acknowledgements

The first author acknowledges and thanks Education for Nature Vietnam staff for their support and for sharing their expertise so generously. Sincere thanks and appreciation also go to Nguyen Thi Thùy Dung and Reem Lascelles for their excellent research assistance. A major part of this paper is based on a project funded by a Central Queensland University New Staff Funding Grant: grant number RSH4949 to which Education for Nature Vietnam made in kind contributions. Ethics approval number 0000021633.

References

- Beyle J, Nguyen Van Quan, Hendrie D & Nadler T** (2014): Primates in the illegal wildlife trade in Vietnam. In: Nadler T & Brockman D (eds.): Primates of Vietnam; pp. 43-50. Endangered Primate Rescue Center, Vietnam.
- Bui Van Tuan, Nguyen Ai Tam, Tran Huu Vy, Ha Thang Long, Nguyen Thi Thu Thao, La Van Phung, Hoang Quoc Huy, Nguyen Van Huan & Nadler T** (2019): Discovery of isolated populations of the 'Critically Endangered' grey-shanked douc langur (*Pygathrix cinerea*) in Quang Nam Province. Vietnamese J. Primatol. 3(1), 19-25.
- Bui TV, Ha LT, Tran VH, Nguyen TA, Hoang HQ, Hoang DM & Hoang CV** (2018): Using distance sampling to estimate population density of the douc langur (*Pygathrix nemaeus*) in Son Tra Peninsula. Proc. 27th Congress of the Int. Primatol. Society.
- Cat Tien National Park** (2019): Report on population monitoring of black-shanked douc langurs (*Pygathrix nigripes*) at Cat Tien National Park. (Unpubl. report in Vietnamese).
- Clements T, Rawson B, Pollard E, Nut Meng Hor & An Dara** (2008): Long-term Monitoring of Black-shanked Douc Langur (*Pygathrix nigripes*) and Yellow-cheeked Crested Gibbon (*Nomascus gabriellae*) in Seima Biodiversity Conservation Area, Cambodia. Primate Eye 96. Special Issue. Abstract 22nd Congress of the Int. Primatol. Society, p. 275 (Abstract 769).
- Coudrat CNZ** (2013): Primate conservation in Theun National Protected Area, central-eastern Laos. Abstract. Presentation at the 3rd International Conference Conservation of Primates in Indochina, 8-12th October, Cuc Phuong National Park, Vietnam.
- Coudrat CNZ, Le Khac Quyet, Hoang Minh Duc, Phiaphalath P, Rawson BM, Nadler T, Ulibarri L & Duckworth JW** (2020): *Pygathrix nemaeus*. The IUCN Red List of Threatened Species.
- Coudrat CNZ, Nanthavong C & Nekaris KAI** (2013): Conservation of the red-shanked douc *Pygathrix nemaeus* in Lao People's Democratic Republic: density estimation based on distance sampling and habitat suitability Modeling. Oryx 48(4), 540-547.
- Estrada A, Garber P, Rylands AB, Roos C, Fernandez-Duque E, Di Fiore A, Nekaris KAI, Nijman V, Heymann E, Lambert JE, Rovero F, Barelli C, Setchell JM, Gillespie TR, Mittermeier RA, Arregoitia LV, de Guinea M, Gouveia S, Dobrovolski R, Shanee S, Shanee N, Boyle SA, Fuentes A, McKinnon K, Amato KR, Meyer ALS, Wich S, Sussman RW, Pan R, Kone I & Li B** (2017): Impending extinction crisis of the world's primates: Why primates matter. Science Advances Vol.3(1).

- Ha Thang Long, Hoang Minh Duc, Le Khac Quyet, Rawson BM, Nadler T & Covert H** (2020): *Pygathrix cinerea*. The IUCN Red List of Threatened Species.
- Haus T, Vogt M, Forster B, Vu Ngoc Thanh & Ziegler T** (2009): Distribution and Population Densities of Diurnal Primates in the Karst Forests of Phong Nha Ke Bang National Park, Quang Binh Province, Central Vietnam. *Int. J. Primatol.* 30, 301-312.
- Hoang Minh Duc** (2007): Ecology and conservation status of the black-shanked douc (*Pygathrix nigripes*) in Nui Chua and Phuoc Binh National Parks, Ninh Thuan Province, Vietnam. PhD thesis, University of Queensland, Australia.
- Hoang Minh Duc, Le Khac Quyet, Rawson BM, O'Brien J & Covert H** (2021): *Pygathrix nigripes*. The IUCN Red List of Threatened Species.
- Hoang Minh Duc & Ly Ngoc Sam** (2008): Distribution of Black-shanked Douc Langur in Nui Chua National Park, Ninh Thuan Province, Vietnam. *Australasian Primatol.* 17(2), 11-19.
- Krishnasamy K & Zavagli M** (2020): Southeast Asia – the Heart of Wildlife Trade. TRAFFIC, Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia.
- Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB & Kent J** (2000): Biodiversity for conservation priorities. *Nature* 403, 853-858.
- Nadler T** (1997): A new subspecies of douc langur. *Pygathrix nemaesus cinereus* ssp. *Zool. Garten N.F.* 67(4), 165-176.
- Nadler T** (2010): Status of Vietnamese Primates - Complements and Revisions. In: Nadler T, Rawson BM & Van Ngoc Thinh (eds): Conservation of Primates in Indochina; pp. 3-16. Frankfurt Zoological Society and Conservation International, Hanoi.
- Nadler T** (2014): Primates in traditional Medicine in Vietnam. In: Nadler T & Brockman D (eds.): Primates of Vietnam; pp. 51-54. Endangered Primate Rescue Center, Vietnam.
- Nadler T & Brockman D** (2014): Primates of Vietnam. Endangered Primate Rescue Center, Vietnam.
- Nadler T, Momberg F, Nguyen Xuan Dang & Lormee N** (2003): Vietnam Primate Conservation Status Review 2002. Part 2: Leaf Monkeys. Fauna & Flora International and Frankfurt Zoological Society, Hanoi.
- Nadler T & Roos C** (2017): Impending extinction crisis of the world's primates – Implications for Vietnam. *Vietnamese J. Primatol.* 2(5), 25-35.
- Nguyen Thanh Cao** (2016): Vietnam a 'supermarket' for illegal wildlife trade. AFP 15th November
- Pollard E, Clements T, Nut Meng Hor, Sok Ko & Rawson B** (2007): Status and Conservation of Globally Threatened Primates in the Seima Biodiversity Conservation Area, Cambodia. Wildlife Conservation Society, Phnom Penh.
- Rawson BM & Roos C** (2008): A new primate species record for Cambodia: *Pygathrix nemaesus*. *Cambodian J. Nat. Hist.* 1, 7-11.
- Wildlife Conservation Society Vietnam Program** (2018): A situational review of wildlife crime and law enforcement response in Viet Nam, 2013 – 2017. Vietnam Program Review. (Unpubl. report).

Population density of the grey-shanked douc langur (*Pygathrix cinerea*) in Kon Ka Kinh National Park and implications for conservation

Ha Thang Long¹, Nguyen Van Tay¹, Nguyen Ai Tam¹, Nguyen Thi Kim Yen¹ & Ngo Van Thang²

¹ Frankfurt Zoological Society in Vietnam, 60 Thanh Vinh 2, Tho Quang, Son Tra District, Danang City. Corresponding author: Ha Thang Long <hathanglong@fzs.org>

² Kon Ka Kinh National Park, Ayun Village, Mang Yang District, Gia Lai Province.

Key words: grey-shanked douc langur, *Pygathrix cinerea*, population density, conservation

Summary

The population of the grey-shanked douc langur (*Pygathrix cinerea*) in Kon Ka Kinh National Park was measured using the distance sampling method. Field research was carried out from May to June 2020. Twenty-four line-transects (average 3.8 km in length) were set up across different types of forests at elevations from 950 m to 1400 m. Each transect was surveyed repeatedly three times on three consecutive days. Distance software version 7.3 was used to analyse the population density of the grey-shanked douc langurs. The result showed that the population density is 1.18 group/km². It is estimated that there are 248 (\pm 107) groups with 1,557 (\pm 696) individuals in the national park. With this updated result, Kon Ka Kinh National Park is home to the largest population of the grey-shanked douc langur in Vietnam. The main threat to the langurs is hunting by homemade guns. It is essential to improve law enforcement and ranger patrolling to stop illegal activities.

Ước lượng mật độ quần thể của loài chà vá chân xám (*Pygathrix cinerea*) bằng phương pháp lấy mẫu khoảng cách (distance sampling) và gợi ý cho hoạt động bảo tồn tại vườn quốc gia Kon Ka Kinh, Việt Nam

Tóm tắt

Quần thể voọc chà vá chân xám (*Pygathrix cinerea*) được ước lượng bằng phương pháp lấy mẫu khoảng cách (Distance sampling). Nghiên cứu thực địa được thực hiện từ tháng 5 đến tháng 6 năm 2020. 24 tuyến điều tra với độ dài trung bình 3,8 km được thiết lập trên các sinh cảnh rừng khác nhau từ 950 m đến 1400m. Mỗi tuyến điều tra được khảo sát lặp lại ba lần trong ba ngày liên tiếp. Phần mềm khoảng cách phiên bản 7.3 được sử dụng để phân tích mật độ quần thể của voọc chà vá chân xám. Kết quả cho thấy mật độ là 1,18 đàn trên 1 km². Ước tính có khoảng 248,3 (\pm 107,3) đàn với khoảng 1557 (\pm 696,2) cá thể trong vườn quốc gia Kon Ka Kinh. Với số liệu cập nhật này, Vườn quốc gia Kon Ka Kinh là nơi sinh sống của quần thể voọc chà vá chân xám lớn nhất Việt Nam. Mối đe dọa chính đối với GSD là săn bắn bằng súng tự chế. Điều cần thiết là phải tăng cường hiệu quả việc thực thi pháp luật và tuần tra rừng để ngăn chặn các hoạt động săn bắn bất hợp pháp.

Introduction

Kon Ka Kinh National Park is located in northern Gia Lai Province on the Kon Tum Plateau and covers an area of 41.780 ha. The park is known as a global priority area for biodiversity conservation (WWF 2010) and harbours six primate species: pygmy loris *Nycticebus pygmaeus*, stump-tailed macaque *Macaca arctoides*, rhesus macaque *Macaca mulatta*, pig-tailed macaque *Macaca leonina*, northern yellow-cheeked gibbon *Nomascus annamensis* and grey-shanked douc langur *Pygathrix cinerea*.

The grey-shanked douc langur is listed as 'Critically Endangered' on the IUCN Red List of Threatened Species (Ha Thang Long et al. 2020). The species is restricted to the central coastal area and the Central Highlands of Vietnam (from 14° 30'N to 15° 38'N). The distribution range includes

six provinces in Vietnam: Quang Nam, Quang Ngai, Kon Tum, Binh Dinh, Gia Lai and Phu Yen. The population of the species globally is estimated of about 2.000 individuals. (Ha Thang Long et al. 2020).

Larger populations exist in:

Quang Nam Province

- Hon Mo Forest, Nong Son District with 173 observed individuals (Tu Van Khanh et al. 2009)
- Tam My Tay Forest, Nui Thanh District with about 65 individuals (Bui Van Tuan et al. 2019)

Gia Lai Province

- Kon Ka Kinh National Park a population of 860-2250 individuals
- Kon Chu Rang Nature Reserve a population of 100-120 individuals (Ha Thang Long 2015)

Kon Tum Province

- Kon Plong Forest a population of about 500 individuals (Wearn et al. 2021)

Quang Ngai Province

- Fragmented populations with a total of 32 groups with 192-220 individuals (Nguyen Thanh Tuan et al. 2010).

However, most of the data on population in the surveyed areas is based on direct count on the groups and individuals. And therefore, the real population abundant is probably under estimated.

Since 2010, a long-term project funded by Frankfurt Zoological Society to conserve the forest and biodiversity of the Kon Ka Kinh National Park has been in place. One of the objectives is the conservation of the grey-shanked douc langurs. Necessary activities to protect the species were conducted such as applying the SMART program on forest patrolling and monitoring of endangered species including the grey-shanked douc langurs and raising awareness of local people on protection the species and the habitat (Ha Thang Long 2020). A part of the project was also to obtain a clearer picture about the population of the grey-shanked douc langurs in Kon Ka Kinh National Park. The population density of the grey-shanked douc langurs should be evaluated by the distance sampling method to provide a background for conservation and protection activities. This method has been used for the closely related red-shanked douc langur (*Pygathrix nemaeus*) (Coudrat et al. 2013).

Methods

Location and description of study site

Kon Ka Kinh National Park (14°09' to 14°30' N; 108°16' to 108°28' E) comprises 33,500 ha of intact natural forest, accounting for 80% of the total area. The park has a large range of mountain evergreen forest across 700 m asl to the highest point the Kon Ka Kinh Mountain at 1,784 m asl. The Southwest area with evergreen forest is below 700 m asl. The park's terrain is characterized by high, steep mountains in the Northeast and flatter area in the Southwest. The average rainfall of the park is between 2,000 and 2,500 mm per year. The monthly average temperature ranges between 210 and 250 (Kon Ka Kinh National Park 2021).

Data collection

Twenty-four line transects were set up in forests across different habitat types ranging from 950 m to 1400 m (Fig. 1). The distance between line transects is 2 km. Surveys were carried out in the dry season (May to June 2020). We conducted field surveys from 6:00 am to 11:30 am, and continued from 1:30 pm to 6:30 pm. These are the most active time period of the langurs and thus they are more likely to be detected (Nguyen Thi Tinh et al. 2012). Surveys were repeated 3 times for 3 consecutive days on each transect.

