The Slow Loris in Indonesia:
The Rise in Illegal Wildlife Trade

(Proceedings of the Seminar on Slow Loris Conservation, Bogor-Indonesia, December 2010)

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Preface

The slow loris (*Nycticebus sp.)* is one of Indonesia's wildlife species which is threatened with extinction. The Javan slow loris (*Nycticebus javanicus*) is included in the category of 'endangered' species on the IUCN Red List, while the Greater slow loris (*Nycticebus coucang*) and the Bornean slow loris (*Nycticebus menagensis*) are classified as 'vulnerable' (Nekaris, Blackham & Nijman, 2008). In Indonesia, the slow loris is protected by law in the Act No.5 of 1990 and PP. 7 / 1999; however, in this law only the *Nycticebus coucang* is mentioned. This is a result of the fact that Indonesian protection laws have not been revised after taxonomic revision of the *Nycticebus* took place in 2006, revising from *N. coucang coucang*, to *N. coucang*, *N. javanicus* and *N. menagensis* (Nekaris & Jaffe, 2007). This leaves an important gap in the national protection laws for an endangered species such as the Javan slow loris.

Little information on the slow loris has been published, but there is general consensus that the slow loris in Indonesia is under severe threat as a result of habitat loss and illegal trade. Loss of habitat was once considered the greatest threat to the survival of the slow loris, but recent research has shown that now the illegal wildlife trade might be having the greater impact on population numbers. Slow lorises are in high demand both as pets and for traditional medicine (Daoying, 1999; Starr, Nekaris, Streicher & Leung, 2010). Although both Indonesian and international protection laws prohibit the trade in slow lorises, still they are sold openly in markets or roadside stalls all over Indonesia. According to WCU (Wildlife Crime Unit), the slow loris is one of the most traded primate species in Indonesia, second only to the long-tailed macaque (Adhiasto Dwi, in personal communication).

It is evident that law enforcement with regard to the slow loris trade in Indonesia is essential. Factors that hinder the enforcement of relevant laws must be identified and addressed. Another important concern is that buyers are generally not aware that they are buying a slow loris, a protected species, being misled by sellers who claim it is a cuscus, a marsupial from eastern Indonesia which is often mistaken for a slow loris. Awareness about the slow loris species needs to be increased within local communities as well as amongst law enforcement officers.

Since 2008, Yasasan IAR Indonesia (International Animal Rescue Indonesia) has run the first specialised rehabilitation programme for the slow loris species in Indonesia. Currently, more than 100 slow lorises live at the IAR rehabilitation centre, received from confiscations or voluntarily surrendered by private owners. IAR hosts a PhD student in collaboration with Oxford Brookes University, undertaking research on the determinants of the success of rehabilitation and release programmes for slow lorises. Several students from the "Nocturnal Primate Research Group" from the University of Indonesia have also conducted research on slow lorises at IAR's centre for the bachelor's or master's degree. IAR furthermore has a continuous educational programme to raise awareness of the loris species.

The Seminar on Slow Loris Conservation in Indonesia, with the theme "*Can we ensure the survival of one of the most endangered primates in the world*?" was organized by Yayasan IAR Indonesia on December 9th, 2010 at IPB ICC (IPB International Convention Center) in Bogor on the island of Java, Indonesia. The Seminar was supported by several sponsors, including the Ministry of Forestry of the Republic of Indonesia, International Animal Rescue – United Kingdom, Hong Kong Ocean Park Conservation Foundation, The Mohamed bin Zayed Species Conservation Fund and Pro Wildlife. The printing and distribution of the proceedings are sponsored by the Rufford Small Grant Foundation.

The objectives of the Seminar on Slow Loris Conservation were to:

1. Increase awareness and knowledge of the slow loris species of Indonesia, particularly amongst implementers of the law to increase law enforcement, and press for a revision of the taxonomy of the *Nycticebus* species in national protection laws.
2. Increase awareness of the fact that the Javan slow loris is one of the 25 most endangered primates in the world.
3. Highlight the plight of the slow loris in Indonesia, including the extent of the illegal trade and the difficulties encountered in rehabilitation and release programmes, thereby emphasising the need for increased conservation and law enforcement efforts.
4. Openly discuss possible solutions to save the slow loris from extinction.
5. Emphasise the need for a conservation action plan for the slow loris.

The Seminar on Slow Loris Conservation was divided into four sessions. The topic of the first session was ' *The slow loris species in Indonesia: conservation status, differentiation of species and ecological aspects'* with as presenters Jarot Arisona M.Sc. from the University of

Indonesia, and Dr. Karmele Llano Sanchez and Nicolien de Lange from Yayasan IAR Indonesia. The presenters of the second session with the topic '*Trade of slow lorises: The main threat to the survival of the slow loris'* were Chris Shepherd of Traffic Southeast Asia and Maman S. Hut, the Head of Administrative Unit SPORC Eagle Brigade Indonesian Ministry of Forestry. Session three, with the topic *'Rescue, rehabilitation and release programs'* was presented by Dr. Paolo Martelli, the Chief Veterinarian of Hong Kong Ocean Park, Richard Moore, PhD Student from Oxford Brookes University and Dr. Ulrike Streicher, a specialist wildlife veterinarian in Vietnam. The fourth session consisted of a discussion, guided by the moderators from session one to three: AR Darma Jaya S from Yayasan IAR Indonesia, Suer Suryadi of the SWP and Resit Sozer of Cikananga, with moderator Dwi Adhiasto from WCS (see Appendix 1 for the full agenda of the Seminar, and Appendix 7 for a list of abbreviations).

Participants in the Seminar included representatives from Government Agencies (National Park, BBKSDA, BKSDA, SPORC, PPNS PPH, Customs Investigators, Police Department), NGOs (PERHAPI, FFI, WCS, LASA), Academics (Student-UI, IPB, UGM, lecturers, researcher), and the Center for Primate Studies IPB (see Appendix 2 for the full list of attendees).

The Seminar also received press attention, in both print and electronic media. Presence from the press included Gatra, the Jakarta Post, Berani Children Magazine, Change Magazine, Respect Magazine, Parent Guide Magazine, Kompas, hukumonline.com, Jakarta Globe and www.beritalingkungan. com. Some radio and television journalists also came to the Seminar, including representatives of 68H-News Green Radio, Antara, Coverage 6 SCTV and Tempo TV and representatives of the Society of Indonesian Environmental Journalist (SIEJ).

Executive Summary

Three slow loris species live in Indonesia: *Nycticebus coucang*, *N. javanicus* and *N. menagensis.* All three Indonesian slow loris species are under severe threat as a result of habitat loss and illegal trade for pets or for traditional medicine. The Javan slow loris is even named as one of the 25 most endangered primates in the world. Although both Indonesian and international protection laws prohibit the trade in slow lorises, still they are sold openly. In 2010, Yayasan IAR Indonesia, which operates the only specialised rehabilitation facility for slow lorises in Indonesia, organised the Seminar on Slow Loris Conservation in Indonesia, with presentations on slow loris ecology and identification, trade and law enforcement, and slow loris conservation efforts. Government representatives, NGOs, university students and media attended the seminar.

The main conclusion from the seminar was that, in order to significantly reduce the illegal trade in slow lorises, a multi-pronged approach should be taken, including a more cohesive, cooperative approach between NGOs, an awareness campaign, regular monitoring in the markets with reports to government and media, and better enforcement of existing laws. There was general consensus that targets should be set for a minimum of confiscations by authorities of 10 cases per year, which should be broadly published in the media. More research is needed into the captive care, rehabilitation process and release procedures to maximise success in this area.

IAR has committed to continuing with its research, education and awareness activities, and providing information to the media about the species, trade and conservation status of the slow loris. IAR has also committed to conducting another slow loris meeting or seminar in 2011 to determine follow-up activities from this seminar, progress in agreed commitments and to evaluate the results obtained from the seminar. IAR requests from the Forestry Department KSDA to increase law enforcement efforts and execute 10 cases related to the slow loris trade in 2011. IAR requests from the media to get public attention for the issues related to the slow loris.

Table of Contents

Preface i
Executive Summary v
Table of Contents vii

1. The Slow Loris in Indonesia 1
   a. The Slow Loris on the map 1
   b. Slow Loris species in Indonesia 3
   c. Status Konservasi Kukang 7
   d. Threats faced by the slow loris 7

2. Aid for the Slow Loris 9
   a. Rescue, Rehabilitation and Release 9
   b. Medical Treatment 19

3. The Slow Loris Trade 25
   a. The situation of the wildlife trade 25
   b. Loose law enforcement and the lack of public awareness 30
   c. What should be done – as soon as possible? 33

4. Conclusions, Recommendations and Commitments 37

Appendix 1: Nature Protection Laws in Indonesia 39
Appendix 2: Attendance List 40
Appendix 3: Agenda Seminar 43
Appendix 4: Literature and References 45
Appendix 5: Several Publications on the Seminar 47
Appendix 6: Pictures of the Seminar 48
Appendix 7: Abbreviations 49

1. The Slow Loris in Indonesia

a. The Slow Loris on the map

The Slow loris is a mammal species which is included in the sub-order prosimian of the order Primates. Worldwide, there are five slow loris species: the Greater Slow Loris (*Nycticebus coucang*); the Bornean Slow Loris (*Nycticebus menagensis*); the Javan Slow Loris (*Nycticebus javanicus*); the Bengal Slow Loris (*Nycticebus bengalensis*); and the Pygmy Slow Loris (*Nycticebus pygmaeus*). Although the different species have many similarities, they can be distinguished by size, weight, markings on the face, colour composition and possibly also by behaviour (U. Streicher in personal communication).

