



First Interim Report
October 2008



Elephant Conservation Network

Restoring Elephant Forest Habitat in the Salakpra Protected Area, West Thailand

As part of the

Salakpra Elephant Conservation Project
Kanchanaburi Province
West Thailand



Keidanren Nature Conservation Fund

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1. Project Name:

Restoring Elephant Forest Habitat in Salakpra Protected Area, West Thailand

2. Organisation

2.1 Applicant organisation:

Zoological Society of London (ZSL)

2.2 Implementing organisations in Thailand

Elephant Conservation Network (ECN)

Forest Research and Restoration Unit, Chiang Mai University (FORRU-CMU)

3. Project purpose

To create an original knowledge base for indigenous forest in West Thailand and develop local technical skills to facilitate future restoration of elephant forest habitat in degraded land in and around the Salakpra Conservation Area

4. Summary of project progress

This project has made excellent progress with its planned activities, and has benefited from six unplanned activities which have greatly enhanced its value and likely impact.

Two planned activities were successfully achieved as scheduled. Participatory planning meetings were held in Kaeng Plakod village on 27 August and 3 October hosted by the elected village head Mr Wasan Sunjirat, and attended by a majority of villagers and ECN project staff. The second meeting was joined by Dr Stephen Elliott, the founding director of FORRU-CMU, and by the chief of the Salakpra Wildlife Sanctuary. Then, from 12-17 October, thirteen project participants from ECN, Kaeng Plakod and Salakpra went to Chiang Mai for an intensive forest restoration training course arranged by FORRU-CMU. A third planned activity - plotting phenology trails – began ahead of schedule and will be completed when Mr J.F. Maxell, FORRU-CMU's senior plant taxonomist, visits Kanchanaburi from 22-30 October to survey indigenous forest trees in the project area. An excellent site has been found for the project research nursery in the community forest of Kaeng Plakod village. Mr Wasan, the head of Kaeng Plakod, is a keen and active participant of this project.

The six unscheduled activities that greatly improved project progress were: two tree planting events in Salakpra and Chiang Mai which gave participants some preparatory experience that helped them plan the activities of this project more effectively; a bonus visit from Dr Stephen Elliott to discuss project plans and agree the nursery site in Kaeng Plakod community forest; additional funds from the local district council to expand the nursery in Kaeng Plakod, and from the Dutch NGO Bring Elephants Home to support forest restoration inside Salakpra; and the start of a system to monitor the growth rate of the nursery-germinated tree seedlings planted inside Salakpra to compare those placed under bamboo against those placed in open areas.

5. Planned project activities

- a) **Participatory planning:** Two planning meetings were held in Kaeng Plakod village, on **27 August** and **3 October**. The first meeting was arranged to coincide with the monthly community meeting, giving **Mr Wasan Sunjirat** (head of Kaeng Plakod village) and ECN staff the chance to explain project aims and activities to a majority of Kaeng Plakod villagers. The second meeting was joined by **Dr. Stephen Elliott**, founding-director of FORRU-CMU. After the meeting, Mr. Wasan took the project team to Kaeng Plakod's community forest to see the site chosen for the project nursery and demonstration plots.
- b) **Intensive training/study visit:** from **12-17 October**, thirteen project participants went to Chiang Mai in north Thailand to attend the training course conducted by FORRU-CMU. Participants included seven ECN staff, three Kaeng Plakod villagers and three rangers from Salakpra Wildlife Sanctuary. Training trip costs for Salakpra staff were paid by the Dutch NGO, Bring Elephants Home. After this training course, village and sanctuary staff will build tree nurseries so they can start collecting and germinating seeds ready for planting in 2009.
- c) **On-site training courses:** when the two nurseries are constructed, staff of FORRU-CMU will visit Kanchanaburi at least twice more to provide on-site training. The dates agreed for the next visits are **15-21 December** and **17-20 February**. This training will enable ECN, Salakpra and village staff to manage the project nurseries, survey the phenology trails, implement experimental research techniques for seed germination; and record and log data for future analysis.
- d) **Survey indigenous forest tree species:** senior plant taxonomist at FORRU-CMU, **Mr. J.F. Maxwell**, is helping to establish the project's forest survey system. The first survey was done from **22-30 October**. In the next few weeks, Mr. Maxwell will confirm the identity of trees found on the phenology trail in Kaeng Plakod community forest, providing a scientific name for each one. If time allows in future, he will also identify trees on the trail inside Salakpra. When every tree has been identified and its name marked on the trunk, project staff will start collecting phenology data each month so as to understand the reproductive cycle of each tree species, including the time period of flowering and fruiting.
- e) **Phenology trails:** Two phenology trails were set up from **22-30 October** with the help of **Mr. Maxwell**. One trail was plotted inside Kaeng Plakod community forest at the edge of Salakpra, the other was plotted at the centre of the sanctuary. Three hundred trees from at least fifty species will be labeled for data collection along each trail. This data will be entered into the project database and used to develop a seed production schedule for nursery and forest restoration work.
- f) **Nursery construction:** nursery construction was studied during the Chiang Mai training course. Village and sanctuary staff drew their ideal nursery plans and listed the equipment they thought necessary. They then compared their drawings with the design of FORRU-CMU's nursery. Their drawings will be modified after the on-site training to fit their designs to project aims and available budgets.