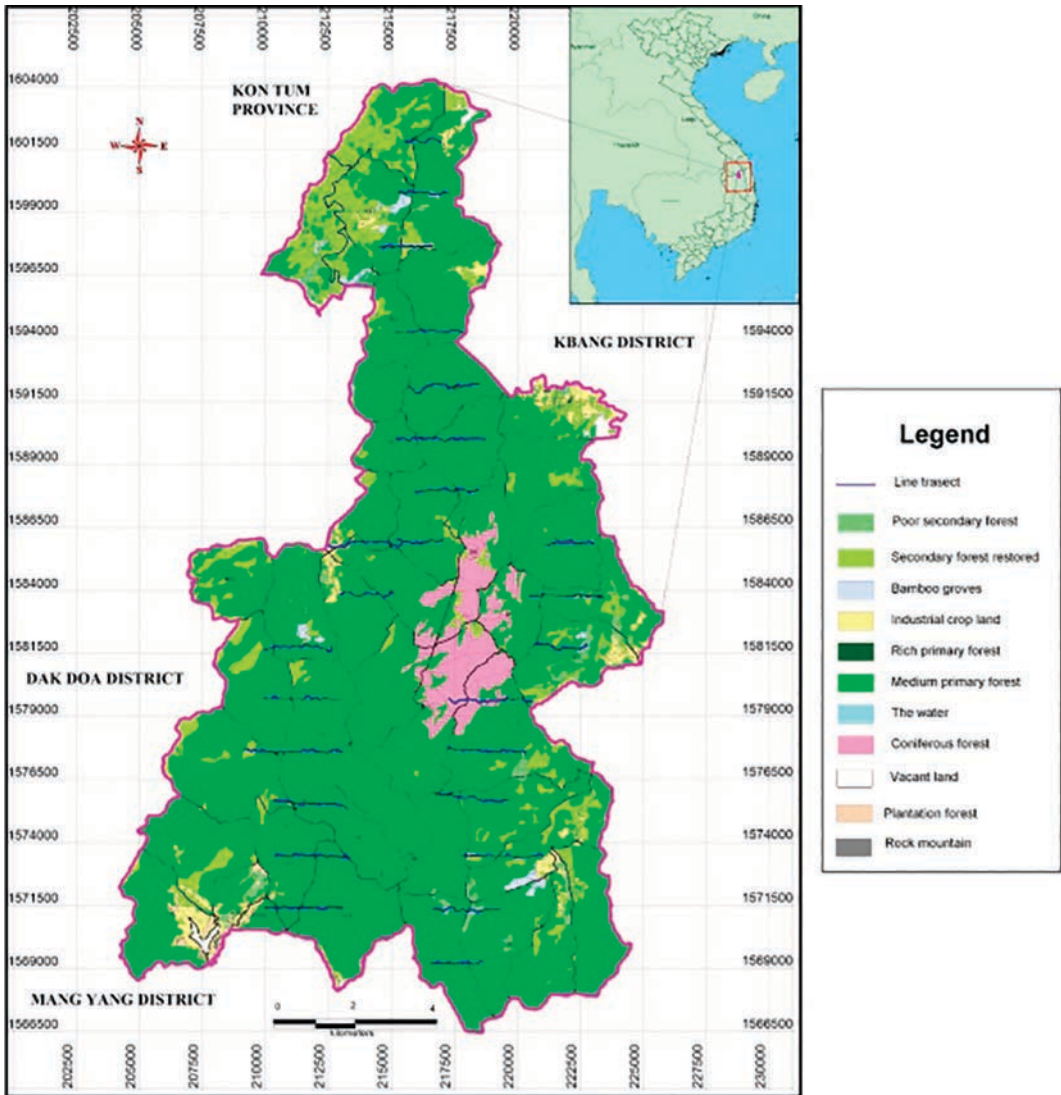


Fig.1. Locations of the twenty-four line-transects used to conduct surveys on the grey-shanked douc langurs in Kon Ka Kinh National Park.

On each transect, a survey team consisted of three people (one expert, one ranger, and one local guide). All members were trained on field data collection methods. In the field, the survey group walked 0.5 to 1 km per hour. We observed and recorded direct and indirect occurrences of the grey-shanked douc langurs. The surveyors used binoculars to search for the langurs. The field researcher recorded date, start and ending time, transect identity, weather conditions, and human activities of each line transect. If langurs were detected, the surveyors determined and recorded group size, group structure, vegetation features, and GPS coordinates. To analyze the population density we measured the radial distance and the angle relative to the transect line to each first sighted individual via a range finder and compass (Buckland et al. 2010).

Data analysis

To run the data analysis we used DISTANCE 7.3 (Buckland et al. 2015). In order to remove the groups that may have been double counts, we compared the group size and the group structure to distinguish the observed groups. In total, we recorded 21 distinctive groups in 24 transects. The

mean group size was calculated. Each transect was replicated 3 times, therefore the total of transect length multiplied by the number of replications (Buckland et al. 2010). We plotted the perpendicular distances data in a frequency histogram of 10 m intervals. There are 6 data groups which range between 0-15.8 m, and the longest perpendicular distance is 94.9 m. The cut-off intervals are 15.8 m, 31.6 m, 47.4 m, 63.2 m, 79.1 m and 94.9 m.

We ran six models with different combinations of key function and adjustment terms: (1) half-normal + cosine, (2) half-normal + polynomial, (3) uniform + cosine, (4) uniform + polynomial, (5) half-normal + Hermite, and (6) uniform + Hermite. We selected the best model according to the Akaike information criterion (AIC), and the coefficient of variation of the group density estimates (Buckland et al. 2001) (Table 1). The suitable habitat area of the grey-shanked douc langurs we measured using the minimum convex polygon method (MCP) (IUCN 1994, Burgman & Fox 2003). To determine the suitable habitat area of the grey-shanked douc langurs we used records of occurrence in this study and our yearly monitoring data of the langurs. The data of occurrence of the langurs was entered in the software ArcGis 10.2 to measure the suitable habitat area for the species.

Table 1. Distance analysis results for different models, calculated with 21 observations (n=21) with group density estimate, probability of detection, coefficient of variation, and AIC value (Akaike Information Criterion).

Model (key function + adjustment term)	Group density estimate (per km²)	Probability of detection	Coefficient of Variation	AIC
Half-normal + cosine	1.18	0.33	0.447	177.78
Half-normal + polynomial	0.91	0.43	0.423	178.19
Uniform + cosine	0.98	0.40	0.450	177.18
Uniform + polynomial	0.96	0.41	0.451	179.32
Half-normal + Hermite	0.91	0.43	0.428	178.19
Uniform + Hermite	0.76	0.52	0.483	180.21

Results

Using the minimum convex polygon (MCP) method to estimate suitable habitat of the grey-shanked douc langur in Kon Ka Kinh National Park shows that there are 210.44 km² of suitable habitat, equivalent to 51% of the whole park. (Fig. 2).

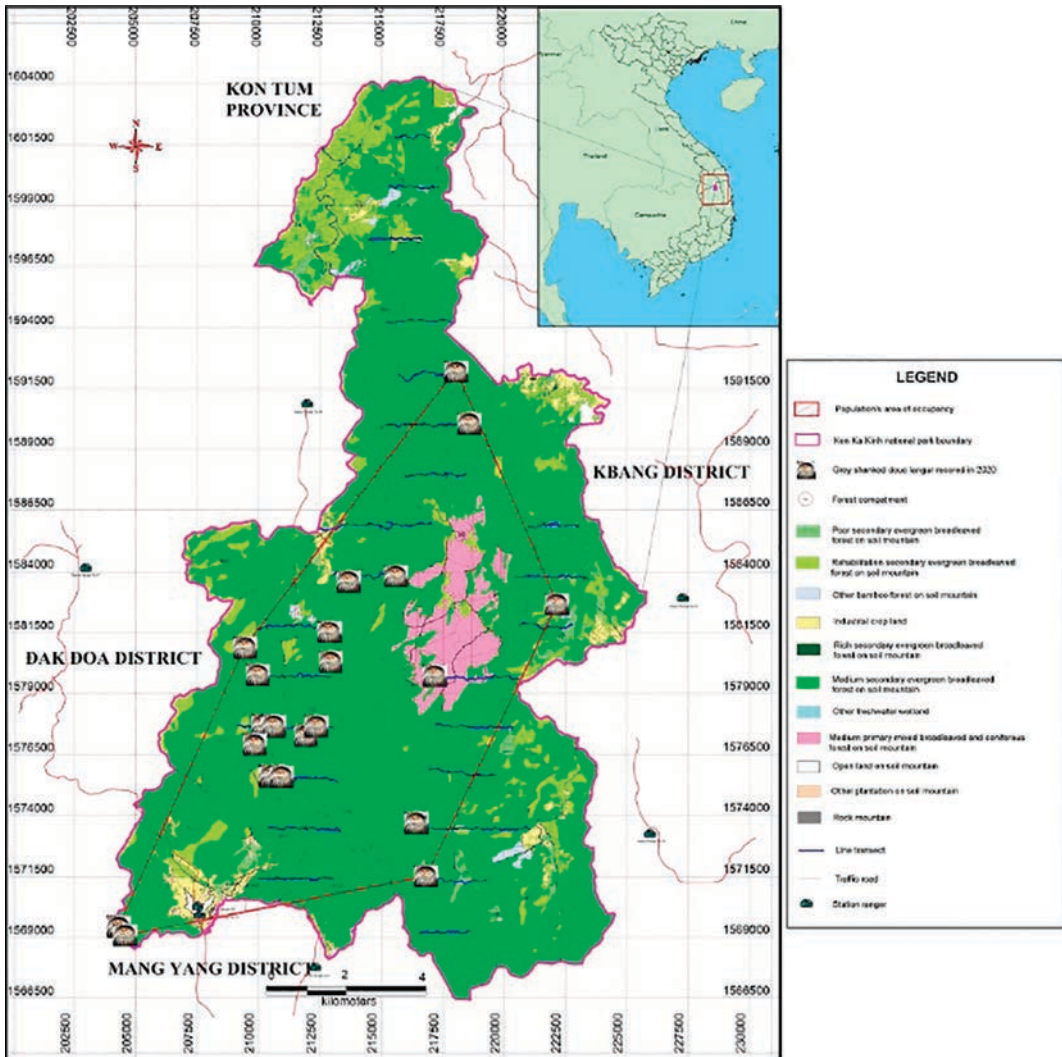


Fig.2. The Minimum Convex Polygon (MCP) of suitable habitat of the grey-shanked douc langurs in the Kon Ka Kinh National Park.

According to DISTANCE 7.3 the model that best fits the field data is half normal key function and cosine adjustment. This model suggests that there are $1.18 (\pm 0.51)$ groups per km^2 . The group size mean is $6.23 (\pm 0.74)$ individuals. The estimated number of groups in the park is $248.3 (\pm 107.3)$ with $1,557 (\pm 696.2)$ individuals (Table 2).

Table 2. Distance analysis result with estimated group density and individual density of the grey-shanked douc langurs with standard error (SE) n=21. Ds: Density of groups; E(s): Estimated of group size; D: Density of individuals; N: Estimate of individuals in the suitable habitat (210.44 km²).

Parameter	Point Estimate	Standard Error	Percent Coef. of Variation	95% percent Confidence Interval	
Ds	1.1863	0.5112	43.10	0.5120	2.7485
E(s)	6.2381	0.7429	11.91	4.8701	7.9903
D	7.4004	3.3089	44.71	3.1168	17.571
N	1557.0	696.18	44.71	656.00	3698.0

Discussion

Distribution and habitat disturbance

Human disturbance is an important factor influencing primate habitat use and distribution patterns. During this study 90% of observations (19/21) of the grey-shanked douc langurs were made in the restricted zone of the park. This indicates that the main distribution area of the langurs is in the areas with less human disturbances. 71% of observations (15/21) were made in the western part of the park while only 29% (6/21) were in the eastern part. This difference might reflect different levels of human disturbance. During the survey time, we recorded six types of human disturbances that include: gun fire, logging camps, logged trees, traps, forest encroachment, and people in the forest. There is more human disturbance in the eastern part of the park than in the western part in all six types. This is consistent with what has been reported for Francois' langurs (*Trachypithecus francoisi*) in Fusui, China avoids human disturbance in the bottom of valleys, they prefer to feed in the middle zone of forest where less disturbances (Huang et al. 2008) are. Similarly, the black-crested gibbon (*Nomascus concolor*) in Dazhaizi central Yunnan, China also rarely ranged to the forest below 2,100 m where human disturbance mostly occurred (Fan & Jian 2010).

Population of the grey-shanked douc langur in Vietnam

The total and global population of the grey-shanked douc langur has been estimated at about 2,000 individuals (Ha Thang Long et al. 2020). This species is best known from sub-populations in Vietnam, but there is also information of a probably small population in the Southeast corner of Laos and the Northeast corner of Cambodia (Rawson & Roos 2008). In recent years, more sub-populations of the species have been discovered in Vietnam including 65 individuals in Tam My Tay Forest, Quang Nam Province (Bui Van Tuan et al. 2019), about 500 individuals in Kon Plong Forest (Wearn et al. 2021), and probably a population in Phu Yen Province (Tran Van Bang, pers. comm.). Many sub-populations of the species have not been monitored nor have there been systematically size estimates. Therefore, the real number of the remaining grey-shanked douc langurs is still unknown. This study is the first effort to measure population size of the species using the distance sampling method. The outcome of this survey suggests that the remaining population in the Kon Ka Kinh National Park is much higher than it was previously estimated. In the past the population in both Kon Ka Kinh National Park and Kon Chu Rang Nature Reserve together was estimated of 10 groups and 139-150 individuals, based on direct count (Ha Thang Long, 2007).

Given the differences between direct observation and the distance sampling methods the population of the grey-shanked douc langurs in Vietnam is likely to be around 3,000 individuals.

The Long-term conservation project in the Kon Ka Kinh National Park and its effects

Since 2010 the Frankfurt Zoological Society has implemented a project to preserve the forest and wildlife in the park. The grey-shanked douc langur protection is among the objectives of the project. Since 2016 the park rangers have employed the SMART program in their forest patrol activity. Information on wildlife is recorded during the monthly forest patrol trips. In 2020, 272 traps and 35 logging camps were found and destroyed, and 17 homemade guns and firearms were confiscated (Ha Thang Long 2020). It is obvious that the forest patrol program has reduced the threats to the grey-shanked douc langurs. Pusey et al. (2007) stated that a long-term research projects can provide important conservation benefits, not only through research specifically focused on conservation problems, but also from various incidental benefits.

Acknowledgements

We would like to thank Nguyen Van Hoan, director of Kon Ka Kinh National Park for his support of the field survey. We also thank the park rangers of nine stations for their friendship and support during the field work. Finally, we are grateful to the support and cooperation of local people in the De Kgieng and Hiar Villages for saving the grey-shanked douc langurs.

References

- Buckland ST, Anderson ST, Burnham KP, Laake JL, Borchers SDL & Thomas L** (2001): Introduction to Distance Sampling: Estimating Abundance of Biological Populations. Oxford University Press, Oxford, UK.
- Buckland ST, Plumptre AJ, Thomas L & Rexstad EA** (2010): Design and analysis of line transect surveys for primates. *Int. J. Primatol.* 31, 833–847.
- Buckland ST, Rexstad EA, Marques TA & Oedekoven CS** (2015): Distance Sampling: Methods and Applications. Springer.
- Bui Van Tuan, Nguyen Ai Tam, Tran Huu Vy, Ha Thang Long, Nguyen Thi Thu Thao, Tran Kim Phung, Hoang Quoc Huy, Pham Minh Huan & Nadler T** (2019): Discovery of isolated populations of the 'Critically Endangered' grey-shanked douc langur (*Pygathrix cinerea*) in Quang Nam Province, Vietnam. *Vietnamese J. Primatol.* 3(1), 19-25.
- Coudrat CNZ, Nanthavong C & Nekaris KAI** (2013): Conservation of the red-shanked douc *Pygathrix nemaeus* in Lao People's Democratic Republic: density estimates based on distance sampling and habitat suitability modelling. *Oryx* 48(4), 540-547.
- Fan PF & Jiang XL** (2010): Altitudinal Ranging of Black-Crested Gibbons at Mt. Wuliang, Yunnan: Effects of Food Distribution, Temperature and Human Disturbance. *Folia Primatol.* 81, 1-9.
- Ha Thang Long** (2007): Distribution, population and conservation status of the grey-shanked douc (*Pygathrix cinerea*) in Gia Lai Province, Central Highlands of Vietnam. *Vietnamese J. Primatol.* 1(1), 55-60.
- Ha Thang Long** (2009): Behavior ecology of grey-shanked douc monkeys in Viet Nam. PhD Thesis, University of Cambridge, UK.
- Ha Thang Long** (2015): Annual Internal report: Forest Protection in the Central Highlands of Vietnam, the Kon Ka Kinh National Park. Frankfurt Zoological Society, Danang. (Unpubl. report).
- Ha Thang Long** (2020): Annual Internal report: Forest Protection in the Central Highlands of Vietnam, the Kon Ka Kinh National Park. Frankfurt Zoological Society, Danang. (Unpubl. report).
- Ha Thang Long, Hoang Minh Duc, Le Khac Quyet, Rawson BM, Nadler T & Covert H** (2020): *Pygathrix cinerea*. The IUCN Red List of Threatened Species.
- Huang CM, Wu H, Zhou Q, Li YB & Cai XV** (2008): Feeding strategy of Francois' langur and white-headed langur at Fusui, China. *Am. J. Primatol.* 70, 320–326.
- Kon Ka Kinh National Park** (2021): An introduction to the Kon Ka Kinh National Park: Natural characteristics. <http://konkakin.gov.vn/chuyenmuc/Gioi-thieu/%C4%90ac-%C4%91iem-tu-nhien-VQG-Kon-Ka-Kinh.aspx>.
- Nguyen Thanh Tuan, Le Vu Khoi & Le Khac Quyet** (2010): New data on the distribution of grey-shanked douc langurs (*Pygathrix cinerea*) in Quang Ngai Province, Vietnam. In: Nadler T, Rawson BM & Van Ngoc Thinh (eds.): Conservation of Primates in Indochina; pp. 63-69. Frankfurt Zoological Society and Conservation International, Hanoi.
- Nguyen Thi Tinh, Ha Thang Long, Bui Van Tuan, Tran Huu Vy & Nguyen Ai Tam** (2012): The feeding behaviour and phytochemical food content of grey-shanked douc langurs (*Pygathrix cinerea*) at Kon Ka Kinh National Park, Vietnam. *Vietnamese J. of Primatol.* 2(1), 25-35.
- Pusey AE, Pintea L, Wilson L, Kamenya S & Goodall J** (2007): The Contribution of Long-Term Research at Gombe National Park to Chimpanzee Conservation. *Conservation Biology* 21(3), 623-634.
- Rawson BM & Roos C** (2008): A new primate species record for Cambodia: *Pygathrix nemaeus*. *Cambodian J. Nat. Hist.* 1, 7-11.
- Tu Van Khanh, Ho Dac Thai Hoang & Nguyen Manh Ha** (2009): Study on the grey shanked douc langur *Pygathrix cinerea* in Hon Mo Forest, Nong Son District, Quang Nam Province. *Ecological Economy J.* 31, 75-80 (In Vietnamese).
- Wearn OR, Trinh Dinh Hoang, Nguyen Quyet Tam, Dao Cong Anh, Nguyen Van Phuong, Nguyen Minh P., Le Viet Manh, Tran Ngoc Toan, Hoang Quoc Huy & Nguyen An** (2021): Myth to reality in the forests of Kon Plong: The exceptional biodiversity value of Kon Plong District, Kon Tum Province. *Fauna & Flora International – Vietnam Programme*, Hanoi
- WWF** (2010): WWF's Global Conservation Priorities. <https://d3nehc6yl9qzo4.cloudfront.net/downloads/global—200.pdf>

