Project S-99/05-P

CITES PROJECT PROPOSAL

SECTION 1 - PROJECT IDENTIFICATION

1.1 Title of Project: Assessment of Status and Sustainability of Trade in the Common Rat Snake (*Ptyas mucosus*) on Java, Indonesia.

1.2 Project Number: S-99/05-P

1.3 Geographic Scope: Java, Indonesia

1.4 Implementation Indonesian Institute of Science (LIPI)
Directorate General of Forest Protection and Nature Conservation (PHPA)
IUCN/Species Survival Commission

1.5 Duration of the Project: Six months, commencing as soon as funds are available

1.6 Cost of Project: US$ 69,000

1.7 Project Summary

The Common Rat Snake (*P. mucosus*) is widely distributed in tropical Asia where it is found in many habitats, including disturbed areas such as agricultural fields and rice paddies. In the 1980s, it was exploited in large numbers for its skin. Data available to CITES indicates that trade peaked in 1990, when 2.9 million skins were recorded in international trade. Much of the reported trade stems from animals caught in Indonesia.

In 1992, the status of the species was evaluated under the provisions of Resolution Conf. 8.9, and it was reported that trade was suspected to be the major cause of decline of this species. A number of recommendations were made to the CITES Animals Committee, including a request that the Management Authority of Indonesia inform CITES of the scientific basis for its capture quotas. Subsequently, in the absence of scientific information, the Standing Committee recommended to the Parties not to permit import of specimens of this species originating in Indonesia. This recommendation was communicated to the Parties in Notification to the Parties No. 775. Considerable domestic trade, nonetheless, still occurs.

A brief study of trade in *P. mucosus* was conducted by the Indonesian Institute of Sciences in 1994. However, the CITES Animals Committee considered that the data collected was insufficient for the purposes of assessing the effects of trade. As a consequence, CITES recommended further study as a precondition to resumption of international trade in this species. This project is a response to that need, being designed to provide those data necessary to assess the present status of this species and the probable effects and sustainability of harvest.

SECTION 2 - BACKGROUND AND PROJECT CONTRIBUTION TO OVERALL CITES IMPLEMENTATION

2.1 Background

The Common Rat Snake (*P. mucosus*) is a non-venomous snake in the Colubridae family that reaches 2.5 metres in length and 5-10 centimetres in girth (Boeadi, unpublished manuscript). This species is widely distributed in tropical Asia, occurring from Iran and Afghanistan to Indochina, Taiwan and the Greater Sunda region. Its distribution is summarized by Anon. 1992. In Java, it inhabits many habitats, including disturbed areas such as agricultural fields and rice paddies, where it preys on frogs, lizards and rats. Little is known about the reproductive biology of the species, although based on 37 records of oviductal eggs or vitellogenic ovarian follicles of females harvested in central Java between November and January, clutch size ranged from 4-25 with an average of thirteen (Boeadi et al., 1997).

P. mucosus was listed in Appendix III of CITES between 13 January 1984 and 18 January 1990. Therefore, the trade data reported to CITES is less complete than for species included in Appendix II. Nevertheless, an analysis by TRAFFIC International (Jenkins and Broad, 1994) showed that very substantial international trade in *P. mucosus* took place during this period. Information available to CITES indicated an annual average of 1.5 million skins, but this is certainly an underestimate because trade was believed to have been markedly under-recorded; for example, in 1984, imports as recorded by the U.S. FWS (734,000 skins) exceeded total world trade as recorded by CITES (713,000). Peak global trade during this period amounted to just under 2.7 million in 1986, but trade in 1990, the first year when there should have been reasonably complete reporting under CITES, reached 2.9 million, making it apparently the most abundant reptile species in trade at that time.

Much of the reported trade relates to animals caught in Java and Sumatra. Trade of *P. mucosus* skins from Indonesia declined from two million in 1986 to 796,337 in 1988. However, exports increased in 1989 to 1,034,790, plus 610 kg and 1,059 m^2 of skins. During this period, Indonesian export quotas for the species were exceeded in some years, such as in 1989. Quotas were first set in 1989 at 915,000, but were reduced in subsequent years to 250,000. Quotas were also set for a related species, *P. korros* at 245,000 in 1984, reduced to 10,000 by 1991 (Anon. 1992). Comprehensive data on international trade in *P. mucosus* is provided by Anon. (1992).