The slow loris is a nocturnal, arboreal species. They move slowly from branch to branch in the trees in tropical forests. Slow lorises are very agile and are proficient climbers, able to hang on branches using only their legs. Although generally considered solitary (Wiens, 2002), they also frequently interact and may live in social groups (I.Winardeti, R.Moore and K.Sanchez, personal communication).

Slow lorises are omnivorous: their diet includes fruit, tree sap, and small animals such as lizards, insects, birds and bird eggs (Wiens, 2002, Streicher, 2004). Lorises have low reproductive rates, usually giving birth to singletons with long interbirth intervals, long gestation periods, extended periods of offspring dependency, and a late age at first reproduction (Wiens, 2002). The life span is about 20 years, age of first offspring between 17 to 24 months.

Baby slow loris

To protect itself, the slow loris often covers its head with both arms. This position allows the loris to take in the toxin produced by a gland on its elbow. With this toxin, the slow loris bite can cause swelling, fever and pain, and can be deadly for humans who suffer allergic reactions and anaphylatic shock (U. Schneider in personal communication). Slow lorises are the only toxic primates in the world.

Slow loris species can be identified by several characteristics, such as different whistling sounds or face masks. However, when identifying slow loris species, some considerations should be borne in mind: for example, in an animal in poor condition certain characteristics may be distorted, for example the weight might fall below average values for that slow loris species (Llano Sanchez, 2010; Nekaris & Jaffe, 2007). Young slow lorises are difficult to identify, because different species look similar having a soft and smooth body covered by white fur. Movement is stiff, gripping power is weak and the head is disproportionately large compared to the body. Characteristics of the fur can be used to identify young lorises (Llano Sanchez, 2010; Nekaris & Jaffe, 2007).

Slow loris distribution area

The distribution of all slow loris species is limited to Southeast Asia. The Bengal slow loris lives in Myanmar, Thailand and Laos; the Pygmy slow loris is found in Vietnam and Cambodia (Streicher, 2010). The Greater slow loris occurs in Indonesia, Malaysia, Thailand and Singapore (Nekaris & Streicher, 2008a). The Javan slow loris is native to western and central Java (Nekaris & Shekelle, 2008), the Bornean slow loris occurs in Brunei, Indonesia and the Philippines (Nekaris & Streicher, 2008b).

Dr. Ulrike Streicher shows the face of two slow loris species, the Pygmy slow loris and the Bengal slow loris (Streicher, 2010):

Pygmy slow loris

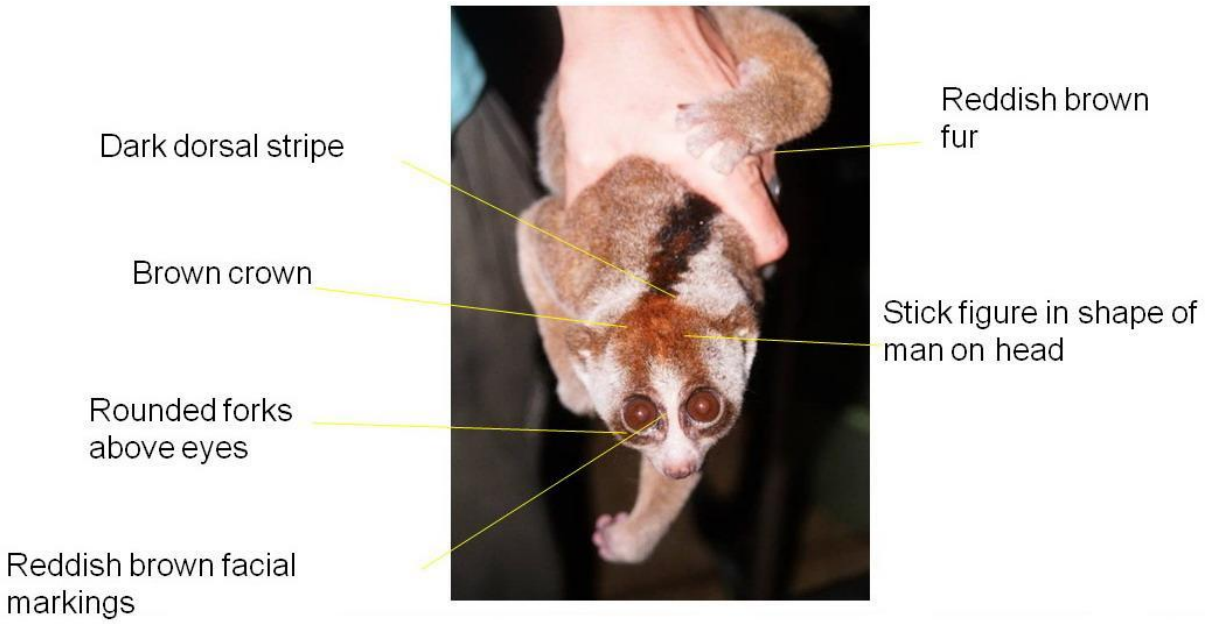
Bengal slow loris

The weight of the Pygmy slow loris ranges from 250 to 770 grams, with a small body and smooth brown fur with silver lines.

b. Slow Loris species in Indonesia

In Indonesia, three slow loris species are found, namely the Greater slow loris, Bornean slow loris and Javan slow loris (Llano Sanchez, 2010[1]).

Greater Slow Loris (*Nycticebus coucang*)



Nycticebus coucang identification

[1] Llano Sanchez, K. (2010). *Species differentiation: an overview of the different species of Indonesian lorises – how are they identified.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

There is high variability between individuals of this species. They have a reddish or brown fur, with a size of 240-295 mm and a weight of 480-710 grams. On the head, Greater slow lorises have a fork pattern, the pattern on the forehead is not clear.

Bornean Slow Loris (*Nycticebus menagensis*)

Nycticebus menagensis identification

The Bornean slow loris has similarities to the Greater slow loris; the most striking differences are a smaller size and lower weight (270 mm and 280-600 grams, respectively). The colour of the fur is light brown or blond, the fork pattern on the head is light brown, the pattern is not clear on the forehead.

Javan Slow loris (*Nycticebus javanicus*)

Nycticebus javanicus identification

The Javan slow loris is endemic only to the island of Java in Indonesia; it has only been known to occur in west and central Java (Nekaris & Shekelle, 2008). Compared with the Greater and Bornean slow loris, the Javan slow loris has differences in the darkness and length of the fur. The Javan slow loris is heavier (800-1200 grams) with a size of 290 mm. The hair colour is greyish brown, with a blackish brown fork pattern encircling the eye and firmly connected.

Jarot Arisona - Researcher from the Science Faculty, University of Indonesia - explained that the Javan loris (*Nycticebus javanicus*) is endemic to Java (Geoffroy 1812), and has been found in Bodogol Forest National Park, Mount Gede Pangrango, West Java. Arisona presented some of the results of the research carried out in Bodogol[2]:

1. The Javan slow loris population is not distributed evenly. Some individuals live alone in one area, while there are also roaming individuals whose range overlaps with other slow lorises.
2. The observed density of Javan slow lorises in primary forest is lower (4.29 individu/km^2) than the observed density of Javan slow lorises in secondary forest (12.16 individu/km^2).
3. The composition of Javan slow lorises observed in both primary and secondary forest showed the number of adult individuals to be higher than younger individuals.
4. Javan slow lorises have been observed living as solitary individuals as well as in groups.
5. The observed groups consisted of two individuals, while the composition of each group varied; the pair consisting of an adult male with an adult female, or a pair consisting of two subadults or an adult female with her baby.

According to Arisona, the Javan slow loris was not included in the Species Conservation Programme of the Gunung Gede Pangrango National Park. According to him, there is hardly any information on Javan slow loris population size, habitat, behaviour and ecology. Conservation programmes are very difficult to plan and implement without data on these

[2] Arisona, J. (2010). *Aspects of Loris Ecology*. Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

issues. Jarot received most of the information on the occurrence of the slow loris from local communities[3].

From his research, Arisona got many interesting findings regarding Javan slow loris behaviour, including:

1. The Javan slow loris more frequently showed a neutral response (58.33%) than a negative response (41.67%). This could be an indication that human interference in Bodogol forest is still low.
2. Javan slow loris activity patterns in primary forest were significantly different from slow loris activity patterns in secondary forest.
3. Female slow lorises are more active than male slow lorises.
4. Although slow moving, slow lorises have a variety of postures in motion: sitting 24%, climbing down 12%, sleeping ball 12%, quadropedal walk 10%, upside down quadropedal walk 10%, climb up 9%, quadropedal stand 6%, bridge 6%, quadropedal hanging 5%, bipedal hanging 4%, tripedal hanging 2%.
5. The Javan slow loris most often uses twigs or branches of 5-10 cm in diameter (36.11%), small twigs with a diameter of less than 1cm (25%), branches or trunks with a diameter of more than 10 cm (22.22%), large twigs with a diameter of 1 - 5 cm (13.89%), and liana (2.76%).
6. The level of vegetation used were small trees of 5-35 cm in diameter (52.78%), trees with a diameter of more than 35cm (30.56%), and saplings of 5-10 cm in diameter (16.67%).
7. Observed tree species used by the slow loris in its activities include the Rasamala (*Altingia excelsa*), pine trees (*Pinus perkusii*), Pasang (*Quercus lineata*), Rattan (*Calamus sp*.), Mangong (*Macaranga rhizinoides*), Ki Africa (*Maesopsis emenii*), and Kaliandra (*Caliandra calothryrsus*).