Lorisicola mjobergi* (Stobbe, 1913) sensu lato (Insecta, Psocodea, Phthiraptera, Ischnocera, Trichodectidae) from two *Nycticebus* species (Mammalia, Primates) from Vietnam, with notes on the genus *Lorisicola* Bedford

Eberhard Mey

Martin-Luther-Universität Halle-Wittenberg, Zentralmagazin Naturwissenschaftlicher Sammlungen, Domplatz 4, D-06108 Halle (Saale), Germany. <mey-rudolstadt@t-online.de>

Key words: Phthiraptera, Ischnocera, Trichodectidae, Felicolini, *Lyalicola* subgen. nov., Loridae, *Nycticebus pygmaeus*, *Nycticebus bengalensis*

Summary

From the Cuc Phuong National Park in North Vietnam, the occurrence of *Lorisicola mjobergi* s. l. on two new host species is presented for the first time: *Nycticebus bengalensis* Lacépède and *N. pygmaeus* Bonhote (Loridae, Lorinae). The material from both host origins cannot be sufficiently distinguished from that of *L. mjobergi* (Stobbe, 1913) ex "*Nycticebus borneanus* [?] from North Borneo" at present. Also the (poorly preserved) male of "*Trichodectes brachycephalus* Ewing" from Malaysia seems to be as conspecific with the still monotypic *Lorisicola mjobergi* s. l. as a pair collected on "*Nycticebus buku*" (= *N. coucang*) on the west coast of Sumatra. Thus, *Lorisicola* Bedford, 1936 has so far only been found on five of the 11 Asian Loris and *Nycticebus* species, while no finding of this unusual trichodectid has yet become known from the five African Angwatibos and Pottos (Loridae, Perodicticinae).

Lorisicola mjobergi s. l. is described in detail according to literature and Vietnamese material, with special attention to head morphology including chaetotaxy. At the same time, a first attempt is made to develop a setae terminology based on homology for avian and mammalian chewing lice. It can be made clear that *Lorisicola* is morphostructurally so unique within the trichodectids that it must seem absurd to place it together with *Felicola* Ewing, *Suricatoecus* Bedford and/or *Paradoxuroecus* Conci in the Tribus Felicolini Kéler, 1938, as was done after a cladistic analysis and classification presented in 1985 and remained unchallenged ever since. Several derived characters (a. o. in head shape and chaetotaxy, absence of gular plate, modified cervical sclerites, several head sutures, very large ommatidia, dorsal and ventral projection of abdominal pleurum IV, abdominal segment VII with complete tergite in ♂ and ♀, peculiar subgenital plate, simple gonapophyses lobe with 6-7 mesochaetes on the inner side, prominent male genital) clearly speak for a relative independence of *Lorisicola* (at least in a separate tribus - Lorisicolini - within the Trichodectinae Kellogg).

This new situation made it necessary to transfer all *Felicola* species (incl. "*Trichodectes malaysianus* Werneck"), which had previously been placed in *Lorisicola*, into a subgenus of their own.

Lyalicola subgen. nov. with the subgenerotype "*Felicola hercynianus* v. Kéler, 1957" is proposed for this purpose. All 11 species belonging to the new subgenus (in comb. nov.) are listed with their type hosts. The morphological similarities between *Lorisicola* and *Cebidicola* Bedford (Trichodectinae, Cebicolini), which seem to have been insufficiently considered so far, are explicitly pointed out.

* Dedicated to Tilo Nadler on his 80th birthday.

***Loricicola mjobergi* (Stobbe, 1913) sensu lato (Insecta, Psocodea, Phthiraptera, Ischnocera, Trichodectidae) từ hai loài *Nycticebus* (Mammalia, Linh trưởng) từ Việt Nam, có ghi chú thuộc chi *Loricicola* Bedford**

Tóm tắt

Tại Vườn Quốc gia Cúc Phương, miền Bắc Việt Nam, lần đầu tiên có sự xuất hiện của *Loricicola mjobergi* trên hai loài ký chủ mới: *Nycticebus bengalensis* Lacépède và *N. pygmaeus* Bonhote (Loridae, Lorinae). Mẫu vật được thu thập trên hai loài ký chủ trên không thể được phân biệt với *L. mjobergi* (Stobbe, 1913) được tìm thấy trên "*Nycticebus borneanus* [?] từ Bắc Borneo". *Loricicola mjobergi* được mô tả chi tiết theo tài liệu và tư liệu Việt Nam, đặc biệt chú ý đến hình thái của phân đầu.

Introduction

In the case of the *Loricicola*, which lives on primitive primates and is still only known in one species, it can no longer be a matter of discretion to grant it unrestricted generic status. It might well offend the taxonomic tact of any ardent mallophagologist to deny it that. Lyal (1985), however, went a step too far in his cladistic analysis of the Trichodectidae by placing *Loricicola mjobergi* together with 11 species once placed in *Felicola* and mostly originating from cats (Felidae) in one and the same genus and subgenus, *Loricicola* (*Loricicola*). This may not sound particularly exciting at first, but it does come as a surprise. Because one can easily be inclined to assume that in this case at least a secondary infestation from a cat to a monkey took place at some point in evolution. But the reverse case, i.e. a switch from monkey to cat, is hardly likely according to previous findings. This strange contrast would not change in principle if *Loricicola* were to be degraded to a subgenus of *Felicola*, as has already happened.

In the following it will have to be shown, argued and justified why *Loricicola mjobergi* is such a peculiar chewing louse living on loris, whose closer and more distant relationship is still unclear. And it is necessary to propose some nomenclatural changes in the Tribus Felicolini, into which *Loricicola* has been wrongly drawn.

Material and methods

Loricicola mjobergi s. l. has so far been reported from five Asian loris species in this order:

1. "*Nycticebus borneanus*" (= *Nycticebus* sp.?, type host) from northern Borneo (Stobbe 1913).
2. *Nycticebus coucang* (Boddaert, 1785) from Johor Lama, Malay Peninsula (Ewing 1930).
3. "*Nycticebus buku*" (= *Nycticebus coucang*) from West Coast Sumatra (Bedford 1936, Werneck 1950)
4. *Nycticebus bengalensis* (Lacépède, 1800) from North Vietnam (presented here).
5. *Nycticebus pygmaeus* Bonhote, 1907 from North Vietnam (presented here).

A deeper α -morpho-taxonomic investigation of the new *Loricicola* material could not be done here, because the indispensable type material from the genotype (*L. mjobergi*) was not available in time. To base the description of a possibly new form only on (often incomplete) literature sources seemed to me to be an avoidable risk, especially with *Loricicola mjobergi*. This deficit will be made up for in a later contribution.

The fact that Lyal (1985) limited his information on the hospitable distribution of trichodectids mainly to families and possibly orders and left out type host data to a large extent is not one of the strengths of his paper. Thus, a hint would have been welcome from which host(s) the approx. 100 ♂ and 100 ♀ of *Loricicola mjobergi* he examined originated.

The results of the body measurements on *Loricicola* are summarised in Table 1. The self-measurements were made in the established manner. Anterior head width was measured at the maximum extent of the clypeal carina, head length mediad from the lower edge of the central cibarial

sclerite (i.e. craniad of the central rhombic sclerite of the pronotum) to the tip of the head. The width of the occiput has been measured in each case with and without the protrusion of the ommatidium.

Except for the reproductions, all line drawings were made by the author. The microphotographs were made with a Keyence VHX-5000 digital microscope at the Dresden University of Applied Science, Faculty of Agriculture/Environment/Chemistry-Biodiversity/Nature Conservation in Pillnitz, Germany.

Table 1. Terminology of head setae comparing avian Ischnocera as reference (see Gustafsson & Bush 2014, Mey 1994) and some mammalian Ischnocera. Abbreviations see p. 183.

Avian Ischnocera	Mammalian Ischnocera			
	<i>Trichodectes</i> spp.	<i>Felicola subrostatus</i> (Burmeister) subgenus <i>Felicola</i>	<i>Felicola hercynianus</i> v. Kéler subgenus <i>Lyalicola</i> gen. nov.	<i>Loricicola mjobergi</i> s. l.
character	Figure 19	Figures 22-23	Figure 21	Figures 8-11
ads (each side 1)	present (1) but almost at median	present (2) but on each side at the same height one ads (as mesochaete) more	present (2) but on each side at the same height one ads (as mesochaete) more	present (2) but one ads more on each side, both microchaetae insert at the same height at a distance of twice their length
as 1-3 (each side 3)	present (3)	present (2) but as 2 absent	present (3) but as 1 submarginal at the lower edge	present (3)
avs 1-3 (each side 3)	present (3)	present (3-4)	present (3-4) but one avs more between avs 2 and 3, all standing in line	present (4) but one avs more, not standing in line
dos (0-1 or more)	present (1-2) in the ♂ 2 standing close together, in the ♀ 0-1	present (1)	absent	present (1) as Microchaete
dsms (each side 1)	present (1)	present (1) as Macrochaete	present (1) as Mesochaete	present (1) as submarginal Microchaete
mnds (each side 1)	present (1)	present (1)	present (1)	present (1)
mts (on each side mostly 5, more rarely 4, also up to 10 in Gonioididae)	present (7)	present (7)	present (7-8)	present (mostly 8, also 7 or 9)
os (each side 1-2)	present (1) marginal	present (1) marginal	present (1) submarginal	present (2) on each side marginally 2 microchaetae, anterior (os 1) dorsal, posterior (os 2) ventral
pas (each side 1)	present (2)	present (2)	present (2)	both absent
pcs (each side 1)	present	present	present	present
pns (each side 1)	present (1)	present (1)	present (1-2)	present (1)
pos (each side 1)	present	present	present	present
pts (0-1 or more)	absent	absent	absent	absent
vsms 1-2 (each side 2)	present (2)	present (2)	present (1) vsms 1 as macrochaete, but vsms 2 absent	present (2)

Type material

The whereabouts of the complete type material of “*Trichodectes mjöbergi*” is not known to me. Lectotype and/or lectoparatypes of this species have not been nomenclaturally effectively designated so far (see below Göllner-Scheiding 1973). Werneck (1950: 3) was able to examine the type series, but Stobbe’s original specimens had already been prepared in Canada balsam and newly labelled by W. Eichler (Fig. 1). “Dezeseis femeas, onze machos e cinco formas imaturas, amavelmente emprestadas pelo Dr. W. Eichler, do Museu de Berlin. Material rotulado “WEC 501, *Trichodectes mjöbergi* Stobbe, Type, ab *Nycticebus*.” [Sixteen females, eleven males and five immatures, kindly lent by Dr. W. Eichler of the Berlin Museum. Material labelled “WEC 501, *Trichodectes mjöbergi* Stobbe, Type, ab *Nycticebus*.”]. The material returned to Berlin after the war, but did not remain complete in the current holdings there after 1973. Göllner-Scheiding (1973: 39) recorded the existence of the Stobbe series of “*Trichodectes mjöbergi*”: “type (♂), allotype (♀), paratypes (1 ♂, 1 ♀)”, “10 microscope slides with several specimens each and 5 microscope slides with 1 specimen each”, on microscope slides no. 1288/11, 1 to 19, but with the irritating remark: “No information on number of animals.” The above designations “type”, “allotype” and “paratypes” have been used by Göllner-Scheiding (1973: 39), and they have no nomenclatural relevance, since they have never been published in connection with a revision of *Loricicola mjöbergi*.



Fig.1. Microscope slides of the type material of *Loricicola mjöbergi* (Stobbe, 1916) in the Berlin Museum of Natural History (cf. Eichler 1941: 393). Original labels as well as the locality card “WEC Nr. 501” are no longer available. Nowhere is there any mention of “*Cebidicola mjöbergi*” in any publication. The slides labelled in this way were available to Werneck (1950) without him commenting on them (see p. 185). He obviously tacitly replaced “*Cebidicola*” with “*Trichodectes*”. Example of problematic handling of type material. Photo: W. Mey, October 2021.

In the Berlin Museum of Natural History, where the type series of Stobbe (1913: 380) was deposited, “*T. mjöbergi*” is not listed in a type list of the “Eichler Collection” from the beginning of the 2000s. However, the species I was looking for was found under “*Cebidicola mjöbergi*”, with three individuals on three microscope slides (Fig. 1). It is probable that no further specimens of the once 16 ♂, 11 ♀ and 5 larvae type series of “*Trichodectes mjöbergi* Stobbe, 1913” exist in the Berlin Museum of Natural History. Only after the examination of the currently unavailable preserved type material can its correct designation be thought of.

With the rigorous clearing of Prof. Eichler’s workrooms in the Berlin Museum of Natural History, where he had worked since 1969, a not inconsiderable part of his scientific estate was lost after his death in February 1994. This also included numerous microscope slides of phthiraptera, as I unfortunately had to learn from my own experience, and it does not require much imagination that the loss of type material was (unconsciously) accepted in the process. From this point of view, a revision of the mallophagan type catalogue by Göllner-Scheiding (1973) is urgently needed.