- g) Germination/seedling growth data:** before the training course in Chiang Mai, we held two introductory sessions in seed germination procedures - one for Kaeng Plakod and one for Salakpra participants - and we did some basic germination exercises to familiarize project staff with nursery activities. The teams collected five species of tree seeds and seedlings (*Bauhinia* sp., *Azelia xylocarpa*, *Cassia fistula*, *Diospyros rhodcalyx*, and *Spondias pinnata*), noting every activity they performed as well as any problems and queries so they could ask FORRU-CMU staff during the training. Seed collection timetables were produced for each site by nursery staff on the training course. This schedule will guide future seed collection for each nursery so that fresh seeds are used for germination and other nursery activities.
- h) Project administration/supervision:** working with project associates, ECN has recruited well-qualified staff to manage this project. Initial planning, training and activity supervision was provided by a former staff researcher from FORRU-CMU who has also trained ECN's project staff.

6. Project results to date: planned and unplanned

a) Tree planting event in Chiang Mai: a project bonus

In **June 2008**, before this KNCF project started, FORRU-CMU held a tree planting event in the Hmong hill tribe village of Ban Maesa Mai inside Doi Suthep National Park near Chiang Mai. ECN raised additional funds to send eight people to join the event so they could gain some insight and experience that would help them plan this KNCF-funded FORRU project. Three ECN project staff and five associates from local communities, including Kaeng Plakod, joined the trip to Chiang Mai, staying overnight with villagers in Ban Maesa Mai. As the Kanchanaburi team helped their hosts plant trees, they witnessed the effective cooperation between FORRU-CMU, community members and protected area staff. Ban Maesa Mai has an active conservation club that has worked with FORRU-CMU for thirteen years. The Kanchanaburi participants spent many hours exchanging ideas with their hosts, and discussing their vision for the natural environment in their community areas. The villages of Kaeng Plakod and Maesa Mai are both in protected areas and have similar problems that can only be resolved through collaboration with PA staff, facilitated by an NGO.

b) Tree planting event in Salakpra: a project bonus

With support arranged by ECN from the Dutch NGO, Bring Elephants Home, Salakpra staff held a tree planting event inside the protected area on **16 August**. One hundred people joined the event, among them forest rangers and volunteers from nearby villages, including Kaeng Plakod. On this busy active day, over **3,200 seedlings from thirteen tree species were planted in six plots**. Three plots are under the shade of a bamboo grove, and three plots are in open areas away from bamboo. This experimental design is intended to compare the effect of planting seedlings under bamboo and away from bamboo, thereby improving future planting techniques. The results of this experiment will give us a list of tree species suitable for planting in areas dominated by bamboo.