[3] Information on the presence of Javan slow lorises received by Jarot Arisona: 1. Suyanto (2002); TNGH information from local community; 2. Gurmaya *dkk*. (1992); TNUK information from officials and local community; 3. Wirdateti (2003); Cigadok, Panarikan & G. Butak south of Sampora; 4. Forest and gardens in Majalengka, Garut, Sumedang, Simpang Tilu (information from community); 5. Gunung Papandayan (personal obesrvation 2003); 6. Bambu forest on the river Ciliwung Depok (information from community); 7. Hutan Kota UI (information from community); 8. Hutan Kota Kemayoran (information from community); 9. Supriatna & Wahyono; TNGGP (2000).

c. Status Konservasi Kukang

In 2006, five types of slow loris were identified. In 2007, all five slow loris species were entered into Appendix 1 of CITES[4]. With this inclusion of the slow loris in the list of endangered species, the international trade in slow lorises originating from natural habitat must be strictly controlled and is only allowed for certain non-commercial purposes with special permission (Nekaris & Jaffe, 2007).

Since 2008, the Javan slow loris has been continuously included in the "IUCN[5] Red List of the 25 most endangered primates in the world" (Mittermeier et al., 2007; Llano Sanchez in personal communication). The IUCN Species Programme in cooperation with the IUCN Species Survival Commission (SSC) assesses the conservation status of species in order to highlight those threatened with extinction. In the so-called IUCN Red List, the Greater slow loris and the Bornean slow loris are classified as 'vulnerable', while the Javan slow loris is classified as 'endangered' (Nekaris & Shekelle, 2008; Nekaris & Streicher, 2008a; Nekaris & Streicher, 2008b).

In 2006, the *Nycticebus coucang javanicus* as well as the *Nycticebus coucang menagensis* were officially recognised as separate species, changing the classification to *N. javanicus* and *N. menagensis*, respectively. However, the Indonesian government has not revised the protected species list accordingly, and currently only the *N. coucang* is mentioned in the relevant protection laws (Act. 5/1990 on Conservation of natural resources and ecosystems and Government Regulation No. 7/1999 concerning the preservation of wild plant and animal species; see also Appendix 1). The maximum penalties for violators are five years in prison as well as a fine of Rp. 100.000.000 (one hundred million rupiah) or $10.000 US.

d. Threats faced by the slow loris

A major threat to the survival of the slow loris is habitat loss (according to Whitten et al. in 1999 deforestation in Java was up to 90%); however, it has been claimed that the illegal wildlife trade is currently the biggest threat to wild slow loris populations (Daoying, 1999; Starr et al., 2010). According to WCU (Wildlife Crime Unit), the slow loris is one of the most

[4] Convention on International Trade in Endangered Species of Wild Fauna and Flora
[5] International Union for Conservation of Nature

traded primate species in Indonesia, second only after the long-tailed macaque (Adhiasto Dwi, in personal communication).

Both the domestic and international trade in slow lorises takes place in various ways, ranging from open selling of slow lorises on roadsides to smuggling of lorises in poorly ventilated, overcrowded cages. In Indonesia, slow lorises are sold on the street, in traditional animal markets, as well as in city malls, for the pet trade or for traditional medicine. Slow lorises are caught from the wild by hunters, then sold to traders who will sell them to consumers. Although both Indonesian and international laws ban the trade in slow lorises, illegal wildlife trade is a major threat to the species' survival (Nekaris & Jaffe, 2007).

2. Aid for the Slow Loris

The journey the slow loris undergoes from its natural habitat to the animal markets is a thoroughly miserable one. Slow lorises suffer because they are placed in small, overcrowded cages, often in broad daylight or in full sun, with inadequate care and the wrong diet. Their teeth are often broken off using pliers to avoid the handler being bitten by the toxic slow loris (De Lange, 2010).

Efforts to protect the slow loris and reduce the suffering can - and should - be made at various stages; including protection of slow lorises in their natural habitat, rescue from the trade once caught, and facilitating the process of rehabilitation and release after rescue. Although protection of slow lorises in their natural habitat is preferred, it is important to provide facilities for slow lorises that end up in the wildlife trade (Karmele Llano Sanchez, personal communication).

a. Rescue, Rehabilitation and Release

Slow lorises that are voluntarily surrendered by their owners or confiscated from the illegal wildlife trade are first quarantined in a rescue or rehabilitation centre. Here, the animals are given a medical examination and treated if necessary. After they have been declared healthy, they enter the rehabilitation and socialisation process. This stage will last as long as necessary until the slow loris is ready to be released back into the wild. Not all lorises will ever get to this stage; indeed, the amount of permanent residents in rescue and rehabilitation centres is large. Post-release monitoring is an important activity to ensure survival of released individuals *(*Karmele Llano Sanchez, personal communication).

The following pictures give an idea of the various stages of the process from rescue or confiscation, through rehabilitation at the IAR rehabilitation centre until release:

Slow loris in the wild

Slow loris trading

Teeth of slow loris being extracted by trader

Slow loris kept by people

Arrival of slow loris in IAR

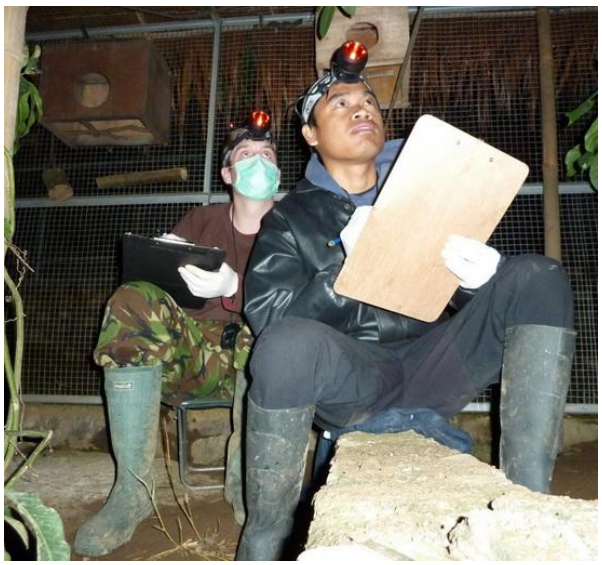
Medical check up

Slow loris quarantine cages

Slow loris nutrition during rehabilitation

Slow loris inside the rehabilitation cage

Enrichment inside the cage



Slow loris observation inside the rehabilitation cage

Preparing habituation cage

Medical check up before release

Setting up the radio collar (*transmitter)*

Radio collar monitoring *(receiver)*

Monitored slow loris

Since 2009, Richard S. Moore, a PhD candidate from the Nocturnal Primate Research Group at Oxford Brookes University, U.K., has been doing research at the IAR rehabilitation centre in Ciapus, West Java. According to Moore[6], the Javan slow loris seems most affected. Rehabilitation and rescue centres cannot keep up with the influx of slow lorises, while surveys show that wild slow loris populations are decreasing drastically. According to Moore, reintroduction programmes have problems and low success rates. Scientific knowledge about

[6] Moore, R. (2010). *Loris release programme in Gunung Halimun Salak National Park: Post release monitoring using radio telemetry.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

the success of rehabilitation and reintroduction programmes for slow lorises is very limited. In addition to Moore's research, only two systematic studies have been done on slow loris reintroductions, and approximately 50 informal reports mention the release of slow lorises but without follow-up. From previous research, Moore concludes there are several common causes for the failure of slow loris reintroduction programmes:

- Reintroduction of the species in the wrong geographical area.
- Release of slow lorises during daylight hours.
- No execution of medical examination before release.
- Limited funding.

According to Moore, slow loris releases should follow the Reintroduction Guidelines as issued by the IUCN, including:

- Examination of taxonomic status
- Quarantine period
- Routine health checks
- Selecting the proper release site
- Period spent in habituation cage before release
- Post-release monitoring

According to Moore, behavioural observations both before and after release will help the programme obtain a higher success rate. The monitoring process will provide a basis for comparison of post-release behaviour, as well as obtain more insight into the behaviour and ecology of the Javan slow loris.

According to Moore, in the pre-release monitoring of slow lorises in captivity, the following things are important:

- Selection of the individuals to be observed
- Establishing their ability to adapt to the radio tracking equipment (radio collars)
- Establishing their ability to eat while wearing the radio collar
- Establishing whether the slow loris is fit and healthy
- Training of basic skills (e.g. obtaining food).
- Ability to adapt to a different climate.

During the next phase, the behavioural monitoring of the slow loris in the habituation cage in the forest, the following are important considerations:

- Reduction in abnormal behaviour
- Familiarisation with the local environment, for example: prey, wild slow lorises in the area, predators.
- The results of these pre-release observations will be the basis for comparison of post-release behaviours (e.g. signs of illness or stress); indeed, behavioural observations continue to be executed as often as possible during the post-release monitoring stage.
- Comparison of behaviours before release with post-release behaviours
- Identify slow lorises in danger
- Monitor the success rate (survival rate) of the release programme.

In behavioural analyses, considerable attention is devoted to abnormal behaviour or a series of behaviours performed repeatedly, for example, continuous licking or swinging of the body in the same direction for a long time. It should be ascertained whether this abnormal behaviour is a way to deal with stress for the time the slow loris spends in captivity – whether abnormal behaviour is a coping mechanism?