“***mjöbergi, mjoebergi or mjobergi***”? According to the “International Rules of Zoological Nomenclature”, before 1985 German umlauts ü, ö and ü in dedication names had to be transcribed into ue, oe and oe. This special rule has since been dropped. In the case of the Swede Eric Mjöberg (1882 - 1938), it was and is against the rules to use the spelling *mjöbergi* or *mjoebergi* (instead of the correct *mjobergi*) or *Mjoeberginirmus* (instead of *Mjoberginirmus*) (Eichler 1989 a, b), as did Price et al. (2003) after Lyal (1986). This also applies to the same extent to the *mjobergi* epitheta of the animal louse genera *Boopia*, *Chapinia*, *Clayia*, *Laemobothrion*, *Columbicola* and *Pediculus*.

Chaetotaxy as a taxonomic-systematic character complex in the trichodectids

In the redescription of *Damalinia (Tricholipeurus) zaganseeri* Lux et al., 1997, the authors attempted to develop a terminology for head setae (of this species). In doing so, they used the head setae terminology that is already in relatively widespread use in avian ischnoceran lice (Mey 1994). This was a courageous step in this connection, because Kéler (1938) had already drafted the outlines of a special nomenclature of the chaetotaxy of the Trichodectidae, which, however, has not been taken up or even further developed since then. Kéler (1938: 418 f.) states:

“I have long noticed that the Mallophaga in general and the chewing lice of mammals in particular show great regularity in chaetotaxy. In contrast to the stigmas, the setae are characteristic of higher groups, superior to the species, and as a very constant feature they are of great taxonomic value. [...] The setae of the head and partly of the thorax are particularly constant. Those of the abdomen are partly fluctuating in number, but the setae groups are constant.” [Translation from German into English by the author.]

The setae patterns of both mammalian and avian ischnocera are similar in some details. However, the extent to which these similarities are sufficient to demonstrate homologous formations in both groups (which are to be expected per se according to their systematic position) has not yet been investigated enough to develop a common terminology for both groups. In the case of the extraordinary *Loricicola*, it is worthwhile to attempt to compare its head chaetotaxy with that of *Trichodectes* spp. and *Felicola* s. l. on the one hand, and with the terminology used today for the avian ischnocera on the other. Here, too, Kéler (1940: 35-38)¹ had already done pioneering work.

However, it will not be so easy to establish homology in chaetotaxy in avian and mammalian ischnocera, especially according to the criterion of position (Remane 1956). Even with these minute characteristics, we are dealing with a diversity and variability that is still difficult to grasp. The preliminary result compiled in Table 1, however, makes it clear enough that we should progress along this path of inferring relationships between the taxa.²

Abbreviations used

ads: anterior dorsal seta

as 1-3: anterior (marginal) setae am Clypeus

ATP: anterior tentorial pit

avs 1-3: basal clypeal setae

CC: clypeal carina

dos: dorsal occipital setae, dos 1-2 or more

dsms: dorsal submarginal seta auf Clypeus

GP: gular plate

LCS: lateral cervical sclerite

mids: mandibular seta

mts: marginal temporal setae

OCC: occipital carina

os: ocularis (1) or ocular setae 1-2

PAN: preantennal nodus

pas: preantennal seta

pcs: preconal seta

pns: postnodal seta

pos: preocularis or preocular seta

ppss: pronotal post-spiracular seta

PON: postocular nodus

PRN: preocular nodus

PST: Prostigma

PTP: posterior tentorial pit

pts: first posttemporal seta

RS: rhombic sclerite

TC: temporal carina

TMC: temporal marginal carina

VC: ventral carina

vsms 1-2: ventral submarginal seta, **1** chomaris, **2** oscularis (clypeal setae)

¹ This fundamental paper is still circulating with an incorrect year of publication (“1939”). Most recently, Mey (2009: 185-187) clarified that it was actually published in January 1940.

² On the back of the head of some avian ischnoceras (e.g. *Brueelia* complex) there are often tiny unpigmented dimples called sensilla, which are sometimes difficult to detect on prepared material (Gustafsson & Bush 2017). In other groups (e.g. *Lipeurus* s. l. and *Oxylipeurus* s. str. or *Anatoecus*) one will find fully developed setae instead of sensilla. This suggests that, figuratively speaking, we may be dealing with “sleeping setae” that have rudimentarily regained or preserved their original shape in evolution. This phenomenon should not go unnoticed in an attempt to homologate the setae dress of all ischnoceran groups.

More questionable type host of “*Trichodectes mjobergi*” and the status of “*T. brachycephalus*”

According to Stobbe (1913: 380), *Loriscicola mjobergi* is supposed to originate from “*Nycticebus borneanus*” from North Borneo, where, however, it does not occur, but only these two sympatric species live: *N. menagensis* Lydekker, 1893 and *N. kayan* Munds, Nekaris & Ford, 2013 (Nekaris 2013, 2020). Eichler (1941: 357) gives “*Nycticebus tardigradus borneanus* Lyon” as the type host of *L. mjobergi* without explanation. However, *Nycticebus tardigradus* (Linnaeus, 1758) is endemic to Sri Lanka (Ceylon) (Nekaris 2013, 2020), so it is indeed not a possible host of *L. mjobergi*. It remains to be stated that it is still unclear from which of these host species *Loriscicola mjobergi* actually originates. Thus, *Nycticebus coucang* can no longer be considered the characteristic host of *L. mjobergi*, as it is still reported in the literature (Hopkins & Clay 1952, Lyal 1987, Price et al. 2003). The species status of *Loriscicola brachycephalus* (Ewing) also needs to be re-examined.

Ewing (1930) describes “*Trichodectes brachycephalus*” after a male collected from the fur of a *Nycticebus coucang* (elsewhere it is said of the same host: “flying lemur” [sic!]) originating from Johor Lama, Malay Peninsula. Werneck (1950: 7) examined the specimen and comes to this conclusion:

“O macho holótipo de *T. brachycephalus* é um péssimo exemplar, descolorado e deformado, cujo estudo jamais poderá proporcionar senão juízo imperfeito sobre o parasito. Não permite, por exemplo, a devida observação da vesícula-penis, tão característica em *L. mjobergi*, mas deixa perceber uma linha mediana que nos parece indicar o sulco longitudinal, bordado de escamas, que este órgão possui, e duas faixas laterais, provavelmente correspondentes aos ramos da placa quitinosa da vesícula. É possível, portanto, que existam caracteres subespecíficos distinguindo os parasitos descritos por Ewing e Stobbe, embora isto não nos pareça verossímil. Mas quanto à identidade das espécies, cremos não haver a menor dúvida.”

[“The male holotype of *T. brachycephalus* is a very poor specimen, discoloured and deformed, whose study can only give an imperfect judgement on the parasite. It does not allow, for example, the proper observation of the vesicula-penis, so characteristic in *L. mjobergi*, but it allows us to perceive a median line which seems to indicate the longitudinal groove, embroidered with scales, which this organ possesses, and two lateral bands, probably corresponding to the branches of the chitinous plate of the vesicle. It is possible, therefore, that there are subspecific characters distinguishing the parasites described by Ewing and Stobbe, although this does not seem likely. But as to the identity of the species, we believe that there is not the slightest doubt.”]

According to Nekaris (2013, 2020), the ranges of *Nycticebus bengalensis* (from the north) and *N. coucang* (from the south) overlap approximately in the middle of the Malay Peninsula. The characteristic host specimen of *Loriscicola brachycephalus* clearly comes from the southern range, where both loris species do not occur together. Therefore, it can be assumed that the present Vietnamese material is of previously unstudied host origin.

Doubts about the generic assignment of “*Trichodectes mjobergi*”

After Bedford’s (1936) well-argued erection of *Loriscicola* per “*Trichodectes mjobergi*”, Hopkins (1949) seemingly unreservedly, but Werneck (1950) with “bellyache” argued for its independence. Hopkins & Clay (1952: 201) did not deviate from this insofar as they listed *Loriscicola* as a valid genus, but declared it “doubtfully distinct from *Felicola*” almost in the same breath, thus accommodating the widely presented doubts of Werneck (1950) in their own way. From a parasitophyletic point of view, Hopkins (1949: 540) had stated:

„... for the very interesting fact that *Loriscicola*, which occurs on an Asiatic lemur, and *Cebidicola*, which is found on several American members of the family Cebidae, are obviously closely related. It seems highly significant both that the Lemuroidea and Ceboidea are the two most primitive groups of the Primates after the Tupaiidae, and that those Cebidae on which *Cebidicola* occurs are precisely those which appear not to be normally infested with Anoplura. I am convinced that *Loriscicola* and *Cebidicola* are the remnants of a once very wide-spread primary infestation of the Primates with Trichodectidae, but the supposed occurrence of *Procavicola colobi* [3] on a monkey is not evidence in this connection because it is almost certainly erroneous and if correct is obviously secondary.”

Werneck (1950), who emphasised more morphological aspects in his discussion and also placed

them against the background of hospital distribution, located *L. mjobergi* in terms of relationship on the one hand close between *Cebidicola* (with three species) and "*Felicola jucci*" [= *Paradoxuroecus jucci* Conci, 1942 ex *Paguma l. larvata* (C. H. Smith, 1827)⁴ and on the other hand further between *Felicola* and *Trichodectes*. On the systematic position of *Lorisicola*, Werneck (1950: 1) details these thoughts:

"A diagnose acima representa mera tentativa e de definição do gênero *Lorisicola*, que até hoje comporta apenas uma espécie, na qual é difícil distinguir entre caracteres genéricos e específicos.

O genótipo em questão possui, em igual dose, caracteres dos gêneros *Trichodectes* e *Felicola*. Do primeiro apresenta a predominância da largura sobre o comprimento da cabeça, o acentuado dimorfismo sexual das antenas, o número de estigmas abdominais e a ausência de saliência posterior no abdômen do macho; do segundo, a forma subtriangular da região preantenal, o diminuto comprimento das cerdas e, até certo ponto, a pigmentação do abdômen. Nestas condições, talvez fosse mais acertado confundir-lo com as formas atípicas de posição genérica duvidosa que, arbitrariamente, incluímos no gênero *Felicola*.

Situa-se também entre o gênero *Felicola* ou, mais precisamente, entre *Felicola jucci* e o gênero *Cebidicola* (fig. 1). De fato, a semelhança entre esta última espécie e *L. mjobergi* é tão flagrante que nos repugna separá-los em gêneros distintos. Mas, como dissemos ao tratar da divisão genérica dos trichodectídeos, na primeira parte deste trabalho, é impossível os dividir sem incidir em absurdos semelhantes.

No entanto, e apesar do acima exposto, cumpre reconhecer que *L. mjobergi* se afasta um pouco mais das espécies características do gênero *Felicola* que *F. jucci*, não só pelo número de estigmas respiratórios abdominais, como pela pigmentação do abdômen da fêmea, pela forma das gonapófises e da região cefálica posterior às antenas. Nesta, as margens laterais convergem fortemente de diante para trás e de fora para dentro, a partir dos tubérculos oculares, tal como sucede nas espécies do gênero *Cebidicola*. Deste último gênero, *L. mjobergi* se aproxima ainda pela pigmentação abdominal da fêmea, que ocupa todo o tergito do anel correspondente ao último par de estigmas.

No momento, não podemos avaliar, com o necessário rigor, das afinidades de *L. mjobergi* para com os gêneros *Felicola* e *Cebidicola*, embora nos pareça não haver espécie mais relacionada a *mjobergi* que *F. jucci*. E este é o principal motivo que nos faz adotar o gênero *Lorisicola*, a título precário, como unidade sistemática, não convindo incluir sua única espécie num dos referidos gêneros sem perfeito conhecimento de causa. No momento, não podemos avaliar, com o necessário rigor, das afinidades de *L. mjobergi* para com os gêneros *Felicola* e *Cebidicola*, embora nos pareça não haver espécie mais relacionada a *mjobergi* que *F. jucci*. E este é o principal motivo que nos faz adotar o gênero *Lorisicola*, a título precário, como unidade sistemática, não convindo incluir sua única espécie num dos referidos gêneros sem perfeito conhecimento de causa. Tão estranho fato, de um maléfago de lemures mais se parecer a maléfagos de felinos* que aos dos macacos sulamericanos, nos impõe todas as medidas de prudência."

No momento, não podemos avaliar, com o necessário rigor, das afinidades de *L. mjobergi* para com os gêneros *Felicola* e *Cebidicola*, embora nos pareça não haver espécie mais relacionada a *mjobergi* que *F. jucci*. E este é o principal motivo que nos faz adotar o gênero *Lorisicola*, a título precário, como unidade sistemática, não convindo incluir sua única espécie num dos referidos gêneros sem perfeito conhecimento de causa. No momento, não podemos avaliar, com o necessário rigor, das afinidades de *L. mjobergi* para com os gêneros *Felicola* e *Cebidicola*, embora nos pareça não haver espécie mais relacionada a *mjobergi* que *F. jucci*. E este é o principal motivo que nos faz adotar o gênero *Lorisicola*, a título precário, como unidade sistemática, não convindo incluir sua única espécie num dos referidos gêneros sem perfeito conhecimento de causa. Tão estranho fato, de um maléfago de lemures mais se parecer a maléfagos de felinos* que aos dos macacos sulamericanos, nos impõe todas as medidas de prudência."

[The above diagnosis is only an attempt to define the genus *Lorisicola*, which up to now comprises only one species, and it is difficult to distinguish between general and specific characters.

This genotype possesses, in equal doses, characters of the genera *Trichodectes* and *Felicola*. From the former, it presents the predominance of the width over the length of the head, the accentuated

^[3] The current status of this species is: *Procaviphilus (Meganarionoides) colobi* (Kellogg, 1910) ex *Colobus guereza caudatus* O. Thomes, 1885 (Cercopithecidae). See Lyal (1985: 278 f.). In his cladistic system of the Trichodectidae (p. 286), *Lorisicola* and *Cebidicola* are relatively far apart in different subfamilies (the latter in the Dasyonyginae Kéler, 1938). Does this really clarify that there are no kinship ties between the two genera, which, after Kéler (1938), were first suggested for discussion by Eichler (1940)? Without substantiating his statements with concrete characters, Eichler (1940: 160) states: "*Meganarionoides* and *Cebidicola* are obviously closely related, while the position of *Lorisicola* to *Cebidicola* is still quite unclear." A little later Eichler (1941: 381) places *Cebidicola* and *Lorisicola* with *Meganarionoides* in the Cebidicolinae Eichler within the Trichodectidae. Lyal (1985) breaks up this "association". In my opinion, there are morphological similarities between the latter two genera (e.g. similar head structures, exceptionally large ommatidia, ventral projection of pleurum IV and very similar male genitalia), which are worth closer examination (Emerson & Price 1975, Werneck 1950). According to Hopkins (1949), a closer relationship between *Lorisicola* and *Cebidicola* could be considered. *Cebidicola* lives with three species on South American Atelidae (type hosts: Southern Muriquie, Columbian Red Howler and Ursine Red Howler).

⁴ Werneck (1948: 221), however, synonymises *Paradoxuroecus* with *Felicola*. - Conci (1942, 1947) gives as type host "*Paguma larvata grayi* Bennett", which is explicitly said to come from Burma, where, however, only the nominate form of the Masked Palm Civet occurs (Burgin et al. 2020). In Conci's publication of 1942, printed in the "Bollettino della Società Entomologica Italiana", Volume 74, N. 10, the date of publication is given: "31 Dicembre 1942". According to Poggi (2008), there is no indication to doubt the date given (as one could initially assume according to the circumstances of the time).

sexual dimorphism of the antennae, the number of abdominal stigmata and the absence of posterior prominence in the abdomen of the male; from the latter, the subtriangular shape of the preantennal region, the diminutive length of the bristles and, to a certain extent, the pigmentation of the abdomen. Under these conditions, it might be better to confuse it with the atypical forms of doubtful general position which we have arbitrarily included in the genus *Felicola*.