c) Raising matching funds from other donors: a project bonus

In **June 2008**, ECN staff met two trustees of the Dutch NGO **Bring Elephants Home** (BEH) to discuss supporting elephant habitat restoration in our project area. ECN suggested working with Salakpra personnel to establish a parallel project that would restore degraded forest in the core area of the sanctuary. Using the framework species approach developed by FORRU-CMU, Salakpra will set up its own nursery to produce forest tree seedlings to plant inside the sanctuary. The Salakpra and Kaeng Plakod nurseries will run as cooperative projects in similar forest areas dealing with different problems. When the opportunity arose for ECN to attend a tree-planting event in Chiang Mai hosted by its project partner, FORRU-CMU, BEH kindly gave additional funds for us to send a team of ECN project participants to gain experience and insight from this event.

ECN has also helped Mr Wasan Sunjirat, head of Kaeng Plakod village, acquire funds from the District Council to expand the project nursery so that it can produce seedlings for sale and serve as a training centre for villagers and students as well as a research site. This will greatly enhance the value of the KNCF-funded project by boosting local livelihoods, and expanding forest restoration in the project area. Mr Wasan is a key stakeholder in this FORRU project because he is so keen to implement effective forest restoration in his village.

d) Participatory planning meetings with key local stakeholders

Two participatory planning meetings were held in Kaeng Plakod village with local stakeholders. The first meeting, on **27 August**, was arranged to coincide with the community's monthly meeting so that Mr Wasan Sunjirat (Kaeng Plakod's elected leader) and ECN staff could explain the project aims and activities to a majority of Kaeng Plakod villagers. The second meeting, held on **4 October**, was hosted by Mr Wasan and joined by Dr. Stephen Elliott (FORRU-CMU), by the head of Salakpra Wildlife Sanctuary, and by Salakpra's nursery staff.

e) Project planning visit by Dr Stephen Elliott: a project bonus

Dr Stephen Elliot, founding-director of FORRU-CMU, made an unexpected visit to Kanchanaburi from **3-5 October** to review project plans and progress. This allowed him to introduce the project to the superintendent of Salakpra Wildlife Sanctuary, and join the second planning meeting at Kaeng Plakod village to agree the best location for the project nursery, and to plan nursery construction and seed collection protocols in and around the Kaeng Plakod Community Forest which adjoins the Salakpra Wildlife Sanctuary.

According to Dr. Elliott, the site chosen by Kaeng Plakod for its project nursery is very good indeed. It is a flat area in the community forest, with road access, a reliable water supply. Better still, the area is still connected to Salakpra's protected forest. A phenology trail has already been plotted for phenology data collection. Local project staff can get potting material from their village, including good quality forest soil and free coconut and peanut husks. This will reduce the implementation costs this forest restoration project.

f) Monitoring growth rates of planted seedlings in Salakpra: a project bonus

Following on from the August tree-planting event in Salakpra, ECN's project team worked with forest rangers on **16 September** (the end of the wet season) to start monitoring the growth rate of seedlings that were planted. Over 3,000 seedlings were measured and marked by ECN and sanctuary staff. This data will be logged into the project databank to serve as a baseline for comparing seedling growth with the data collected next year at the end of the dry and wet seasons. Results will reveal any impacts that bamboo may have on tree seedling growth and will allow us to select suitable tree species for this area, thereby improving the forest restoration technique for west Thailand. This monitoring exercise showed that the seedlings of some species (e.g. *Alstonia scholaris*) had died because they had outgrown their potting bag and their roots had broken during planting, causing fatal shock to the seedlings. This is a useful lesson to learn. As a result of their involvement in this project, the Salakpra team is very keen to increase the diversity of the native tree species planted and to improve the quality of the seedlings prepared for planting next year.