Further important considerations include reduction of the time spent in both the rehabilitation process as well as the habituation cage; and enrichment (e.g. branches and tyres) which can help overcome boredom or stress. According to Moore, there is a need to do more research into slow loris behaviour.

Differences in behaviour are one focus of the monitoring. According to Moore the following things should be taken into consideration:

- Reduced browsing behaviour, but hunting behaviour for food in the forest increases.
- Need to provide more food and enrichment.
- New information about the slow loris diet can be obtained from released slow lorises.
- Note the presence of abnormal behaviours or activity; although much preparation may have been done, the slow loris may still not survive. To learn from the successes gained from changes in methods, this information should be shared with

rescue centres and other conservation organisations, as well as raising awareness of abnormal behaviours which result from stressful conditions.

Richard Moore stresses that release in itself is not synonymous with success.

Dr. Ulrike Streicher also shared knowledge about the post-release monitoring and reintroduction programme for slow lorises based on her experiences in Vietnam[7].

Dr. Streicher observed a large influx of confiscated slow lorises in the Rescue Centre for Endangered Primates in Vietnam. At the same time, the wild population dropped dramatically. According to Dr. Streicher, a proper recommendation needs to be submitted to the authority of forest protection in the country.

Dr. Streicher conducted monitoring of nine slow lorises who were released within two years commencing in November 2000. The project was financially supported by the Swiss Embassy and the British RSPCA wildlife division. Dr. Streicher did direct observations as well as radiotelemetry monitoring. Her attention focused on feeding behaviour, home range of the slow lorises, and their survival rate.

Telonics TR-4 VHF receiver

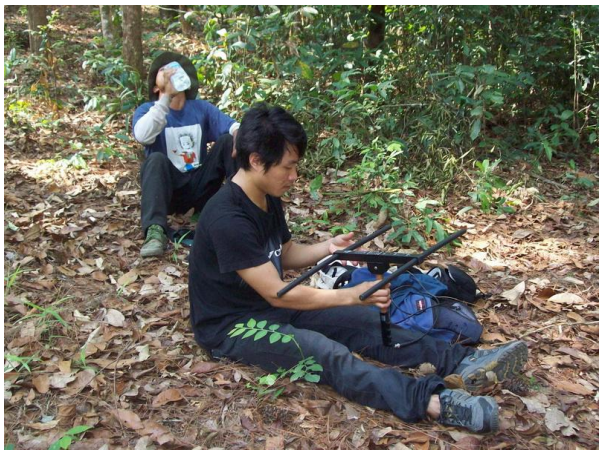
[7] Streicher, U. (2010). *Loris Release programme and Monitoring Post-release: experience in Vietnam.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

For the Radiotelemetry, the following equipment used was:

- Holohil PD-2C transmitters with specifications: weight 3.9 gram, battery life 6 months, distance between lines set at 0.01MHz with a size of 0.6 beats per second.
- Lightweight Telonics receiver TR-4 VHF, with up to 100 channels at intervals of 10 MHz for example the range 164.000-164.990
- Telonics antenna

Setting up Holohil PD-2C transmitter

Slow loris with Hololil PD-2C transmitter



Setting up Telonics antenna

Using Telonics antenna

In this project, released slow lorises were followed as far as possible by direct observation, using headlamps with red light. The duration of observations ranged from 45 minutes to five hours. The post-release monitoring ranged from the first day until more than four months.

Survival rates were as follows:

- 1 slow loris lost the radio collar
- 1 slow loris was lost on the first day
- 2 slow lorises were killed by predators
- 2 slow lorises died from unknown causes (possibly due to low temperatures).

Their diet consisted of: 40% insects, 30% tree sap, 30% other exudates. Their home range was large, between 0.1 - 3.1 hectares, with the distance between sleeping locations (in other words, the distance travelled in one night) ranging between 52 - 289.6 metres, with an average of 97.2 metres.

Several conclusions can be drawn from this study:

- Contrary to expectations, slow lorises had difficulty adjusting to conditions in the wild.
- It is almost impossible to distinguish between individuals from different regions.
- Animals from areas with a different climate have hardly any adaptation strategy when food supply is low and the weather changes are extreme.

According to Dr. Streicher, preliminary recommendations drawn from the project are:

- Never release a slow loris with an uncertain taxonomic status
- Do not forget the importance of the quarantine period
- Before release, train the slow lorises with food from the wild diet
- Release slow lorises in the season where food is readily available
- Release in the climatic conditions which are favourable for slow lorises
- Monitor as often as possible and share the obtained data and knowledge with other parties to improve post-release monitoring standards.

From the observation, important information was obtained that the right time to release in the North of Vietnam may be inappropriate if applied in the South.

The aim of this project was to measure the ability of confiscated slow lorises to survive and settle again in wild habitat. In addition, the project was carried out in an attempt to obtain a solution for the many slow lorises confiscated in Vietnam as well as to make adequate recommendations to be submitted to the authority of forest protection.

The slow lorises in this research were confiscated from traders in northern Vietnam, which at the moment of confiscation were adults; it was therefore assumed they were already of adult age at the time they were removed from their natural habitat. Their age was estimated to be between 5-7 years old. Releases were done individually or in pairs.

The selected release area was a former botanical garden, which is part of Cuc Phuong National Park (a former plantation and primary forest that has been much reduced, with an area of 120 hectares). According to the results, slow lorises preferred the habitat on the edge of the forest. An important factor is that this area is free from hunters. Releases were carried out in the months of March, April, September, October and November.

Releases were done by the soft release method in accordance with the guidelines of the IUCN. For several weeks before the release, the slow lorises live in the habituation cages at the rescue centre, with a radio installed on their necks. Cages are then taken to the release location, where the slow lorises spend another week in the habituation cage. After the cage is opened and the animal released, food is prepared outside the cage at accustomed times of the day. When the released slow loris does not return to the habituation cage for several days, the cage is taken away. Monitoring is done by direct observation with the main focus on feeding behaviour, whereas indirect monitoring by radiotelemetry primarily focuses attention on sleeping locations.

Several slow loris reintroduction programmes are running in Vietnam:

- EPRC: release of individuals to Cuc Phuong National Park. Although there is no post-release monitoring, the project follows the principles from mentioned research (time of release, release area, release in times of high food availability). About 35% of confiscated slow lorises are released in this project.
- Rescue Centre for Endangered Species Dao Tien, in Cat Tien National Park, South Vietnam: release with monitoring since April 2010

Returning to Indonesia, Nicolien de Lange of Yayasan IAR shared some experiences from the rehabilitation and reintroduction programme of the IAR rehabilitation centre in Bogor, West Java[8]. As the first specialised rescue and reintroduction programme for slow lorises in Indonesia, de Lange explained that the mortality rate in the IAR rehabilitation centre has been at 25%, compared with mortality rates of over 90% in other rescue centres. She reminded delegates, however, that although the mortality rate in the rehabilitation centre has been reduced, a high mortality rate in the slow loris reintroduction programmes is still likely.

[8] De Lange, N. (2010). *Conservation status, rescue and confiscations prior to rehabilitation and release*. Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

Having the largest number of Javan slow lorises in captivity in the world, which allows for observations and data collection, the IAR rehabilitation project is also the first project in Indonesia for monitoring and reintroduction of slow lorises and the first project in the world that undertakes this systematic monitoring of Javan slow lorises.

De Lange explained that one of the many challenges encountered are the medical problems that arise from overpopulation in the IAR rehabilitation centre. This calls for efforts to reduce the number of slow lorises brought to rehabilitation centres. She also noted that it takes time to see the success of a rehabilitation and reintroduction project.

Based on programmes that have been implemented, De Lange outlined several conclusions:

- Many Javan slow lorises are still traded.
- Slow lorises which are confiscated before arriving in the markets have a higher chance of successful reintroduction than animals which have been sold in the markets, because upon early confiscation the slow lorises still have intact teeth (100%), while animals surrendered by owners usually have their teeth taken out; only 24% of surrendered animals have the teeth still intact. Teeth are very important for lorises to survive in the wild owing to their unique dental structure.
- More research is needed into slow loris feeding behaviour and ecology in order to succeed in the rehabilitation process.
- More data is needed about slow lorises which have been released.
- More data is needed about the success of monitoring after release.

b. Medical Treatment

Medical treatment is an important element in the success of the rehabilitation and reintroduction process. According to de Lange, one major problem in the rehabilitation process is the tooth problem: in the market, sellers often cut the teeth of slow lorises with nail clippers, because they fear the slow loris's bite. The roots of the teeth stay in the gum, which causes problems with eating, infections and illness. For the slow loris, teeth are very important for survival in the wild. The canines in combination with the toxin may function as a defense mechanism against predators. In addition, the slow loris teeth have a special structure which serves social behaviour and eating. Teeth have a comb-like structure, which is used for grooming and to eat tree sap. Molars are important for catching and eating larger

prey, such as geckos or small birds. To illustrate the problem, De Lange explained that 64% of the slow lorises that arrive at the IAR rehabilitation centre have had their teeth cut; which means that only 36% have a good chance of survival in the wild after rehabilitation.