The EU and the USA accounted for over 70 per cent of declared trade during 1984-1989, with the EU alone (primarily Germany, Italy, the Netherlands, Spain and the U.K.) accounting for just over half of all trade. However, in 1990, Hong Kong accounted for 65 per cent of all declared world trade (net import of 1.8 million skins). It seems likely that Hong Kong was importing substantial quantities before this, but that much of the trade went unrecorded. In contrast to EU imports, US imports declined from 730,000 in 1984, to 140,000 in 1989 and 30,000 in 1990. Japanese imports are insignificant by comparison, but do show an increase from zero in 1984 to 70,000 in 1989, although by 1990 they declined to 14,000. It is unclear whether these changes reflect real changes in trade or in the patterns of recording.

In 1992, the Review of Significant Trade under the provisions of Resolution Conf. 8.9 (Anon 1992) noted that trade was suspected to be the major cause of decline that had been reported for this species (at that time included in CITES Appendix II). A number of recommendations were made to the CITES Animals Committee, including a request that the CITES Management Authority of Indonesia inform the Animals Committee of the scientific basis for its capture quotas and introduce a system to ensure that exports not exceed those quotas.

In November 1993, in response to a recommendation from the Standing Committee, Parties were requested not to permit imports of specimens of this species originating in Indonesia

until the Animals Committee's recommendations had been implemented. Considerable domestic trade is known to occur. *P. mucosus* has long been captured in large numbers in East and Central Java, and perhaps on Sumatra for use in the leather industry.

A brief study of trade in *P. mucosus*, based primarily on interviews and examination of skins in slaughterhouses, was conducted by the Indonesian Institute of Sciences (LIPI) in 1994. However, the CITES Animals Committee considered that the data collected and the accompanying report were insufficient for the purposes of assessing the effects of trade. As a consequence, CITES recommended further study as a precondition to resumed international trade in skins of this species. This project is a response to that need, being designed to provide the data necessary to assess the present status of the species and the probable effects and sustainability of harvest.

It should be noted that the results of a brief study by Boeadi et al. (1997) suggested that the impact of collecting on natural populations in Java might not be as severe as previously suspected. This was deduced from the fact that there was a relatively high number of male snakes collected, as well as high proportions of reproductive females. This could be a consequence of the fact that *P. mucosus* feeds on prey that may have increased in abundance due to human agricultural activities and because of the relatively large clutch size and high associated potential rates of population growth. Furthermore, harvesting is highly concentrated, occurring at times of the year when agricultural workers have free time to search for snakes.

2.2 Project contribution to the overall implementation of CITES

This project will ascertain whether the population of *P. mucosus* is sufficiently robust to allow continued sustainable trade and make recommendations relating to the level and age class for capture and management of harvesters and harvesting practices. Other recommendations relating to the conservation of *P. mucosus*, and safeguarding of its habitat will also be made.

SECTION 3 - NEEDS AND RESULTS

3.1 Needs

The project responds to a request from the CITES Animals Committee.

3.2 Results

The result of this project will depend on the outcome of the status survey. It is likely that the project will result in recommendations relating to the setting of revised quotas for sustainable exploitation of the species.

3.3 Assumptions to achieve results

Suitable counterparts available for training and implementation;
Indonesian authorities provide adequate assistance to any experts to have access to the selected sites.

Indonesian authorities will implement recommendations resulting from the study.

SECTION 4 - OUTPUTS, ACTIVITIES, WORK PLAN AND TIMETABLE, BUDGET, FOLLOW UP

4.1 Outputs

A comprehensive report (in English and Indonesian) to the Indonesian Scientific and Management Authorities and CITES Secretariat regarding the status of *P. mucosus* including an assessment of present harvest levels. This will contain an assessment of the effects of past and present trade and recommendations relating to the implementation of CITES, particularly in regard to Article 4.1 of the Convention.

4.2 Activities

Field activities will take place on the island of Java for a period of seven months. The first month of the project will be devoted to training of Indonesian scientists and counterparts involved in the project and choosing suitable field sites. Data will be collected on the status of the species in the wild, on the trapping techniques, past and present capture levels and population trends as judged by local inhabitants. The following main objectives will determine field activities:

to assess the present status of *P. mucosus*, and to estimate maximum and minimum population sizes based on population densities and extent of available habitat within its range;

to establish the methodology, base line data and a framework for long-term monitoring of *P. mucosus* by LIPI*;*

to collect biological and ecological data on the species, particularly with regard to age class structure, habitat preference and ranging, and if possible, on breeding;

to provide training of Indonesian field staff from relevant institutions building up capacity to implement recommendations relating to the monitoring of population;

to assess current levels and age structure of harvest and gather data on domestic and international trade in the species;

to provide recommendations for the sustainable management of harvest of *P. mucosus* populations, including capture quotas if sustainability of off-take is to be assured;