It is also situated between the genus *Felicola*, or, more precisely, between *Felicola juccii* and the genus *Cebidicola* [...]. In fact, the similarity between this last species and *L. mjobergi* is so flagrant that it repels us to separate them into different genera. But, as we have said in dealing with the general division of the trichodectids, in the first part of this paper, it is impossible to divide them without falling into similar absurdities.

However, and in spite of the above, we must recognize that *L. mjobergi* is a little more distant from the characteristic species of the genus *Felicola* than *F. juccii*, not only by the number of abdominal respiratory stigmata, but also by the pigmentation of the abdomen of the female, the shape of the gonapophyses and the cephalic region posterior to the antennae. In the latter, the lateralis margins converge strongly from front to back and from outside to inside, from the ocular tubercles, as occurs in the species of the genus *Cebidicola*. *L. mjobergi* is similar to the latter genus in the abdominal pigmentation of the female, which occupies the entire tergite of the ring corresponding to the last pair of stigmata.

At the moment, we cannot evaluate, with the necessary rigour, the affinities of *L. mjobergi* with the genera *Felicola* and *Cebidicola*, although we are able to evaluate, with the necessary rigour, the affinities of *L. mjobergi* with the genera *Felicola* and *Cebidicola*, although it seems to us that there is no species more related to *mjobergi* than *F. juccii*. This is the main reason that makes us adopt the genus *Loricicola*, on a precarious title, as a systematic unit, not being convenient to include its only species in one of the referred genera without perfect knowledge of cause. Such a strange fact, that a lemur malophagus looks more like feline malophagus* than to those of South American monkeys, imposes all precautionary measures on us.]

Apart from personal qualification and basic attitude in systematic questions, different currents and schools of thought in animal louse taxonomy of the 20th century meet here, such as reservations towards monotypic genera, insufficiently studied and/or underestimated traits, overcritical or glorified views on host specificity and co-evolution, and prevailing conservative zeitgeist in animal louse taxonomy.

***Loricicola* Bedford, 1936** gen. rev.

Figs. 1-5, 7-17, Tables 1-2

Generotype: "*Trichodectes mjobergi* Stobbe, 1913".

Loricicola Bedford, 1936, Onderstepoort J. vet. Sci. 7, 51 f. Generotype: "*Trichodectes mjobergi* Stobbe".

Meganarion Kéler, 1938 (generotype: "*Trichodectes armatus* Neumann, 1913"). Eichler 1940: 160, absolute synonym of *Cebidicola* Bedford, 1936. Pro parte.

Loricicola Bedford: Werneck (1950: 1)

Loricicola Bedford: Hopkins & Clay (1952: 201).

Loricicola (*Loricicola*) Bedford: Lyal (1985: 312). Pro parte.

Loricicola (*Paradoxuroecus*) Bedford: Lyal (1985: 318). Pro parte.

Felicola (*Loricicola*) Ewing, 1929: Timm & Price (1994: 114).

Felicola (*Loricicola*) Ewing, 1929: Price et al. (2003: 258, 268).

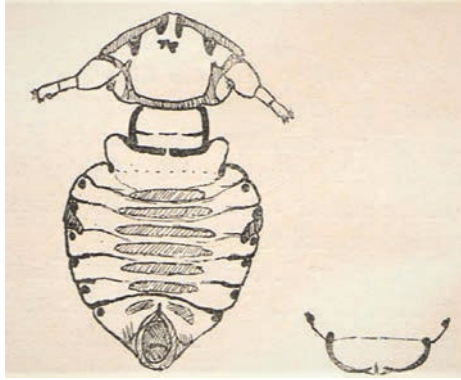


Fig.2. The two line drawings of *Loricicola mjobergi* from the original description by Stobbe (1913: Figs. 8a, b). Left: male, dorsal; right: ventral abdominal end of female.



Fig.3. *Loricicola mjobergi*, male. Line drawing by Hilda Sikora after Stobbe's type material. From Eichler (1941: Fig. 19).

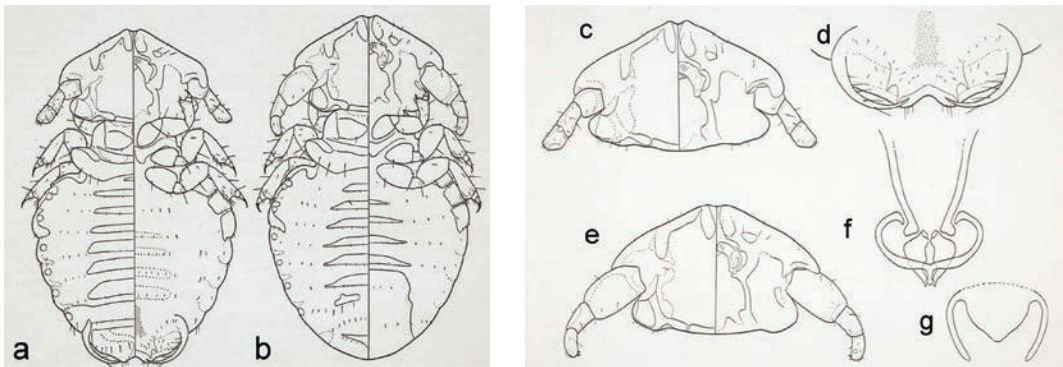


Fig.4. *Loricicola mjobergi*. **a:** female. **b:** male. **c:** Head, female. **d:** Terminalia, ventral, female. **e:** Head, male. **f:** Genitalia, male. **g:** Genital sclerite, male. From Werneck (1950: 4-5), after Stobbe's type material.

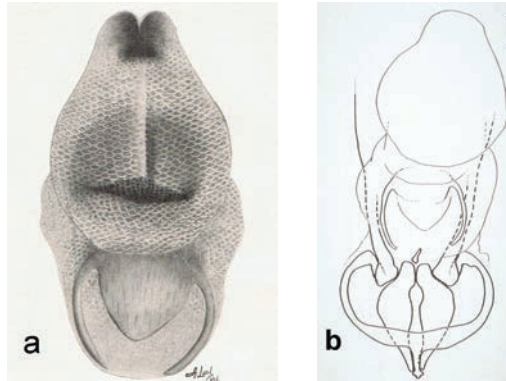


Fig.5. *Lorisicola mjobergi*, male. **a:** Endosclerite and preputial sac. From Werneck (1950: 6), after Stobbe's type material **b:** Genital apparatus. From Lyal (1985: 319).

Diagnosis

Long broad clypeal carina ending above the scapus without having formed a cone. Clypeal nodus in middle of clypeal carina. Two preantennal setae (*pcs 1-2*) absent. Ommatidium very large, with one anterior-dorsal and one posterior-ventral ocularis. Arched cervical sclerite just above temple leading to occipital carina and forming a "shoulder joint" with prothorax. Ventral and dorsal projection both on pleurum IV. Abdominal tergite VII almost completely covering segment. Mesomerall arch of male ending in a lumened trident. Subgenitalplate of female with two pointed and slightly curved chitinous teeth on each side, margin between the two inner chitinous teeth provided with numerous minute brush-like spines.

Description

Males and females about the same size, average body length 1.12 mm (Table 2).⁵ Philopteroid habitus with broad almost rectangular compressed head (Fig. 7). The entire head of *Lorisicola* has undergone considerable changes in pre- and postantennals due to compression, which are not so conspicuous in any other trichodectid.

⁵ However, it remains to be seen whether a statistical analysis of the measured individuals can reveal significant differences in certain body measurements of the different clans.

Table 2. Body measurements (mm) and head index (occiput width [with eyes] divided by head length) of *Loricicola mjobergi* sensu lato (Ischnocera, Trichodectidae s.l.) ex Bengal Slow Loris *Nycticebus bengalensis* and Pygmy Slow Loris *Nycticebus pygmaeus* both from Cuc Phuong National Park, Vietnam. In addition, the sparse measurements of the type material according to Stobbe (1913), Ewing (1930) and Werneck (1950) are given.

Louse species	<i>Loricicola mjobergi</i> s. l.									
Hosts	<i>Nycticebus bengalensis</i> Lacépède		<i>Nycticebus pygmaeus</i> Bonhote		<i>Nycticebus</i> sp. from North Borneo		<i>Nycticebus coucang</i> (Boddaert)			
					Stobbe (1913: 379)	Werneck (1950: 4, 6)			Ewing (1930: 121)	
Sex	♂ (n = 1)	♀♀ (n = 6)	♂♂ (n = 14)	♀♀ (n = 36)	♂	♀	♂	♀	♂	
slide(s)	4011.a	4011.a-b	4052. a-e, 4318.a-c	4052. a-f, 4318.a-d	type material					
Total length	1.12*	1.11-1.20 (x = 1.15)	1.05 - 1.13 (x = 1.065)	0.93 - 1.20 (x = 1.11)	1:20 AM	1:28 AM	1:19 AM	1:17 AM	1:15 AM	
Head length	0.34	0.33 - 0.36 (x = 0.348)	0.33 - 0.35 (x = 0.331)	0.30 - 0.36 (x = 0.336)	0.33	0.34				
Forhead width	0.50	0.51 - 0.55 (x = 0.525)	0.47 - 0.50 (x = 0.487)	0.50 - 0.55 (x = 0.521)						
Occiput width (with eyes)	0.47	0.47 - 0.50 (x = 0.48)	0.42 - 0.43 (x = 0.427)**	0.46 - 0.50 (x = 0.476)*	0.53	0.55				
Occiput width (without eyes)	0.43	0.44 - 0.47 (x = 0.453)	0.40 - 0.42 (x = 0.413)*	0.43 - 0.47 (x = 0.445)						
Head index	0.72	0.69 - 0.73 (x = 0.723)	0.72 - 0.81 (x = 0.784)**	0.64 - 0.77 (x = 0.708)*						
Prothoracic width	0.30	0.32 - 0.35 (x = 0.335)	0.29 - 0.32 (x = 0.307)	0.30 - 0.34 (x = 0.328)						
Mesometathoracic width	0.47	0.48 - 0.51 (x = 0.495)	0.44 - 0.46 (x = 0.441)	0.44 - 0.50 (x = 0.481)	0.46	0.50				
Abdominal width	0.68	0.68 - 0.75 (x = 0.705)	0.64 - 0.70 (x = 0.663)	0.60 - 0.74 (x = 0.686)	0.70	0.70				
			* n = 13	* n = 35						
			** n = 9							

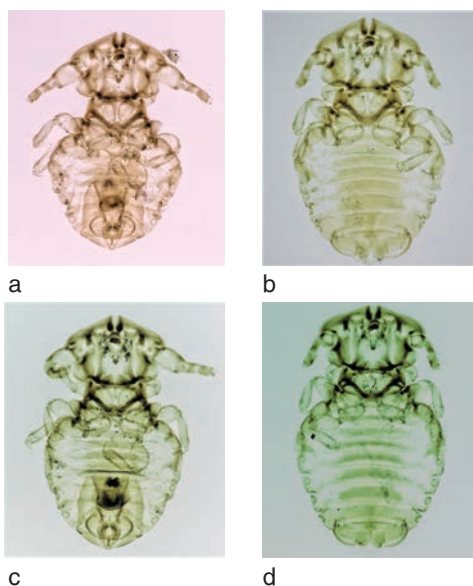


Fig.7. *Loricicola mjobergi* s. l. ex *Nycticebus* spp. **a:** male (M. 4011. a), total length 1.12 mm, ex *N. bengalensis*. **b:** female (M. 4011. a), total length 1.2 mm, ex *N. bengalensis*. **c:** male (M. 4052. a, left), total length 1.11 mm, ex *N. pygmaeus*. **d:** female (M. 4052. b, top left), total length 1.17 mm, ex *N. pygmaeus*.

Male with powerful scapus, which is apically armed on a pronotum with a pair of thick blunt spines (Fig. 12). Females without such (Fig. 8).

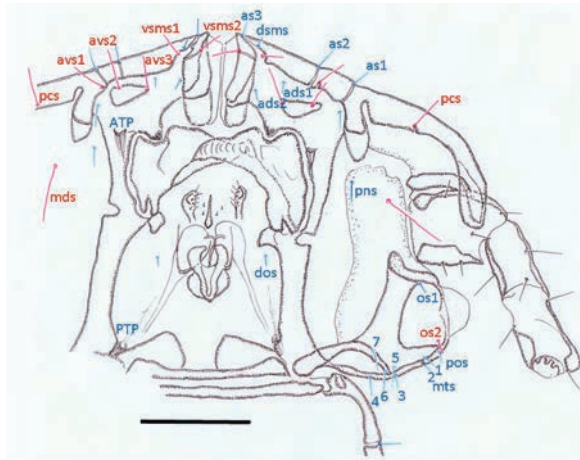


Fig.8. Pro parte head and prothorax with dorsal and ventral structures of *Lorisicola mjobergi* s. l., female (M. 4052. d) ex *Nycticebus pygmaeus*. Dorsal setae blue, ventral red, also abbreviations of other structures. Abbreviations see p. 183. Scale 0.1 mm.

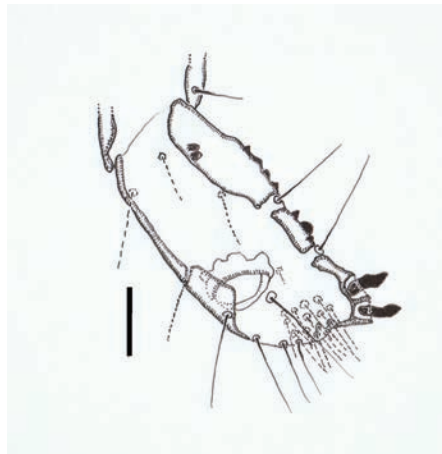


Fig.12. Flagellum of *Lorisicola mjobergi* s. l., male (M. 4318. b), ex *Nycticebus pygmaeus*. Ventral setae dotted. Scale 0.02 mm.

The clypeal carina encloses the anterior head between the antennal pits as a broad band, interrupted only by the relatively narrow osculum. The clypeo-frontal nodus divides the clypeal carina into two equal sections on each side. It rises obliquely caudad above the plane of the front of the head and serves as an abutment during movement in the host pelage. On top of head several sutures. Unpigmented cheek pit enclosing space between ventral and clypeal carina minute. Ventral carina broad but very short. Cibarial sclerite (Fig. 13) deviates from that typical of trichodectids (Haub 1972, 1973).

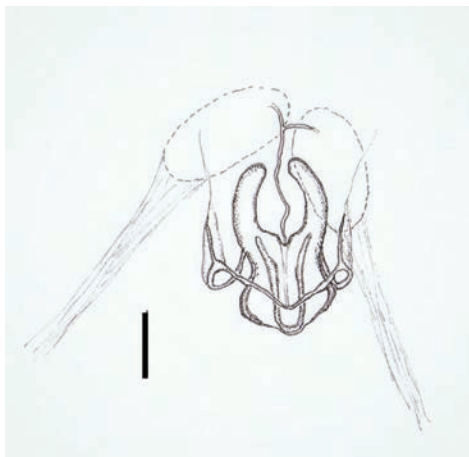


Fig.13. Cibarial sclerite of *Loricicola mjobergi* s. l., larva (M. 4052. g), ex *Nycticebus pygmaeus*. Scale 0.02 mm.