Dr. Paolo Martelli DVM from Ocean Park Hong Kong said[9] that many rescued animals need medical attention. Their medical needs are diverse. Many arrive with recent or chronic trauma, such as pressure sores. Not a few of them experience chronic stress and abuse. They usually suffer from malnutrition. According to Dr. Martelli, animals needs proper medical care to ensure they are in good condition upon release, both physical and psychological. Also, Dr. Martelli explained the required medical treatment for slow lorises during the rehabilitation process, starting from the facilities, to considerations upon receiving the slow loris, to the process of anaesthesia and dental health.

As stated earlier, the fact of releasing slow lorises back into the wild does not automatically equal success. This is where medical treatment has an important role (in addition, of course, to the process of rehabilitation where slow lorises are accustomed to behaviours and food which they need to survive in the wild). In the research project conducted by Dr. Streicher in Vietnam, each animal was quarantined six weeks before release and medical examinations were done, as well as twice parasitology treatments and Tuberculosis tests.

Quarantined slow loris

Slow loris medical check up

[9] Martelli, P. (2010). *An Overview of Handling and Medical procedures in lorises.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

According to Dr. Martelli, the following basic veterinary facilities are required:

- Hospitalisation cages: warmth, privacy,
- Weighing scales
- Drugs and disposables
- Gas Anaesthesia
- Dental equipment
- X-Ray / Dental X-Ray
- Microscope and stains (diff quick or Giemsa etc)
- Access to diagnostic lab.

Dental X-Ray

Slow loris medical check up

Slow loris undergoing treatment

Dr. Martelli warns of common misconceptions, such as:

- "Lorises are very delicate and don't tolerate handling well": this is not true.
- "They must be handled at night in the dark or with red light because they are nocturnal": they can very well tolerate daylight or normal lamps. Examining them during their rest period is no different to examining any other nocturnal mammal during the day.
- There are no accessible veins, little medicine can be done
- They are difficult patients to anaesthetise
- They eat ants.

First aid and help at arrival time:

- Triage (determine action in patients based on their condition): Euthanasia? Isolation? Treatment? Release? Rehabilitate?
- Quarantine
- Rehydration: “if the mouth works, use it”, SC? IP? IV, IO. Not much SC space, even 10 ml of normal saline or ringers lactate or dextrose 5% will be helpful
- Nutrition: “if the mouth works, use it”, insects, lizards, boiled chicken, fruits
- Thermal comfort
- Reduce stress: keep in a quiet, dark and small space initially
- Antibiotics? Painkillers? Tranquillisers?

Restraint and Anaesthesia

Some examinations and pain free procedures can be done with manual restraint. Handling styles vary. Anaesthesia is needed to perform more in-depth examination or painful, stressful or delicate procedures. One can use Zoletil 3 to 5 mg/kg, ketamine 10 mg/kg, xylazine 1 mg/kg + ketamine 3 mg/kg or isoflurane.

Slow loris restraint and anaesthesia

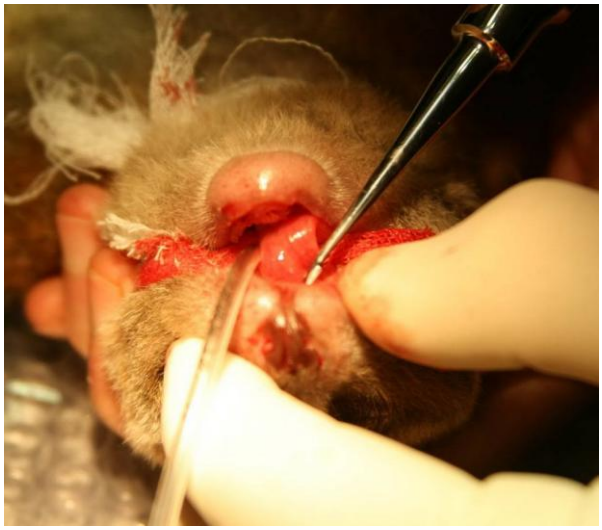
Slow loris undergoing treatment

Giving anaesthesia

Blood samplimg

Special examinations

1. Blood sampling (from cephalic, jugular or femoral veins)
2. Urine sampling
3. Faecal sampling
4. X-Ray.



Dental check up

Wound on the arm of slow loris

Slow loris with eyes sore

Dental X-Ray

Dr. Martelli shared some standard procedures that should be followed:

- Keep records, give ID
- Body weight, hydration status
- General examination, as in other species
- Deparasitise against tapeworms and roundworms: orally or injectable: pyrantel, fenbendazole, albendazole, mebendazole, ivermectine, doxymectine, praziquantel, niclosamide, etc
- Oral examination – Visual or X-Ray.

Specific problems include:

- Necrotising extremities
- Rump pressure sores
- Pneumonia.

Dr. Martelli concluded that the basics are no different from other species. Rescued slow lorises should be moved to a good facility with adequate veterinary care rapidly after rescue. The aim should be full rehabilitation with successful release, to avoid rehabilitation centres filling up. He concluded that with slow lorises, more can be achieved with less because they are small and tough.

3. The Slow Loris Trade

The biggest threat to the slow loris' survival might not come from habitat loss and degradation, but from the illegal wildlife trade (Shepherd, 2010). Slow lorises are sold openly in Indonesia, in animal markets, on the street, or in shopping malls. This illustrates the lack of awareness in society about the protected status of the slow loris and other wildlife. It also indicates that increased public awareness can be an important tool in efforts to protect the slow loris. While large-scale deforestation cannot easily be influenced by the public, the illegal wildlife trade could be reduced if potential buyers were aware that they are breaking the law if they buy a slow loris, and that they will be punished for this (Shepherd, 2010).

a. The situation of the wildlife trade

Maman, S. Hut, the Head of the forestry police SPORC Administrative Unit Eagle Brigade in West Java, witnesses directly the threats to wildlife in Indonesia[10]. From his experience, he confirms the serious threat faced by the slow loris caused by:

- Poaching for maintenance and traditional medicine
- Illegal trade and smuggling of wildlife
- Logging
- Encroachment.

According to Maman, illegal wildlife trade continues because it is amongst the most lucrative businesses in the world. The turnover in the underground trade - although sometimes also conducted openly, as in Indonesia - is estimated to reach up to U.S. $10-15 billion per year. According to Maman, a survey in 2006 showed that the highest number of nature crimes happened in Thailand, with a turnover of U.S. $165,820,945 between 2003 and 2005.

[10] Maman S. (2010). *Main issues of Loris Law enforcement in Indonesia.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

Tiger skin smuggling

Wild animal body parts trading

Rhinoceros horn

Slow loris sold for traditional medicine

Dried slow loris

Caged slow loris for trade

Poachers in Nepal get 16,000 Baht (U.S. $300 - U.S. $500). Local traders can sell at a price to reach ten times as much, 160,000 Baht, while end markets in Hong Kong or China can ask up to 1,600,000 Baht.

Another example of the wildlife trade is the orangutan in Indonesia. A local hunter in Sumatra will get 1,600 baht (U.S. $50) for an orangutan, whereas at the end of the market such as in Thailand, the price will be around 640,000 Baht.

For an Indonesian slow loris, a local poacher will get about IDR 150,000 (U.S. $15). In the domestic market, the price will range from IDR 200,000 to IDR 600,000. In China, prices reached U.S. $390 and in Japan almost ten times as much, U.S. $3,800.

Maman reminds us that wildlife trade is also associated with other crimes: for example, drug dealers use wildlife to conceal narcotics. He tells about a case where 10,000 amphetamine tablets were hidden in the belly of a bear.

Chris R. Shepherd of TRAFFIC Southeast Asia agrees[11] that in parts of Southeast Asia, slow lorises are hunted for the domestic and international wildlife trade for pets and traditional medicine. He states that, although the full impact of wildlife trade is still not certain, in some countries including Indonesia the wildlife trade is a threat to the conservation of slow lorises - probably the biggest threat.

Internationally, slow lorises are traded mostly to meet the demand for pets, despite the fact that they are protected and are on Appendix I of CITES, which means that commercial trade in slow lorises is illegal.

Shepherd explains the chronology of the inclusion of the slow loris in CITES:

- *N. coucang* and *N. bengalensis* were first listed in Appendix II of CITES in 1975.
- All slow lorises were listed in Appendix II in 1977 (under all primates).
- The genus *Nycticebus* was elevated to Appendix I in 2007.

[11] Shepherd, C. (2010). *Loris trade - domestic and international.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

Chris Shepherd stated that, while international trade is a big problem, the domestic trafficking is a bigger threat for the slow loris.