Methodology

Two different kinds of activity will be undertaken:

(1) examination of harvested animals (dissections in the slaughterhouse, following previous work done for pythons and varanids in Sumatra (see Boeadi et al., 1997) will provide data on basic biology and characteristics (sex and reproductive status) of capture. Data collection consists of examination, measuring and weighing of snakes brought in to be killed and skinned, to obtain data on reproduction and feeding habits. The Indonesian Institute of Sciences (LIPI) has already conducted this type of research (Boeadi et al., 1997), focusing on rat snakes and cobras. This work will be carried out principally by Indonesian scientists with supervision and training provided by a herpetologist with relevant expertise.

(2) field study, to investigate aspects of biology, ranging behaviour and other important parameters. Radiotelemetry would be employed to determine habitat use. It is anticipated that this would require a consultant herpetologist, with appropriate experience, to implement much of the work. Data would be used to examine the degree to which *P. mucosus* relies on disturbed agricultural habitats, which would determine the long-term vulnerability of harvested populations. Trapping and marking snakes would enable an assessment of the age-class structure of wild populations, to be compared with that found in the slaughterhouses.

4.3 Work plan and Timetable

Training and site selection: 2 weeks
Research and Reporting: 4.5 months
Amending report after peer review: 1 week
Preparation of report for publication: 1 week

4.4 Budget (see attached)

Budget for Common Rat Snake (*P. mucosus)*

10	**Project Personnel**	**USD**
1100	Project personnel	
	Salary, Principle investigator (assumes 6 man-months. Responsible for training, data analysis and reporting)	24,000
	Salary, Indonesian counterparts (LIPI personnel)	6,000
	Field subsistence (all personnel under 1100)	6,000
1300	Administrative support personnel	1,500
1600	Travel on official business (includes vehicle hire, international and domestic flights)	8,000
40	**Equipment and Premises**	
4100	Expendable equipment	3,000

4200	Non-expendable equipment (includes radiotelemetry equipment)	13,000
50	**Miscellaneous**	
5100	Operation and maintenance of equipment (includes repair and insurance of equipment)	500
5200	Reporting cost (includes review, translation, printing, distribution)	4,000
5300	Sundry (miscellaneous costs including visas, permits, etc.)	3,000
	TOTAL	**69,000**

4.5 Cash Advance Requirements

All funds for field work are needed in advance of project implementation. Funds for publication and distribution of final report, and final installments for consultant fees can be held back until completion of all tasks in terms-of reference and publication of final report.

4.6 Follow up

Report should be distributed for peer review and subsequently submitted to CITES Animals and Standing committees.

SECTION 5 - INSTITUTIONAL FRAMEWORK AND EVALUATION

5.1 Institutional Framework

This project will be implemented by experts approved by the National CITES Authorities in consultation with the CITES Secretariat.

5.2 Evaluation

Evaluation of the research findings and conclusions will be made during peer review process.

SECTION 6 - MONITORING AND REPORTING

6.1 **Progress Reports** Brief report to be submitted mid-way through the project.

6.2 **Terminal Reports** Final report to be completed within four months of completion of field work.

6.3 **Financial Reports:** Interim report due within two weeks of completion of field work. Financial report due within two weeks of publication of final report.

6.4 Terms and Conditions

6.4.1 Non-expendable equipment purchased by the project to be donated to counterpart organizations after the project with the provision that it will be made available to future CITES projects.

Literature consulted

Anon. 1992. *Review of Significant Trade in Animals Listed in Appendix II of CITES.* Final report to the CITES Animals Committee. Prepared by the World Conservation Monitoring Centre and IUCN/SSC Trade Specialist Group.

Boeadi unpublished (1995). A report on Jali Snake (*Ptyas mucosus*) survey in central and east Java. Indonesian Institute of Sciences. (Submitted to CITES Animals Committee).

Boeadi, Shine, R., Sugardjito, M. Amir, and M. H. Sinaga. 1997. Biology of the commercially-harvested ratsnake (*Ptyas mucosus*) and cobra (*Naja sputatrix*) in central Java. *Mertensiella* (in press).

Jenkins, M. and Broad, S. 1994. *International Trade in Reptile Skins: a review and analysis of the main consumer markets, 1983-91*. TRAFFIC International, Cambridge, UK. (Species in Danger Series).