g) Preparatory training in nursery techniques: a project bonus

Two preparatory training sessions were held on **15 & 19 September** with nursery staff in Kaeng Plakod and Salakpra to help prepare them for the intensive training course at FORRU-CMU. After collecting tree seeds from the forest nearby, nursery staff were shown basic techniques for seed germination. They then set up a small research site to germinate seeds from five tree species (*Bauhinia* sp., *Azadirachta indica*, *Cassia fistula*, *Diospyros rhodcalyx*, *Spondias pinnata*) and record all activities and problems so they could ask questions at the FORRU-CMU training.

h) Setting up phenology trails

From **29-30 September**, the project team carried out a survey inside Salakpra to list tree species found inside the sanctuary and use the information to design a phenology trail. Tree seeds from the protected area can be used to restore Kaeng Plakod's community forest. The forest type in each area is similar, but the community forest has been degraded by excessive human use. The ECN field team and local nursery staff have already prepared a phenology trail near the Kaeng Plakod nursery. Mr. Maxwell will come to Kanchanaburi from **21-30 October** to do his first forest survey for this project. He will label at least 300 trees from 50 species on the trail, and will collect dry specimens to start a FORRU-West Thailand reference collection. Each tree on the phenology trail will be marked with a label so that relevant information can be recorded. Mr. Maxwell will remind the project team how to collect dry specimens from the forest and record key information on each one. He will then check the name of indigenous tree species on the phenology trail in Kaeng Plakod community forest and in the Salakpra sanctuary.

i) Intensive training at FORRU-CMU in Chiang Mai, north Thailand

From **12-17 October**, ECN took 13 project members to Chiang Mai for an intensive training course at FORRU-CMU's reforestation site. Participants included seven ECN staff, three Kaeng Plakod villagers and three Salakpra rangers. The purpose of the course was to train participants in FORRU approaches to forest restoration, and to teach the techniques needed to implement the Kanchanaburi project.

Day 1 covered the concept of framework species - enhancing biodiversity by using native tree species that will flower and fruit within 2-3 years, thereby attracting wildlife to the plot to start the cycle of natural regeneration by pollinating flowers and dispersing seeds from the forest nearby. The visitors listed tree species native to their area and produced a seed collection timetable to use on their return to Kanchanaburi. In the afternoon session, **Ms Jittin Ritthirat**, the manager and community coordinator of ECN, gave a talk to lecturers and students of Chiang Mai University on "**The challenges of elephant conservation and forest restoration in and immediately around Salakpra Wildlife Sanctuary in west Thailand**". This explained the human-elephant conflict (HEC) context of ECN's work, and helped villagers understand the reasoning behind this forest restoration project.

On **Day 2**, our hosts took the trainees to the FORRU-CMU research nursery to learn about nursery construction, setting up a phenology trail, collecting phenology data and other nursery tasks such as seed pre-treatment, potting and post-potting nursery care, and germination trials. On **Day 3**, the team of trainees visited forest restoration demonstration plots near the Hmong village of Ban Maesa Mai in the Doi Suthep National Park outside Chiang Mai. These plots were the first to be planted by FORRU-CMU ten years ago. The visitors could clearly see differences between plots planted in different years, and were encouraged by the success of FORRU-CMU's method of forest restoration of.

On **Day 4**, the team visited the Mae Wang Watershed Management Unit in the Doi Inthanon National Park. This unit had been restoring local forest for 15 years, coordinating community restoration groups in and around the national park. On **Day 5**, participants went to the CMU-herbarium to meet **Mr. J.F. Maxwell**, FORRU's senior plant taxonomist. He taught the team how to collect specimens properly and how to record good data. He also explained the value of collecting specimens as the reference collection for the FORRU-West Thailand forest restoration project. This was an inspiring last day for course participants.



8. Future Project Activities

- Two nurseries (in Kaeng Plakod village and in Salakpra sanctuary) will be established as soon as possible after project participants return from their intensive training in Chiang Mai.
- Kaeng Plakod nursery work will start in November 2008 in order to germinate as many tree species seeds as possible as quickly as possible so as to maintain the agreed project schedule.
- One phenology trail will be finished in the last week of October, in Kaeng Plakod village. Phenology data collection will start in November. The Salakpra team will monitor its own phenology trail, using the system provided by FORRU-CMU.
- Two on-site training courses will be held in December 2008 and February 2009. This will help resolve any uncertainties that arise when the nurseries are built and will enable project participants to gather and analyze phenology data.