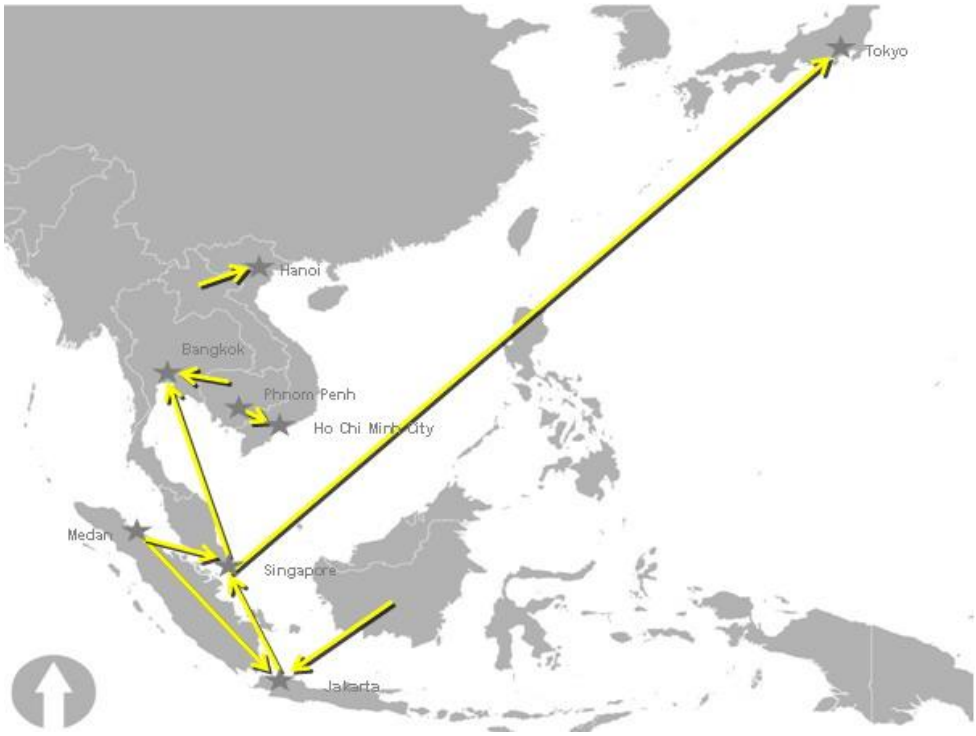
Shepherd repeated the fact that, while there are three slow loris species in Indonesia, only *N. coucang* is included in the national protection laws. However, he emphasised that there must be no tolerance (ZERO quota) on the trade in slow lorises, whether or not people try to argue that the *N. javanicus* and the *N. menagensis* are not specifically mentioned in the law. Actions from the forestry department, in cooperation with police, customs and other agencies (e.g. law enforcement) will be needed to stop the trade in the slow loris and other species in Indonesia.

Indonesia has ratified the ASEAN Wildlife Enforcement Network (ASEAN-WEN), and has declared that it will address the illegal trade through the cooperation of several institutions at the domestic level.

ASEAN-WEN was formed in 2005 as a proactive response to the increasing wildlife trade while at the same time wildlife populations were declining dramatically in Southeast Asia. The main objective of the ASEAN-WEN is to establish a network of law enforcement agencies in ASEAN countries to reduce the illegal trade in wild plants and animals by:

1. establishing inter-agency councils at the national level to monitor the coordination and cooperation between law enforcement officials in the field of trade in wild plants and animals;
2. establishing the ASEAN Wildlife Enforcement Network to exchange information on law enforcement related to the trade of plants and wildlife, and for coordinating regional participation in the Working Group on Wildlife Crime INTERPOL or INTERPOL Wildlife Crime Working Group;
3. supporting the joint efforts of capacity building for better law enforcement.

Shepherd reminded us that, although there are domestic laws in Indonesia prohibiting the trade, as well as the commitment to the ASEAN-WEN, protected wildlife – including slow lorises – is still sold openly in Indonesia. TRAFFIC Southeast Asia has undertaken 66 surveys in bird markets in Medan, North Sumatra. Monthly surveys were conducted between 1997 and 2001, then on an ad hoc basis until 2008, with the last survey in October 2008.



Slow loris trading routes

During the surveys, 714 slow lorises were observed to be publicly traded. The slow loris is the second most traded species as well as amongst the most protected mammals.

According to Shepherd, rehabilitation centres continued to receive slow lorises, while the number of slow lorises traded in the markets has not been observed to go down. If no efforts are taken to reduce the trade, rehabilitation efforts will be in vain. Shepherd stated that, if the illegal trade in slow lorises is to be significantly reduced, a multi-pronged approach should be considered, involving:

- A more cohesive, cooperative approach from the NGOs
- Media pressure – taking advantage of the fact that people think they are cute
- Using the slow loris as a flagship to push for markets to be closed down
- Regular monitoring and reporting, with written reports provided to the government

But most importantly, says Shepherd, is that enforcement agencies need to step up efforts to crack down on the illegal wildlife trade, enforcing existing laws and adhering to international conventions and commitments.

b. Loose law enforcement and the lack of public awareness

Although there are laws and rules against the slow loris trade in Indonesia, attempts at confiscations often fail because there is not enough evidence to prosecute the traders. In the discussion session of the seminar, both J. Beads (PPNS Octo) and Dwi Adhiasto (Wildlife Conservation Society, investigation unit) stated that in many cases when the forestry department and police officers arrived at the location, there was no evidence. J. Octo Manik reminded delegates that a case can be processed when there are suspects, evidence, and witnesses.

In response to this, Karmele Llano Sanchez (IAR) stated that all evidence for law enforcement can be found in the markets where slow lorises are traded openly. According to Sanchez, in order to make law enforcement quicker, a law revision should take place to include the genus, *Nycticebus sp.*, and not the species. Resit Sozer (PPS Cikananga) supported this view. According to Sanchez and Sozer, including the genus *Nycticebus sp.* will facilitate the legal process because it will be clear without discussion that every seller or buyer of a slow loris is breaking the law, without the need to determine the species. The law will no longer provide an escape route for slow loris traders. Currently, if people who sell or keep a slow loris use a lawyer, they can walk free if the species is not *Nycticebus coucang*.

Nicolien de Lange (IAR) emphasised that most slow loris owners claim they did not know at the time of purchase that they were buying a protected animal. Up to 90% of owners who surrender their slow loris voluntarily to IAR did not realise they were buying a slow loris, usually because the seller claims it is a cuscus. 97% eventually learned via the internet that they possessed a slow loris, 3% were made aware of this fact by friends or neighbours. This highlights the importance of awareness. Raising awareness and education has been started locally by IAR, both in schools and among the public generally in the area of the rehabilitation centre. However, according to de Lange, awareness should be expanded to the known places where slow lorises are most often traded, such as Bandung and Jakarta. Chris Shepherd agreed that awareness and dissemination of information are important activities, and said to keep in mind that sellers already know they are not allowed to sell slow lorises, even though they sell them openly. This means awareness should focus specifically on potential buyers, not the sellers.

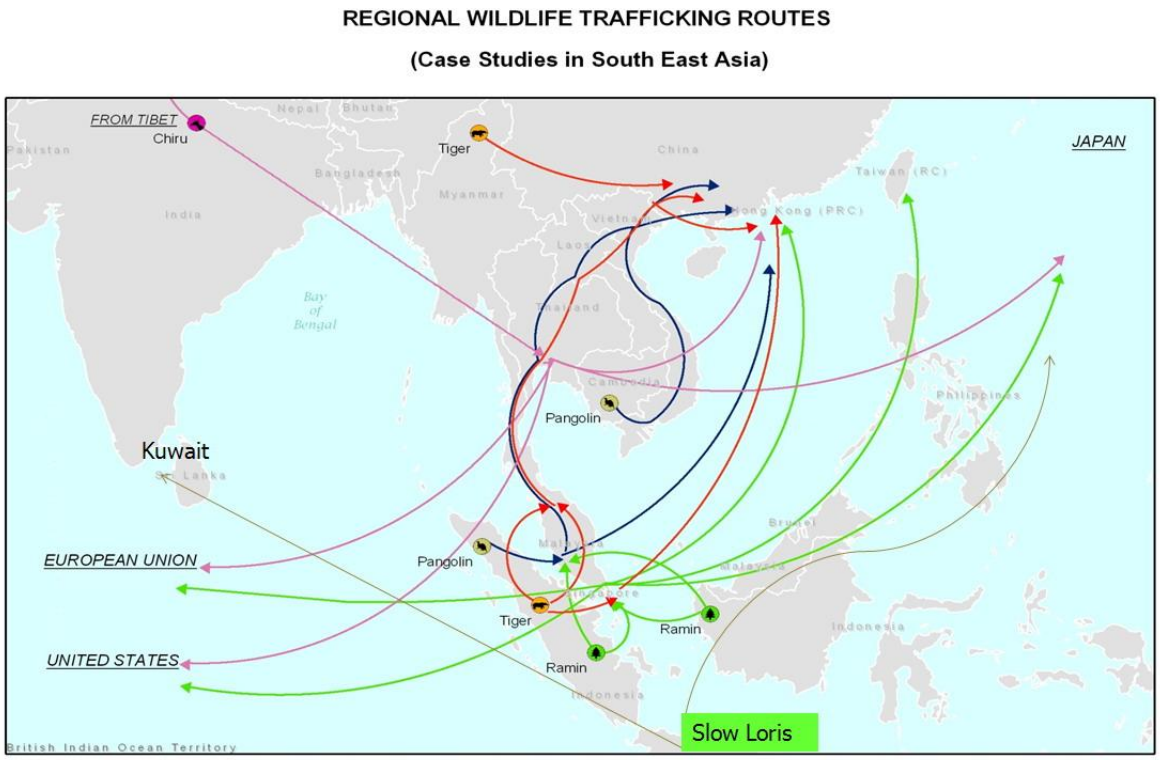
Maman of forestry police SPORC Eagle Brigade recognised the importance of raising the awareness of local people[12]. The general public could become the leader in efforts to protect wildlife. He explained that Indonesia consists of approximately 17,508 islands with biodiversity consisting of 38,000 species of flora and 40,000 species of fauna, including 1,539 species of birds, 515 species of mammals, 2,500 mollusc species, 214 crustacea species, 2,000 reptile species, 1,000 amphibian species, 3,000 fish species, 6 sea turtle species, marine mammal species, 450 coral reef species, 27,500 flowering plant species, 10,000 tree species, 5,000 orchid species, and 500 fern species. Of these, a total of 236 animal species as well as 58 plant species are protected, all located in forest areas.