There is no cone set off in front of the antennal pits. The free, rigid, slightly curved end piece of the clypeal carina, which protrudes slightly above the scapus, cannot be interpreted as a cone. However, it probably fulfils the same function as the cone. This unique formation, already present in the larval stage, lacks the setae common in trichodectids. In these, three constantly occurring setae (according to Kéler 1938) insert between conus and clypeo-frontal nodus: dorsally lower (*pas 2*) and upper (*pas 1*) bar pit seta and ventrally the peg seta (*pcs*). In *Loricicola*, only the *pcs* located between the nodus and the posterior end of the clypeal carina remains (Figs. 8-9). Unusually, there are two anterior dorsal setae (*ads*) on each side of the anterior head as microchaetae (in Fig. 8 *ads 1-2*, see Table 1).

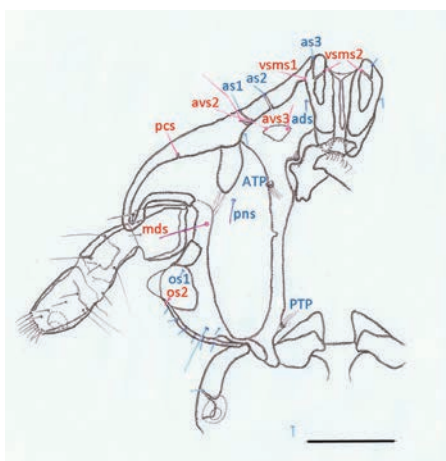


Fig.9. Head half, dorsal, of *Loricicola mjobergi* s. l., larva (L III) (M. 4052. f) ex *Nycticebus pygmaeus*. Dorsal bristles blue, ventral red, also abbreviations of other structures. Abbreviations see p. 183. Scale 0.1 mm.

Further peculiarities of *Loricicola* associated with chaetotaxic details are found on their temples. First of all, an unusually large ommatidium, which takes up about one third of the length of the occipital carina, is noticeable on each side of the relatively small occiput, which has a thimble-like shape in the imagines and a more pointed shape in the larvae. It is very reminiscent of the very similarly shaped eyes of the three *Cebidicola* species. On the *Loricicola* ommatidium two oculari (Figs. 8-9) are situated marginally on the temple (not on the ommatidium itself), anteriorly a dorsal, posteriorly a ventral ocular seta. The former is new in this allocation and position and has apparently remained

unnoticed until now. The latter is the only one in the row of temporal setae (*os*, *pos* and *mts*) that sits ventrally. Both eye microchaetae are of approximately the same size. They are followed by marginal preocularis and 7-9 temporal setae (Figs. 8-9). The constancy in the number (8) of temporal setae in trichodectids emphasised by Kéler (1938) also seems to apply to *Loricicola*. In 21 individuals (4 ♂, 17 ♀), 22 times eight, 3 times nine and 7 times seven setae were found on each side of the head.

Broad short temporal carina strongly sclerotised, not crossing with occipital carina. A visible gular plate covering the occipital hole is completely absent (Figs. 7-9, 11). Prominent arched cervical sclerite extending over the tempora to the occipital carina and fused with it (Figs. 8-10). Between this cervical arch and the occipital carina fits an articular head on the anterior corner of the prothorax (“shoulder joint”), the (lateral) mobility of the head and thorax. This organelle, apparently unique among trichodectids, is provided with a group of 4-5 setae of different lengths, three of which (*mts* 5-7) insert submarginal to the marginal carina but on the cervical sclerite.

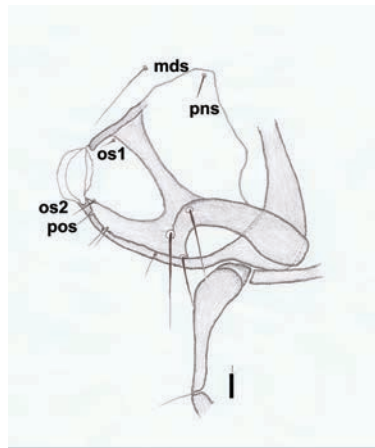


Fig.10. Tempora and prothoracic margin (half-sided, dorsal) of *Loricicola mjobergi* s. l., male (M. 4052. b) ex *Nycticebus pygmaeus*. Abbreviations see p. 183. Scale 0.02 mm.

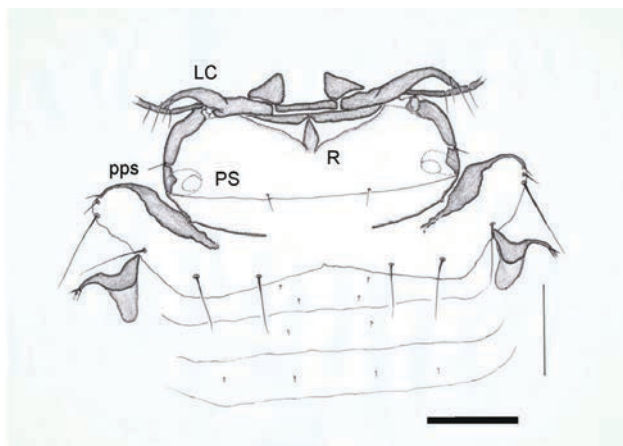


Fig.11. Occipital margin, pro- and mesometanotum and pro parte first two abdominal segments (with pleurum I) of *Loricicola mjobergi* s. l., female (M. 4052. c), ex *Nycticebus pygmaeus*. Abbreviations see p. 183. Scale 0.1 mm.

Head setae as in Figs. 8-11 (see also Table 1). One setae on each side proximal to the clypeal nodus (marked with ?) remains unclear in its assignment.

As in *F. (Felicola) subrostratus*, the anterior corner setae of the prothorax is missing in *Loricicola*

mjobergi. However, it is present in *F. (Lyalicola) hercynianus* as well as in most species of this subgenus (as can be inferred from their descriptions). Dorsal thoracic setae sparse (Fig. 11). Prostigma of larva about a quarter larger than its six abdominal stigmata. Femura II and III distally ventrally each with a relatively long strong spine.

Abdomen of male and female similar in basic shape, widest at segment IV and with six pairs of stigmata (III-VIII). Abdominal setae almost exclusively with microchaetae. Sternites and tergites only central. Tergite VIII almost completely covering segment between stigmata, reduced on anterior part in female. Pleurites III-IV with antero- and postero-lateral short spines. Pleurium IV with ventral and dorsal projection, ventral more sclerotised and with short spine in male and female.

Gonapophyses simple slender sabre-like processes reaching almost to median, each with 6-7 non-tuberculate mesochaetes internally. Terminalia (ventral) with hypogynium as in Fig. 17. Distinctive male genitalia with massive preputial sac and (barely visible) genital sclerite (Figs. 4-5, 15). Mesomeres apparently neither fused to the apical basal apodemes nor to the basiparamerous sclerites (which seems to be the case in *L. mjobergi* s. str. ?). Mesomer arch terminating in a cruciform apex (with lumen) (Fig. 15). Hypandrium forming a large rectangular plate with rounded tip posteriorly. Genital opening posterior-dorsal. On its posterior margin on each side five (sometimes on one side six) weakly sclerotised setal tubercles (Fig. 16). These apparently absent in *L. mjobergi* s. str.



Fig.14. Abdominal pleurae II-V of *Loricicola mjobergi* s. l., female (M. 4052. g), ex *Nycticebus pygmaeus*. Ventral setae dotted. Scale 0.1 mm.

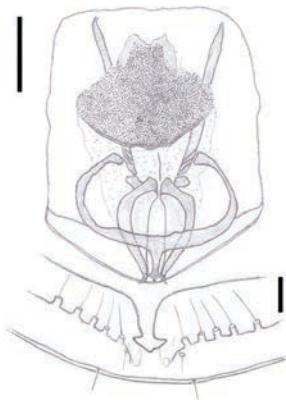


Fig.15-16. *Loricicola mjobergi* s. l., males, ex *Nycticebus pygmaeus*. **15:** Hypandrium (on VII-IX/X segments) and genital (M. 4052. d). Scale 0.1 mm. **16:** Genital opening (dorsal) with setal tubercles. Paramers indicated (M. 4318. b). Scale 0.02 mm.

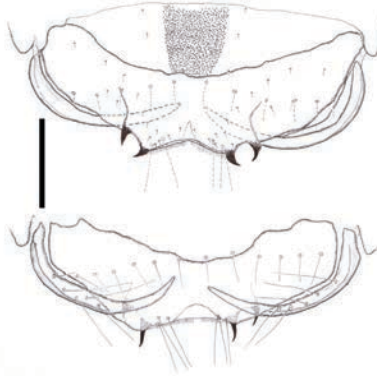


Fig.17. Terminal segment with gonapophyses and subgenital midlobe of *Lorisicola mjobergi* s. l., female (M. 4052. g, two different individuals), ex *Nycticebus pygmaeus*. Ventral setae dotted. Scale 0.1 mm.

Hospitale and zoogeographical distribution

Parasitic monotypically on Lorisinae, Primates; previously known from five *Nycticebus* spp. from Orientalis.

Presumed relationships

That there should be a habitual similarity between *Lorisicola* and *Felicola* s. l., as Werneck (1950) thinks, is in my opinion hardly comprehensible today. Not only the overall impression, but also some individual features speak against it. The more one delves into their morphology, the clearer it becomes that the two do not have much in common. Whether, on the other hand, a closer relationship between *Cebidicola* and *Lorisicola* actually exists, which Werneck (1950) also considers not to be excluded, has yet to be established by autopsy on authentic material. According to Lyal (1985), however, this seems to be excluded from the point of view of morphology (see footnote 3).

Lyal (1987: 19 f.) returns to his "*Lorisicola* group" and comments on its hospital distribution, among other things, as follows: „Species of this genus are associated with Viverridae, Felidae, Hesperpestidae and Primates [...]. The distribution of host associations on the cladogram suggests clearly that the last two groups named [*L. mjobergi*] ex "*Nycticebus coucang*" (Lorisidae) und *L. malaysianus* ex *Cynogale bennetti* (Viverridae)] are associated with *Lorisicola* following secondary infestations. The association with a primate probably took place in Southeast Asia, as both the louse concerned and its sister-species are distributed there, and that with Herpestidae in Africa as, again, both the clade concerned and sister-group are sympatric in that continent." This hypothesis, as far as *Lorisicola* is concerned, is in stark contradiction with the morphological findings and conclusions presented here.

Lorisicola mjobergi (Stobbe, 1913) sensu lato

Figs. 1-5, 7-17, Tables 1-2

Type host: "*Nycticebus borneanus* Lyon, 1906." Bornean Slow Loris. Host association in need of revision from today's perspective (see p. XX).

Trichodectes mjobergi Stobbe, 1913: 379, fig. 8 a-b, from a skin of "*Nycticebus borneanus*, Nord-Borneo" in the Berlin Museum of Natural History.

Trichodectes mjobergi Stobbe: Kellogg 1914, Amer. Nat. 48: 276.

Trichodectes mjobergi Stobbe: Harrison 1916, Parasitol. 9: 71.

Trichodectes brachycephalus Ewing, 1930: 120 f. ex "*Nycticebus coucang*, from Johor Lama, Malay Peninsula".

Lorisicola mjobergi (Stobbe): Bedford 1936, Onderstepoort J. Vet. Sci. & Animal. Ind. 7, 52.

Trichodectes brachycephalus Ewing, 1930: Bedford (1936: 52), synonym of *Lorisicola mjobergi* (Stobbe).

Meganarion mjobergi (Stobbe): Kéler 1938: Nova Acta Leopoldina N.S. 5: 465. Pro parte.

Meganarion brachycephalus Ewing, 1930: Kéler (1938: 465). Pro parte.

Loricicola mjobergi (Stobbe): Bedford (1931: 51).

Loricicola mjobergi (Stobbe): Eichler 1941: Arch. Naturgesch. N.F. 10, Abb. 19, p. 393.

Loricicola "brachycephala" [Ewing, 1930]: Hopkins (1949: 445), synonym of *Loricicola mjobergi*.

Loricicola mjobergi (Stobbe, 1913): Hopkins (1949: 540).

Loricicola mjobergi (Stobbe, 1913): Werneck (1950: 3 ff., figs. 1-8). "ex *Nycticebus borneanus* Lyon, do norte de Borneo."

Trichodectes brachycephalus Ewing, 1930: Werneck (1950: 3), synonym of *Loricicola mjobergi*.

Loricicola mjobergi (Stobbe, 1913): Hopkins & Clay (1952: 202) ex "*Nycticebus [coucang] borneanus* Lyon".

"Doubtfully distinct from *Felicola*."

Loricicola (Loricicola) mjobergi (Stobbe, 1913): Lyal 1985, Bull. Br. Mus. nat. Hist. (Entomol.) 51 (3), p. 312 ff., fig. 207, 214, 219.

Felicola (Loricicola) mjobergi (Stobbe, 1913): Timm & Price 1994, Proc. Biol. Soc. Wash. 107, 114 ff.

Felicola (Loricicola) mjobergi (Stobbe, 1913): Price et al. (2003: 258) "ex *Nycticebus coucang borneanus* Lyon".

Material examined from two host species (Fig. 6)

I. 1 ♂, 6 ♀, 6 larvae (M. 4011. a-c) from a living adult Bengal Slow Loris *Nycticebus bengalensis* (Lacépède, 1800) (Fig. 6 a), adultus, 21.6.1994 Cuc Phuong National Park, Vietnam, leg. Tilo Nadler (collected from the dorsal fur of the host).

New host-parasite association record.

II. 14 ♂, 36 ♀, 16 larvae from two living pygmy slow lorises *Nycticebus pygmaeus* Bonhote, 1907 (Fig. 6 b), namely 1. 9 ♂, 30 ♀, 13 larvae (M. 4052. a-f) ex *N. pygmaeus* adultus, 20.7.1995 Cuc Phuong National Park, Vietnam, leg. M. Klöden. - 2. 5 ♂, 8 ♀, 3 larvae (M. 4318. a-d) ex *N. pygmaeus* adultus, 2.12.1998 Cuc Phuong National Park, Vietnam, leg. Tilo Nadler.

New host-parasite association record.



Fig.6. left: Pygmy slow loris *Nycticebus pygmaeus*, right: Bengal slow loris *Nycticebus bengalensis*, Cuc Phuong National Park, Vietnam. Photos: Tilo Nadler.

The description of the species largely coincides with that of the genus (see above).

The genital sclerite in the endophallus of *Loricicola* is barely visible in all the males I examined, and without having looked closely at the illustrations by Werneck (1950) and Lyal (1985), I would probably have missed its existence. On the other hand, a taxonomic difference could be hidden behind the clouded perception, because a compact sclerite, as depicted by these authors and reproduced here in Figure 5, is indeed not present in my material. Be that as it may. The entire genital apparatus of *Loricicola mjobergi* appears as a uniquely complicated formation, which cannot be compared to any other within the trichodectids. This also underlines the special taxonomic position of *Loricicola*. It is very unlikely that the occurrence of *Loricicola* on lorises is due to secondary infestation.

Does *Loricicola* belong to the Felicolini?