9. Updated Project Schedule

Activities / Tasks	July 08	Aug 08	Sept 08	Oct 08	Nov 08	Dec 08	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Remarks
Participatory planning		X		X									With PA staff & villagers
CMU study trip and workshop				X									ECN staff, PA staff & villagers
Training and data collation on-site						X		X					With ECN staff & villagers
Forest tree survey/ seed identification				X			X			X			By FORRU tree specialist
Phenology study and seed collection					X	X	X	X	X	X	X	X	By project staff and participants
Nursery construction and research				X	X	X	X	X	X	X	X	X	By project staff and participants
Tree planting event		X										X	ECN, Salakpra and BTEH

10. Photographic record of ECN Forest Restoration Project in West Thailand



Mr. Wasan Sunjitrat, head of Kaeng Plakod village, beside a community forest restoration plot that is partially funded by the Bangkok Banyan Hotel



Mr. Wasan and ECN staff member, Tu, in Chiang Mai planting trees in June 2008 at the Maesa Mai village project that is supported by FORRU-CMU



Above: Ann and Tik from Bring the Elephant Home Foundation (Netherland) are happy to help this important forest restoration project and to provide matching funds when they can



Left and above left: a planted plot designed to compare the effect of bamboo shade; three plots are planted under bamboo and three plots are planted in the open using 13 tree species and 520 seedlings in each plot (total 3,120 seedlings) . Every tree will be measured at least five times after planting.

Mr Tidarach Toktang, a former staff member of FORRU-CMU, led the basic on-site training for Kaeng Plakod nursery staff and Salakpra rangers. Since then, project participants have started to collect forest seeds (e.g. from *Azelia xylocarpa* below right) and are comparing the germination rate (below left) of *chong-cho* (*Bauhinia* sp.) and Golden Shower (*Cassia fistula*) to find out whether scarification is or is not necessary. This experience helped prepare staff for the intensive training course in Chiang Mai.



Left: On 22 October 2008, ECN staff, Mon and Gip, helped village nursery staff measure and label trees on the Kaeng Plakod phenology trail for this project

Below: In the Kaeng Plakod community forest near the Lam Pong Pha pond, project staff and volunteers collected seeds from the ground so they can be germinated in the nursery and planted back in this area next year





Above: Dr. Stephen Elliott, founding-director of FORRU-CMU (back row, third from left) came to Kanchanaburi to help establish the phenology survey trail in the Kaeng Plakod community forest. This photo was taken in the area where the nursery will be built in early November



Right: Dr. Elliott visited the tree nursery inside Salakpra. Mr. Samai, the ranger in charge of the nursery, displays the seed trays in which he is germinating the seeds of many forest tree species. He sought advice from Dr. Steve on how to germinate the seeds from fig trees



Left: Training participants then went to the FORRU research nursery to compare its specifications with their own plans

Right: Ms. Tonglao, FORRU-CMU staff, showed participants how to collect tree specimens using this simple equipment. She also showed them how to use the data forms (below) to record required information about each specimen tree



Left: ECN staff members Tu, Jittin and Gip learn about the fruit and seed structure of trees. Here they are looking at the embryo of a makaa-mong (*Afzelia xylocapa*) seed

Right: Participants proudly present their examples of perfect seedling potting in the potting module at the FORRU-CMU research nursery on the 2nd day of this project's intensive training course



Right: ECN project staff member, Gip, providing the scale for some 15-month old *Bauhinia purpurea* trees seen at one of the demonstration plots during the training course. Gip is 157 cms tall



Left: on the last day of the training course in Chiang Mai, Mr. J.F Maxwell, FORRU-CMU's senior plant taxonomist, explains the value and usefulness of plant specimens, and the importance of recording full information for each specimen collected. Here he is showing some examples of fruit collected from the Sai Yok forest in Kanchanaburi.