With the following pictures, Maman showed the domestic and international trading routes.

Slow Loris trading locations in Java-Indonesia

[12] Maman S. (2010). *Main issues of Loris Law enforcement in Indonesia.* Presentation at the Seminar on Slow Loris Conservation, December 9th 2010.

Slow loris trading routes in Indonesia



Regional wildlife trafficking routes

Maman stated that preventive actions are needed, in order to prevent the committing of crimes; this can be done through disbursement of information on regulations, public education, etcetera. Secondly, repressive measures and justice are needed: law enforcement

actions taken directly against illegal activities, through functional, combined, or specific efforts.

Example case in Jakarta:

- Offence: trade, keep or possess live animals protected by law in Jatinegara Market - East Jakarta.
- Article violated: Article 21 paragraph 2 letters e UU No.. 5 of 1990 & Government Regulation No. 7 of 1990.
- Number of Executors: 2 people (Agus Subari, Sarwo bin Pawiro)
- Decision Judge: Case number 598/PID.B/2008/PN.JKT. Tim 97/PID.B/2008/PN.JKT.
- Agus Subari was sentenced to imprisonment of 1 year and 8 months and a fine of 1 million (subsidiary 1 month);
- Sarwo bin Pawiro was sentenced to imprisonment of 1 year and 7 months and a fine of 1 million (subsidiary 1 month).

To illustrate the weak law enforcement in habitat protection, Maman showed a photograph of a row of illegal timber trucks - inside the forest itself. Like illegal wildlife trading, illegal logging is not carried out in a secretive manner.

Illegal logging

c. What should be done – as soon as possible?

Much to be done, many things to be changed. Various suggestions came up during the Seminar on Slow Loris Conservation. Jarot Arisona (UI) emphasised once again that the slow loris trade exists because there is a demand for them, especially for medicinal use or as a pet. Poachers often feel there is no other choice for them than catching and selling slow lorises.

But that does not mean that socialisation efforts to the public should stop. Jarot also said that a Nature Conservation Education Centre has been established at Bodogol where the majority of staff is recruited from surrounding communities.

Resit Sozer (PPS Cikananga) suggested creating a central location for data collection on the slow loris. He also witnessed that exposing cases of law enforcement in the community – with the help of the media – can be very effective. Shabiliani Mareti suggests to revise regulation no. 7 to include minumum penalties instead of maximum penalties.

Walberto Sinaga (Centre for Primate Studies IPB Bogor) said that problems cannot be solved if we continue without tackling the root of the problem. Slow lorises are sold because people are given the chance to do so. According to Sinaga, the number of rangers in the field is often too low for the size of the area that needs to be controlled. He advised searching for a safe location for the loris to live in its natural habitat, increasing the number of personnel in the field, increasing the frequency of patrols, and cooperating with the community.

Furthermore Sinaga emphasised an important point, which could be one reason why illegal wildlife trade activities still thrive, namely: the laws of Indonesia are still weak and can be bought with money. Dwi Adhiasto (WCS) confirmed this, stating that the judicial process is not completed. While animals are confiscated, vendors are not punished.

According to Subakir (BKSDA Lampung), the important thing is commitment. As an example, he told that in Lampung, during one year, up to 30 cases could be prosecuted. According to the KUHP, article 183, at least two items of evidence are needed out of five possible items: witness testimony, testimony of the defendant, expert testimony, letters and directions. In fact, then, it is not difficult to act against illegal wildlife traders, but it takes commitment from all parties.

Nicolien de Lange (IAR) also pleaded for law enforcement, because confiscations which are adequately processed is an important key to reducing the number of slow lorises traded. She also said that at the same time, socialisation and education activities are needed amongst prospective buyers of slow lorises and other wildlife.

In terms of conservation, Jarot Arisona (UI) claimed that there need to be regular surveys of Javan slow loris populations and their habitat to protect them from threats to populations and habitats, including hunting, trading, logging, and forest encroachment.

4. Conclusions, Recommendations and Commitments

The conclusions and recommendations that followed from the Seminar on Slow Loris Conservation were:

1. Three slow loris species can be identified in Indonesia; *Nycticebus coucang*, *Nycticebus javanicus* and *Nycticebus menagensis*. Indonesian protection laws have not been revised after the taxonomic revision and mentions *Nycticebus coucang* only. During the seminar there was general consensus that the relevant laws should either be revised to include all subspecies, or that the laws should mention *Nycticebus* sp. in order not to exclude species once taxonomic revision takes place.
2. Government representatives said they cannot distinguish between different species. A representative from LIPI stated that slow lorises can be identified using DNA at LIPI at a cost, or Eijkman Institute in Jakarta for free. In the law enforcement process, an expert would be recommended
3. In order to significantly reduce the illegal trade in slow lorises, a multi-pronged approach should be taken, including:
    a. A more cohesive, cooperative approach from the NGOs
    b. Raising awareness using socialisation activities as well as media pressure
    c. Use the slow loris as a flagship to push for markets to be closed down
    d. Regular monitoring and reporting on trade locations with reports provided to the government
    e. Enforcement of existing laws and adherence to international conventions and commitments.
4. There has been a suggestion to set targets for a minimum of confiscations by authorities, of 10 cases per year. These should be broadly published in the media in order to scare people off.
5. There should be more communication to create a database of slow loris sightings, and to create a mailing list about slow loris activities and news. The Bodogol research site invited everyone to join the Facebook group which can be a starting point for this initiative.
6. More research is needed into the captive care, rehabilitation process and release procedures to maximise success in this area.

The commitments from participants in the Seminar can be summarised as follows:

1. Forestry Department KSDA committed to execute a maximum of 10 cases related to the slow loris trade in one year (2011).
2. IAR committed to do more research, more education and awareness activities, and provide information to the media about species and conservation status of the slow loris.
3. IAR will conduct a follow-up meeting or seminar on the slow loris in the following year (2011) to determine follow-up activities from this seminar, progress in agreed commitments and to evaluate the results obtained from the seminar.
4. Media were asked for increased exposure of slow loris issues to the general public.

Appendix 1: Nature Protection Laws in Indonesia

Act NO. 5 / 1990 on Conservation of Natural Resources and Ecosystems, Article 21:

(1) Any person is prohibited to:

a. take, cut, possess, damage, destroy, maintain, transport, and trade protected plants or its parts, alive or dead;
b. take a protected plant or its parts, alive or dead, from one place in Indonesia to other places within or outside Indonesia.

(2) Any person is prohibited to:

a. capture, injure, kill, keep, possess, maintain, transport, and trade protected animals alive;
b. keep, own, maintain, transport, and trade protected animals in a state of death;
c. remove protected animals from one place in Indonesia to other places, within or outside Indonesia;
d. trade, keep or have the skin, body, or other parts of protected wildlife or goods made from these parts or remove it from one place in Indonesia to other places within or outside Indonesia;
e. take, damage, destroy, trade, keep or have eggs and/or nests of protected animals.

Terms of Criminal Law. 5 1990:

Any person who willfully violates the provisions referred to in Article 21 paragraph (1) and paragraph (2) and Article 33 paragraph (3) shall be punished with imprisonment of 5 (five) years and a maximum fine of Rp 100,000,000.00 (one hundred million rupiah).

Appendix 2: Attendance List

Government

1. Agus Fatlas – Ujung Kulon National Park
2. Didi Subandidinata – Ujung Kulon National Park
3. Agustin Sukistyanawati – Balai Besar KSDA Jawa Timur
4. Andriyanto Sofiyudin – Gunung Gede Pangrango National Park
5. Antonius Pasaribu – Penyidik Sumdaling Polda Metro Jaya
6. Edi Sutiyarto – Balai KSDA Kalimantan Barat
7. Hermanto Siallagan – Balai Besar KSDA Sumatera Utara
8. J. Octo Manik - Penyidik SPORC Brigade Macan Tutul
9. Harjanto – Penyidik Madya Tipiter Bareskrim
10. Marionni Airline Hanoum – PPNS PPH Dephut
11. Maman – KSDA Wilayah II Bogor
12. Wirdateti – LIPI
13. Pratik Sagut T – Penyidik Bea Cukai Bandara Ngurah Rai
14. Sarjono – Penyidik SPORC Brigade Elang
15. Shabiliani Mareti – Balai KSDA Sumatera Selatan
16. Budi Setyaningsih – Balai Taman Nasional Gunung Halimun
17. Subakir – Balai KSDA Lampung
18. Toni Ahmad Slamet – BKSDA Jawa Barat Bidang Serang
19. Ujang Kusdiana – BKSDA Jawa Barat II seksi Konservasi wilayah III Sumedang
20. Waluyo – Penyidik SPORC Brigade Siamang
21. Eru Feriana – BKSDA DKI Jakarta
22. Susi Oktalina – Forestry Department

NGO

1. Karthi Martelli – SPCA Hong Kong
2. Jarot Arisona – Researcher, Professor Universitas Indonesia
3. Fransisca Noni – Wildlife Conservation Society
4. Iwan Londo – Wildlife Conservation Society
5. Joost Philipa – Wildlife Conservation Society
6. R. Agus Hadi Santoso – Wildlife Conservation Society