Those who study the morphology of the Felicolini more closely and try to get to the bottom of their systematic-taxonomic structures will become aware of some rough edges that are obvious in Lyal's (1986) cladistic analysis of trichodectids. However, apart from Timm & Price (1994), they have not been recognised and clearly addressed in detail by anyone else to my knowledge. These authors assume that the following classification of the Felicolini by Lyal (1985) is in need of revision at the generic level:

Subfamily Trichodectinae Kellogg, 1896

Tribe Felicolini Kéler, 1938

Genus *Felicola* Ewing, 1929

Subgenus *Felicola* Ewing, 1929 (hosts: Felidae, Herpestidae and Viverridae)

Subgenus *Suricatoecus* Bedford, 1932 (hosts: Canidae and Herpestidae)

Genus *Loriscicola* Bedford, 1936

Subgenus *Loriscicola* Bedford, 1936 (hosts: Lorisidae, Felidae and Viverridae)

Subgenus *Paradoxuroecus* Conci, 1942 (hosts: Herpestidae and Viverridae)

Timm & Price (1994: 117) propose a different classification by assigning the four subgenera *Felicola*, *Suricatoecus*, *Loriscicola* and *Paradoxuroecus* to the genus *Felicola* and justify it as follows:⁶

"We accept Lyal's placement of 18, 11, 12 (+ our new species), and 13 louse species, respectively, in these four subgenera. However, we believe it more appropriate that all four be recognized as subgenera of *Felicola*. We come to this conclusion because of the difficulties encountered in the key by Lyal (1985: 335-338) to genera and subgenera. The longest and most complex couplets are used for *Felicola* sensu lato, character states are nondiscrete and overlapping, and separations are ambiguous. There is simply no clear break between these groups that warrants generic level distinction. This action on our part is not a severe departure from Lyal's classification, and is one that we feel is justified."

Timm & Price (1994) also rightly point out that *Felicola subrostratus* is the only felid chewing louse species placed in *Felicola (Felicola)* by Lyal (1985), while all the others (11 spp.) are said to belong to *Loriscicola (Loriscicola)*. In addition, it is particularly striking that the two cat's chewing lice "*Trichodectes subrostratus* Burmeister" (genotype of *Felicola* Bedford !) and "*Felicola hercynianus*" are placed in different genera (the latter in *Loriscicola*), especially as the hosts of both species were still considered conspecific or very closely related to each other at that time. In the meantime there is increasing evidence that *Felis lybica* and *F. silvestris* are two distinct wildcat species according to genetic and morphological evidence and that the domestic cat *Felis catus* arose from the domestication of *F. lybica* in W Asia (probably Mesopotamian region) c. 9500 years ago (Burgin et al. 2020: 406). Against this background stands the question, basically also posed by Timm & Price (1994), whether there are facts that speak more for or more against a generic separation between *Felicola subrostratus* and *Loriscicola hercynianus*.⁷ From a comparative-morphological point of view, there is no doubt about the affinity of the subgenera *Felicola* and *Suricatoecus*. With *Paradoxoecus*⁸ however, one cannot be so sure. And with *Loriscicola* alone, this constellation sensu Lyal (1985) can no longer be maintained, in my opinion.

The conflict is defused with the re-evaluation of the taxonomic status of *Loriscicola mjobergi*. It leads in consequence beyond the proposal of Timm & Price (1994), in that *Loriscicola* is to be separated from the Felicolini. This does much more justice to its independence than leaving it in a seemingly forced alliance with *Felicola* s. l. The presence of several autapomorphic features of *mjobergi* (see p. XX), some of which have so far remained unnoticed, leaves no doubt that we are

⁶ In the checklist of Price et al. (2003) this suggestion has been followed.

⁷ In this context, I will let follow a text that appeared in the wildcat monograph by Piechocki (1990: 212 f.) and was translated by me from the German: "So far, we have not encountered any heavily loused wildcats, but only found 33 mallophages on an escaped kuder from Rübeland [18.1.1985 Harz Mountains, GDR]. According to E. Mey's grateful determination, these were 5 ♂, 27 ♀ and one larva of *Felicola hercynianus*. Mey points out in this context that the morphological differences between *subrostratus* and *hercynianus* speak against a closer relationship of the two chewing louse species, so that obviously the opinion that our domestic cat descends from *Felis silvestris* is not supported from a parasitological point of view. It should also be mentioned that, according to the current state of knowledge, the wild cat chewing louse has been placed in a different genus and, according to Mey (1988) [sensu Lyal 1985], now bears the following name: *Loriscicola (Loriscicola) hercynianus* (v. Kéler, 1957)."

⁸ Further research is pending here.

dealing here with an exceptional trichodectid, which should not only be (re)granted full generic status, but for which it should also be considered whether it belongs in its own tribus (Loricicolini). But what happens to the other species that were previously classified in *Loricicola* (nevertheless as genus or subgenus)? Without *Loricicola mjobergi* (and with reservations also without “*Trichodectes malaysianus*”) they form an undoubtedly natural grouping, for which a new name, *Lyalicola* subgen. nov. is now necessary.



Fig.18. The European Wildcat *Felis s. silvestris* is the type host of the subgenero type *Felicola (Lyalicola) hercynianus* v. Kéler. This specimen lives in an enclosure near Hütischeroda in the Hainich National Park, Thuringia, Germany. Photo: E. Mey, 10.10.2019.

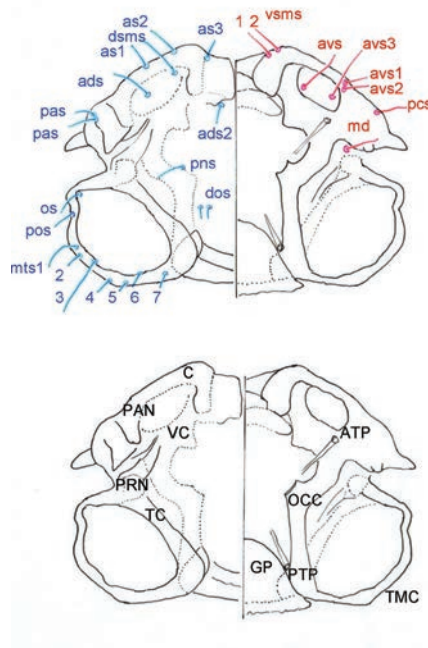


Fig.19. Chaetotaxy and some other head structures of *Trichodectes melis* (J. C. Fabricius, 1805) ex *Meles meles* (Linnaeus, 1758). Dorsal setae blue, ventral red, also abbreviations of other structures. Abbreviations see p. 183. After Kéler 1938, modified, and Symmons (1952).

***Felicola (Lyalicola* subgen. nov.)**

Figs. 20-21, Table 1.

Subgenerotype: *Felicola hercynianus* v. Kéler, 1957 ex *Felis s. silvestris* Schreber, 1777. European Wildcat.

Material: 5 ♂, 27 ♀, 1 larva (M. 3077. a-gg) from a 6.5-year-old European Wildcat *Felis s. silvestris* Schreber, ♂, 18.1.1985 Rübeland, Harz Mountain, Germany, leg. leg. R. Piechocki.

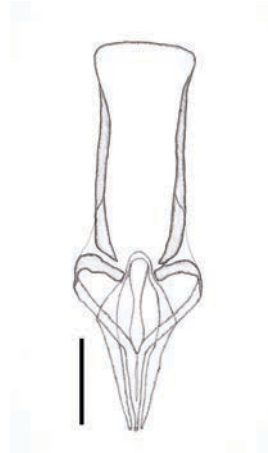


Fig.20. Male genital of *Felicola (Lyalicola* gen. nov.) *hercynianus* v. Kéler, 1957, (M. 3077. ff) ex *Felis s. silvestris*. Scale 0.05 mm.

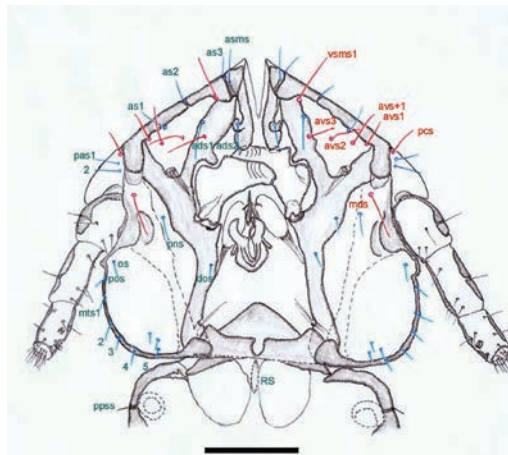


Fig.21. Head (ventral) with dorsal setae of *Felicola (Lyalicola* gen. nov.) *hercynianus*, male (M. 3077. bb) ex *Felis s. silvestris*. Dorsal setae blue, ventral red. Abbreviations see p. 183. Scale 0.1 mm.

The erection of *Lyalicola* subgen. nov. refers to the description of *Loriscicola (Loriscicola)* by Lyal (1985: 302 ff.) to the sole exclusion of *Loriscicola mjobergi*. Incidentally, reference should be made to Emerson & Price (1983), who alone describe seven species in detail and assemble them in the *Felicola felis* complex, which has now been merged into *Lyalicola*.

The idea that their *felis* complex should have something to do with *Loriscicola*, as Lyal (1985) put it a little later, was probably not only alien to them until then.

Finally, attention should be drawn to the following differences in head chaetotaxy. In *F. (Felicola)* and *Loriscicola*, *vsms 1-2* are present, while in *F. (Lyalicola)* *vsms 2* is absent. Only *F. (Felicola)* lacks *as 2*, while it is present in *F. (Lyalicola)* and *Loriscicola* (Table 1).

Derivatio nominis: *Lyalicola* is a neologism in honour of C. H. C. Lyal (British Museum, London), who made a name for himself with several pioneering works on Phthiraptera. An -i- is inserted between his name and the suffix *cola* for better pronunciation. The grammatical gender of the new name is male.

List of species belonging to *Felicola* (*Lyalicola* subgen. nov.)

The names of the type hosts differ in part from those given in Price et. al. (2003) are updated here according to Burgin et al. (2020). Since *Lorisicola mjobergi* (Lorisidae, Primates) is here taken out of the deceptively appearing relationship of *Felicola* s. l. and the generic affiliation of "*Trichodectes malaysianus* Werneck, 1948" (see below) seems to be in question, the type hosts of the Felicolini named below are without exception carnivores (Felidae).

***Felicola* (*Lyalicola* subgen. nov.)**

1. *Lyalicola americanus* (Emerson & Price, 1983) comb. nov. ex *Lynx r. rufus* (Schreber, 1777). Felidae. Texas.
2. *Lyalicola braziliensis* (Emerson & Price, 1983) comb. nov. ex *Leopardus baccatus* (Cope, 1782). Felidae. Brazil.
3. *Lyalicola caffra* (Bedford, 1919) comb. nov. ex *Felis lybica caffra* Desmarest, 1822. Felidae. S Africa.
4. *Lyalicola felis* (Werneck, 1934) comb. nov. ex *Leopardus p. pardalis* (Linnaeus, 1758). Felidae. Guatemala.
5. *Lyalicola hercynianus* (v. Kéler, 1957) comb. nov. ex *Felis s. silvestris* Schreber, 1777. Felidae. Europe. Germany.
6. *Lyalicola isidoroi* (Perez & Palma, 2001) comb. nov. ex *Lynx pardinus* (Temminck, 1827). Felidae. Europe, Spain.
7. *Lyalicola neofelis* (Emerson & Price, 1983) comb. nov. ex *Leopardus geoffroyi* d'Orbigny & Gervais, 1844. Felidae. Brazil.
8. *Lyalicola oncae* (Timm & Price, 1994) comb. nov. ex *Panthera onca* (Linnaeus, 1758). Felidae. Costa Rica.
9. *Lyalicola siamensis* (Emerson, 1964) comb. nov. ex *Prionailurus b. bengalensis* Kerr, 1792. Felidae. Malaya.
10. *Lyalicola similis* (Emerson & Price, 1983) comb. nov. ex *Herpailurus yagouarundi* É. Geoffroy Saint-Hilaire, 1803. Felidae. Paraguay.
11. *Lyalicola spenceri* (Hopkins, 1960) comb. nov. ex *Lynx canadensis* (Kerr, 1792). Felidae. Canada.
12. *Lyalicola sudamericanus* (Emerson & Price, 1983) comb. nov. ex *Leopardus t. trigrinus* (Schreber, 1777). Felidae. Colombia.

It is not without some constraint that "*Trichodectes malaysianus* Werneck, 1948" ex *Cynogale bennettii* J. E. Gray, 1837, (Viverridae. Sumatra) can be placed with *Felicola* (*Lyalicola*).

***Felicola* (*Felicola*) Ewing, 1929**

Genotype: "*Trichodectes subrostratus* Nitzsch" = "*Trichodectes subrostratus* Burmeister, 1838".

***Felicola* (*Felicola*) *subrostratus* (Burmeister, 1838)**

Figs. 22-23, Table 1.

Type host: *Felis catus* Linnaeus, 1758

Material: 3 ♂, 10 ♀, 1 larva (M. 3137. a-n) from a Domestic Cat *Felis catus*, 16.8.1980 Herbsleben near Bad Langensalza, Thuringia, Germany, leg. R. Bellstedt.

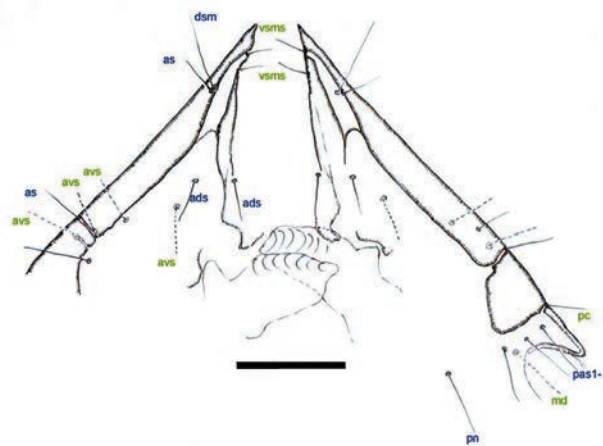


Fig.22. Preantennae with setae of *Felicola* (*Felicola*) *subrostratus* (Burmeister, 1838), male (M. 3137. a). Dorsal setae blue, ventral red. Abbreviations see p. 183. Scale 0.05 mm.

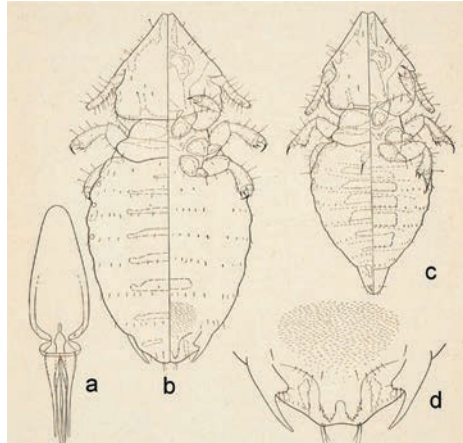


Fig.23. *Felicola (Felicola) subrostratus* (Burmeister). **a:** Male genitalia. **b:** Female. **c:** Male. **d:** Terminalia, female (ventral). From Werneck (1948: 195).

There are a number of detailed descriptions of *Felicola (Felicola) subrostratus* of which the one by Werneck (1948) stands out (Fig. 23). The subgenero types of *Felicola (F. subrostratus)* and of *Lyalicola* subgen. nov. (*L. hercynianicus*) are so different (e.g. Figs. 21 and 22) that no one would think of placing them even closer together than their respective subgenus status already indicates.

It is remarkable that *F. subrostratus* is the only species in the subgenus *Felicola* that lives on a felid. All other species (at least 17) placed in *Felicola (Felicola)* are known from Mongooses (Herpestidae) and Civets, Genets and Oiyans (Viverridae) (Lyal 1985). In contrast, all other felids are known so far to harbour only *Felicola (Lyalicola)* species, which easily proves to be a morphologically very cohesive kinship group. The evolutionary background of this strange exception in the hospital distribution of *Felicola* (with the subgenera *Felicola* and *Lyalicola*) has not yet been clarified.