7. Yulissa Fitrianis – Wildlife Conservation Society
8. Argitoe Ranting – Yayasan IAR
9. Sharmini Julita – Yayasan IAR
10. Iis Sabahudin –Flora & Fauna International
11. Irma – LASA
12. Chairul Saleh – PERHAPI / WWF Indonesia
13. Sutrino SE – Investigator Bea Cukai Tanjung Priok
14. Walberto Sinaga – Primate Study Centre IPB
15. Sabrina – PPS Cikananga
16. Indah Winarti – Primatology IPB

Students

1. Carrie Stengel – Oxford Brookes University
2. Olivier Caillabet – Oxford Brookes University
3. Hizriah Alief J – Universitas Gajah Mada
4. Eka Christiana C – Universitas Gajah Mada
5. M. Rizky Putra – Universitas Gajah Mada
6. Muhammad Iqbal – Universitas Indonesia
7. Ridwan D. Ahmad – Universitas Indonesia
8. Precillia R. Putri – Universitas Indonesia
9. Fidya Yolanda Polontalo – Universitas Indonesia

Media

1. Rach Alida Bahaweres – Gatra
2. Leo Wisnu – hukumonline.com
3. Susapto – Jakarta Globe
4. Elly B. Faizal – Jakarta Post
5. Taufik Wijaya – Kantor Berita 68H Green Radio
6. Retno G. S. Koran Anak-Anak Berani
7. M.I. Stephen V – Liputan 6 SCTV
8. Farhanah – Majalah Change
9. Dahlia Rera O – Malajah Respect
10. Teddy Setiawan – Society of Indonesian Environmental Journalist (SIEJ)

11. Marwan Azis – www.beritalingkungan.com
12. Alif Iman Nurlambang – Tempo TV
13. Cundoko Aprianto – Parents Guide Magazine
14. Sri Harjati – Antara
15. Hesti – Kompas

Speakers and Moderators

1. Darma Jaya Sukmana – Yayasan IAR Indonesia
2. Dr. Karmele Llano Sanchez – International Animal Rescue
3. Nicolien de Lange – Yayasan IAR Indonesia
4. Suer Suryadi – SWP
5. Chris Shepherd – Traffic Asia Tenggara
6. Maman S. Hut. Forestry Police, Head of SPORC Brigade Elang
7. Resit Sozer – PPS Cikananga
8. Paolo Martelli –Hong Kong Ocean Park
9. Richard Moore – Oxford Brookes University
10. Dr. Ulrike Streicher - Specialist Wildlife Veterinarian, Danang, Vietnam.
11. Dwi Adhiasto – Wildlife Conservation Society

Appendix 3: Agenda Seminar

SEMINAR ON SLOW LORIS CONSERVATION IN INDONESIA
9 December 2010
Bogor, Indonesia

"Can we ensure the survival of one of the world's most endangered primates?"

09:00-09:30 **Event Opening**
Darma Jaya Sukmana Director Yayasan IAR Indonesia

SESSION 1: Loris species in Indonesia: conservation status, species differentiation and ecology aspects
Moderator : *Darma Jaya Sukmana*
09:30-09:45 **Aspects of Loris Ecology**
Jarot Arisona MSc., Universitas Indonesia
09:45-10:00 **Species differentiation: an overview of the different species of Indonesian lorises- How are they identified?**
Dr. Karmele Llano Sanchez Veterinary Director IAR
10:00-10:15 **Rescue, confiscation through rehabilitation, and release**
Nicolien de Lange Yayasan IAR Indonesia

10:15-10:30 Q+A for Session 1

10:30-11:00 COFFEE BREAK

SESSION 2 : Loris Trade: main threat to loris species survival
Moderator : *Suer Suryadi*
11:00-11:15 **Loris trade - domestic and international.**
Dr. Chris Shepherd. Traffic South East Asia
11:15-11:30 **Main issues of Loris Law enforcement in Indonesia**
Mr. Maman S.Hut. Head of SPORC unit

11:30-11:45 Q+A for Session 2

11:45-13:00 LUNCH

SESSION 3: Rescue, Rehabilitation and Release Programmes
Moderator : *Resit Sozer, PPS Cikananga*

13:00-13:15 **An Overview of Handling and Medical procedures in lorises**
Dr. Paolo Martelli Chief Veterinarian Hong Kong Ocean Park

13:15-13:30 **Loris release programme in Gunung Halimun Salak National Park: Post release monitoring using radio telemetry**.
Richard Moore PhD student Oxford Brookes University

13:30-13:45 **Loris Release programme and Monitoring Post-release: experience in Vietnam**
Dr. Ulrike Streicher. Wildlife Veterinarian. Danang. Vietnam

13:45-14:00 Q+A for Session 3

14:00-14:30 BREAK

SESSION 4: Discussions:
Moderators: *Darma Jaya, Resit Sozer, Suer Suryadi, Dwi Adhiasto*
Conclusions and Recommendations: is a conservation action plan needed for the conservation of lorises?

14:30-17:00 Possible solutions for tackling the trade and protecting loris species in Indonesia:

1. Commitment from the authorities
2. Conservation action plan
3. Implementation of recommendations and follow up

17:00-17:30 **Closing address**

THE END

Appendix 4: Literature and References

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- Streicher, U (2004) Pygmy Lorises Re-Introduction Study in Vietnam. *Reintro Redeux*, IUCN / SSC Reintroduction Specialist Group, South & East Asia. 1: 5-10.
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Appendix 5: Several Publications on the Seminar

- http://www.thejakartapost.com/news/2010/12/14/tougher-penalties-needed-save-slow-loris-activists.html
- http://www.thejakartaglobe.com/nvironment/endangered-lorises-in-jakarta-market-highlight-need-for-better-enforcement/412593
- http://www.thejakartaglobe.com/nvironment/wildlife-trade-seen-as-biggest-threat-to-slow-lorises/410870
- http://www.whatzups.com/?menu=22&nxid=8884&title=Kukang-Yang-Hampir-Hilang
- http://www.berani.co.id/Artikel_Detail.aspx?ID=4573
- http://www.greenradio.fm/index.php?option=com_content&view=article&id=4517:kukang-dijual-1-juta-rupiah-&catid=1:latest-news&Itemid=338
- http://www.hktdc.com/info/vp/a/emk/en/2/5/1/1X078VRO/Emerging-Markets/Rehabilitated-endangered-species-of-slow-loris-faces-difficulty-to-live-in-forest--experts.htm
- http://wildsingaporenews.blogspot.com/2010/12/rapid-demonstration-of-illicit-slow.html
- http://beta.antaranews.com/en/print/1291904147
- http://www.indonesiaviews.com/illicit-trade-biggest-threat-to-kukang-population.html
- http://www.traffic.org/home/2010/12/17/rapid-demonstration-of-illicit-slow-loris-trade.html
- http://antaranews.com/en/news/1291904147/illicit-trade-biggest-threat-to-kukang-population
- http://www.indonesiaviews.com/illicit-trade-biggest-threat-to-kukang-population.html

Appendix 6: Pictures of the Seminar

Appendix 7: Abbreviations

1. ASEAN - Association of Southeast Asian Nations
2. ASEAN-WEN – ASEAN Wildlife Enforcement Network
3. BBKSDA (Balai Besar Konservasi Sumber Daya Alam) – Large office of Natural Resources Conservation
4. BKSDA (Balai Konservasi Sumber Daya Alam) – Office of Natural Resources Conservation
5. CITES - Convention on International Trade in Endangered Species
6. DNA – Deoxyribo Nucleic Acid
7. FFI – Fauna & Flora International
8. FMIPA (Fakultas Matematika dan Ilmu Pengetahuan) – Faculty of Mathematics and Natural Science
9. INTERPOL – International Police Organization
10. IPB (Institut Pertanian Bogor) – Bogor Agricultural University
11. IUCN – International Union for Conservation of Nature
12. KSDAHE (Konservasi Sumber Daya Alam Hayati dan Ekosistemnya) – Conservation of Natural resources and its ecosystems
13. KUHP (Kitab Undang-Undang Hukum Pidana) – Book of criminal Law
14. LASA (Lembaga Advokasi Satwa) – Institute for Animal Advocacy
15. LIPI (Lembaga Ilmu Pengetahuan Indonesia) – Science Institute of Indonesia
16. PERHAPI (Perhimpunan Ahli dan Pemerhati Primata Indonesia) – Association of Indonesian Primate Experts and Observers
17. PP (Peraturan Pemerintah) – Government Regulation
18. PPNS PPH (Penyidik Pegawai Negeri Sipil Penyidikan dan Pengamanan Hutan) – Civil Servant Investigators for Forest Investigation and Safety
19. PPS (Pusat Penyelamatan Satwa) – Animal Rescue Center
20. RSPCA – Royal Society for the Prevention of Cruelty to Animals
21. SIEJ – Society of Indonesian Environmental Journalists
22. SPCA - Society for the Prevention of Cruelty to Animals
23. SWP – Suryadi, Widi and Partners
24. SPORC (Satuan Polisi Hutan Reaksi Cepat) – Fast Reaction Forest Police Unit
25. TNGH (Taman Nasional Gunung Halimun) – Halimun Mountain National Park
26. TNUK (Taman Nasional Ujung Kulon) – Ujung Kulon National Park
27. TSL (Tumbuhan dan Satwa Liar) – Wild animals and plants
28. UGM (Universitas Gajah Mada) – Gajah Mada University
29. UI (Universitas Indonesia) – University of Indonesia
30. UU (Undang- Undang) – Law
31. WCS – Wildlife Conservation Society
32. WCU – Wildlife Crime Unit
33. WWF – World Wildlife Fund

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