In agreement with Lyal (1987), there currently seems to be much to suggest that *Felicola (Felicola) subrostratus* settled secondarily on *Felis catus* and spread cosmopolitically with this host.

Acknowledgements

I owe the *Lorisicola* material to the kindness of Tilo Nadler and Manuela Klöden (both Cuc Phuong National Park, Vietnam). Dr. Wolfram Mey and Dipl.-Biol. Birgit Jaehnicke (both Natural History Museum Berlin) made efforts to locate type material of "*Trichodectes mjobergi* Stobbe". I thank them very much for finding the microscope slides that were thought to be lost. Microphotographic images were taken by the author thanks to the kind support of Dipl.-Ing. (FH) Georg Sprößig (Dresden-Pillnitz). I thank M. Sc. Gaetano Fichera (Jena) and Dr. Fabrizio Turrisi for their literature research.

References

- Bedford GAH** (1936): Notes on Species of Trichodectidae with Description of New Genera and Species. Onderstepoort J. vet. Sci. 7(1), 33-58.
- Burgin CJ, Wilson DE, Mittermeier RA, Rylands AB, Lacher TE & Sechrest W** (eds.) (2020): Illustrated Checklist of the Mammals of the World. Volume 2. Eulipotyphla to Carnivora. Lynx Edicions, Barcelona.
- Conci C** (1942): Diagnosi preliminare di tre nuovi generi e di una nuova specie di Trichodectinae (Mallophaga). Boll. Soc. entomol. Italiana 74(10), 140-142.
- Conci C** (1946): Il Genere "*Paradoxuroecus*" ed il suo generotipo (Mallophaga). Rev. Brasil. Biol. 7(2), 247-249.
- Göllner-Scheiding U** (1973): Katalog der im Zoologischen Museum Berlin vorhandenen Mallophagentypen. Lounais-Hämeen Luonto (Forssa) 46, 29-46.
- Eichler W** (1940): Notulae Mallophagologicae. I. Neue Gattungen und Subfamilien von Haarlingen. Zool. Anz. 129(5/6), 158-162.
- Eichler W** (1941): Zur Klassifikation der Lauskerfe (Phthiraptera Haeckel: Rhynchophthirina, Mallophaga und Anoplura). Arch. Naturgesch., N.F. 10(3), 345-398.
- Eichler W** (1989 a): Konsequenzen der Third Edition der Zoologischen Nomenklaturregeln für die Parasitologie. Angew. Parasitol. 30(1), 51-55.

- Eichler W** (1989 b): Wichtiges von den neuen Nomenklaturregeln / Die Third Edition des Code. Dtsch. entomol. Z., N.F. 36(1-3), 45-55.
- Emerson KC & Price RD** (1975): Mallophaga of Venezuelan Mammals. Brigh. Young Univ. Sc. Bull., Biol. Ser. 20(3), 1-77.
- Ewing HE** (1930): Six new species of Mallophaga. Proc. Entomol. Soc. Washington 32(7), 117-121.
- Gustafsson DR & Bush SE** (2017): Morphological revision of the hyperdiverse *Brueelia*-complex (Insecta: Phthiraptera: Ischnocera: Philopteridae) with new taxa, checklists and generic key. Zootaxa 4313(1), 1-443.
- Harrison L** (1916): The genera and species of Mallophaga. Parasitology 9(1), 1-156.
- Haupt F** (1972): Das Cibarialsklerit der Mallophaga-Amblycera und der Mallopaga-Ischnocera (Insecta). Z. Morphol. Tiere 73, 249-261.
- Haupt L** (1973): Das Cibarium der Mallophagen Untersuchungen zur morphologischen Differenzierung. Zool. Jb. Anat. 90, 483-525.
- Hopkins GHE** (1949): The host-associations of the lice of mammals. Proc. Zool. Soc. London 119, 387-604.
- Hopkins GHE & Clay T** (1952): A check list of the genera & species of Mallophaga. Trustees of the British Museum, London.
- Kéler S** (1938): Baustoffe zu einer Monographie der Mallophagen. I. Teil: Überfamilie der Trichodectoidea. Nov. Acta Leopold., Abh. Kaiserl. Leopold.-carol. Deut. Aka. Naturf. N. F. 5(32), 395-467.
- Kéler S** (1940) [„1939“]: Baustoffe zu einer Monographie der Mallophagen. II. Teil: Überfamilie Nirmoidea (1). Nov. Acta Leopold., Abh. Kaiserl. Leopold.-carol. Deut. Aka. Naturf. N.F. 8(51), 3-254 + Taf. 1-4.
- Kéler Sv** (1957): Der Haarling der Wildkatze (*Felicola hercynianus* n. sp.) (Mallophaga, Trichodectidae). Dtsch. entomol. Z., N.F. 4(3/4), 172-178.
- Lux E, Mix HM & Zedev B** (1997): *Damalinia (Tricholipeurus) zaganseeri*, n. sp. (Phthiraptera: Trichodectidae), a Parasite from *Procopra gutturosa* (Artiodactyla, Bovidae) in Mongolia. J. Med. Entomol. 34(6), 599-604.
- Lyal CHC** (1985): A cladistics analysis and classification of trichodectid mammal lice (Phthiraptera: Ischnocera). Bull. Br. Mus. Nat. Hist. (Entomol.) 51(3), 187-346.
- Lyal CHC** (1987): Co-evolution of trichodectid lice (Insecta: Phthiraptera) and their mammalian hosts. J. Nat. Hist. 21, 1-28.
- Mey E** (1988): Übersicht über die Säugetier-Mallophagen Europas. Angew. Parasitol. 29, 113-126.
- Mey E** (1994): Beziehungen zwischen Larvenmorphologie und Systematik der Adulti bei den Vogel-Ischnozeren (Insecta, Phthiraptera, Ischnocera). Mitt. Zool. Mus. Berlin 70, 3-84.
- Mey E** (2009): Die Mallophagen (Insecta, Phthiraptera: Amblycera & Ischnocera) der Galloanseres (Aves) – ein Überblick. Beitr. Jagd- u. Wildforsch. 34, 151-188.
- Nekaris KAI** (2013): Family Lorisidae (Angwantibos, Pottos and Lorises). In: Mittermeier RA, Rylands AB & Wilson DE (eds.): Handbook of the Mammals of the World. Vol. 3. Primates; pp. 210-235. Lynx Edicions, Barcelona.
- Nekaris KAI** (2020): Family Lorisidae. In: Burgin CJ, Wilson DE, Mittermeier RA, Rylands AB, Lacher TE & Sechrest W (eds.): Illustrated Checklist of the Mammals of the World. Vol. 1. Monotremata to Rodentia; pp. 166-170. Lynx Edicions, Barcelona.
- Piechocki R** (1990): Die Wildkatze *Felis silvestris*. Die Neue Brehm-Bücherei No. 189. Wittenberg Lutherstadt, A. Ziemsen Verlag.
- Poggi R** (2008): Le date di stampa dei periodici editi dalla Società Entomologica Italiana dal 1869 al 2007. Memorie Soc. entomol. ital. 87, 157-188.
- Price RD, Hellenenthal RA & Palma RL** (2003): World checklist of chewing lice with host associations and keys to families and genera. In: Price RD, Hellenenthal RA, Palma RL, Johnson KP & Clayton DH (eds): The chewing lice: world checklist and biological overview. Special Publication 24, pp. 1-447. Illinois Natural History Survey.
- Remane A** (1956): Die Grundlagen des natürlichen Systems, der vergleichenden Anatomie und der Phylogenetik / Theoretische Morphologie und Systematik I. Second Edition. Akademische Verlagsgesellschaft Geest & Portig K.-G., Leipzig.
- Stobbe R** (1913): Mallophagen. 3. Beitrag: Die Trichodectiden des Berliner Museums für Naturkunde. Sitzungsber. Gesellsch. naturforsch. Freunde, Berlin 1913, 365-383.
- Symmons S** (1952): Comparative anatomy of the Mallophagan head. Trans. Zool. Soc. London 27(4), 349-436.
- Timm RM & Price RD** (1994): A new species of *Felicola* (Phthiraptera: Trichodectidae) from a Costa Rican Jaguar, *Panthera onca* (Carnivora: Felidae). Proc. Biol. Soc. Wash. 107(1), 114-118.
- Werneck FL** (1948): Os Malófagos de Mamíferos. Parte 1: Amblycera e Ischnocera (Philopteridae e parte de Trichodectidae). Instituto Oswaldo Cruz, Rio de Janeiro.
- Werneck FL** (1950): Os Malófagos de Mamíferos. Parte II: Ischnocera (continuação de Trichodectidae) e Rhyncophthirina [sic]. Instituto Oswaldo Cruz, Rio de Janeiro.

SHORT COMMUNICATIONS

One jump closer to extinction: Five grey-shanked douc langurs (*Pygathrix cinerea*) shot dead

Govinda Lienart

Three Monkeys Wildlife Conservancy <govinda.lienart@three-monkeys.org>

Key words: Grey-shanked douc langur, *Pygathrix cinerea*, wildlife crime, hunting

On the 8th of October 2021, an interdisciplinary working group consisting of forest rangers, commune police, and district forest managers found the corpses of 5 grey shanked douc langurs while patrolling Kon Cang forest in Ba To District, Quang Ngai Province (Fig. 1). The hunters appeared to have fled upon arrival of the patrol, leaving nearby the primate corpses a homemade air gun, 53 lead bullets, a silencer, and a motorcycle. This poaching event represents another major blow for the grey-shanked douc langurs. Such alarming decline in its population eventually brought the grey shanked douc langurs to be listed by the Vietnamese government in Vietnam's Red Data Book as 'Critically Endangered'. The species has also been listed internationally on the IUCN Red List of Threatened Species as 'Critically Endangered' and under the 'World's 25 Most Endangered Primates'.

While various factors such as habitat destruction and fragmentation are threatening the survival of grey-shanked douc langurs, hunting represents one of the major threats for this species. This primate species is indeed a regular victim of the illegal wildlife trade and is typically sought after for bushmeat, traditional medicine, and the pet trade. On some rare occasions, poached wildlife is intercepted in the field by forest police and rangers before entering the illegal wildlife trade, as has occurred during the reported seizure of the 5 grey-shanked douc langurs within Kon Cang forest. Intriguingly, the significance of this seizure appeared to have created an echo at a higher level within the Vietnamese authorities.

On October 20th, Deputy Prime Minister Lê Văn Thành reportedly sent a formal request to Quang Ngai Provincial People's Committee to coordinate local authorities and investigate this crime on the country's natural heritage thoroughly. On November 1st, authorities tracked down the hunters and eventually managed to identify two subjects responsible for the crime. The illegal hunting of critically endangered species such as rare langurs violates regulations on wildlife protection. According to the related penal code, the prison sentence for violators can be up to 7-12 years. The witnessed higher-level intervention of Vietnamese authorities may hopefully lead to a countrywide reversing the High Profit/Low-Risk equation currently dominating the illegal wildlife trade in Vietnam.



Fig.1. Five hunted grey-shanked douc langurs (*Pygathrix cinerea*). Photo: Forest Protection Department Ba To District.

INSTRUCTIONS FOR CONTRIBUTORS

The *Vietnamese Journal of Primatology* is a peer reviewed journal. It welcomes manuscripts from all areas related to the conservation and research of non-human primate taxa which occur in Vietnam and the neighboring countries of Cambodia, China and Laos. The journal publishes both original research papers and short communications.

Submission: Submit English manuscripts electronically (as unformatted Microsoft Word file attachments) to Tilo Nadler or Christian Roos:

Tilo Nadler	Christian Roos
Cuc Phuong Commune	German Primate Centre,
Nho Quan District/Ninh Binh Province	Göttingen,
Vietnam	Germany
e-mail <t.nadler@hust.edu.vn>	e-mail <croos@dpz.eu>

Manuscript Preparation: Manuscripts should be divided into the major divisions given below in the order indicated.

Title Page

The first page of the manuscript should include the title of the paper.

Affiliated institutions of the authors must be given under the headline with the e-mail address of the corresponding author.

Summary

Each paper must include a summary of no more than 300 words, which clearly summarizes the contents of the paper. The Summary will be presented in English and Vietnamese.

Key Words

A list of 3-8 key words in English should be included for indexing purposes.

Text

Research articles must be organized into the following sections: Introduction, Materials and Methods, Results, Discussion, Conclusions, Acknowledgements and References. Acknowledgements may include funding sources such as agency and grant numbers, and the names of those who contributed.

Tables and illustrations

Tables and illustrations should be sent as separate files (either in JPG or TIFF format). Tables require a heading and figures require a legend. All tables and illustrations must be cited in the text. For the reproduction of illustrations, only high quality drawings and photos will be accepted. Color illustrations are welcome. Photographer or artist name must accompany all illustrations. Submit each figure as a separate file.

References

In the text, references should be cited consecutively with the authors' surnames and year of publication in brackets. Vietnamese and Chinese authors should be given with the full name (e.g.: Dao Van Tien). 'Personal observations' (pers. obs.) or 'personal communications' (pers. comm.) cited in the text should not be listed in the references. The reference list should be arranged alphabetically by first author's surname. Chinese and Vietnamese names should complete cited. Please punctuate and format references exactly as in the following examples:

Papers published in periodicals

Dao Van Tien (1989): On the trends of the evolutionary radiation on the Tonkin Leaf monkey (*Presbytis francoisi*) (Primates: Cercopithecidae). *J. of Human Evolution* 4, 501-507.

Fooden J (1996): Zoogeography of Vietnamese Primates. *Int. J. Primatol.* 17, 845-899.

Books and Monographs

Groves CP (2001): *Primate Taxonomy*. Smithsonian Institution Press, Washington DC.

Edited books and book chapters

Groves CP 2004: Taxonomy and Biogeography of Primates in Vietnam and Neighbouring Regions. In: Nadler T, Streicher U. & Ha Thang Long (eds.): *Conservation of Primates in Vietnam*; pp. 15-22. Frankfurt Zoological Society, Hanoi.

Dissertations

Otto C (2005): Food intake, nutrient intake, and food selection in captive and semi-free Douc langurs. PhD thesis, University Cologne, Germany.

Contents

The history of Vietnamese Primate Action Plans and the implementation of the “Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030” – Success or Disaster?	
Tilo Nadler.....	1
Annex 1	
Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030	9
Annex 2	
Assessment on implementation of the Urgent Conservation Action Plan for Primates in Vietnam to 2025, Vision 2030	
Le Khắc Quyết and La Quang Trung.....	95
Summary of Macaque Crime in Vietnam: January 2010 - May 2020	
Education for Nature – Vietnam (ENV).....	149
The illegal trade of the douc langurs (<i>Pygathrix</i> sp.) in Vietnam: January 2010 to December 2020	
Alexandra McEwan, Tilo Nadler and Owen Nevin.....	157
Population density of the grey-shanked douc langur (<i>Pygathrix cinerea</i>) in Kon Ka Kinh National Park and implications for conservation	
Ha Thang Long, Nguyen Van Tay, Nguyen Ai Tam, Nguyen Thi Kim Yen & Ngo Van Thang.....	171
<i>Lorisicola mjobergi</i> (Stobbe, 1913) sensu lato (Insecta, Psocodea, Phthiraptera, Ischnocera, Trichodectidae) from two <i>Nycticebus</i> species (Mammalia, Primates) from Vietnam, with notes on the genus <i>Lorisicola</i> Bedford	
Eberhard May.....	179
SHORT COMMUNICATIONS	
One jump closer to extinction: Five grey-shanked douc langurs (<i>Pygathrix cinerea</i>) shot dead	
Govinda Lienart.....	203

