2020 ANNUAL REPORT

PREPARED BY

Marc Ancrenaz and the entire HUTAN team
March 2021

HUTAN

Covid 19:

WHERE WE ARE NOW

2020, one of the most challenging years for everyone...

In Sabah, two consecutive lockdowns greatly impacted our field conservation activities, but the Hutan teams have shown impressive resilience and creativity in responding to the crisis. Hutan has increased its presence on the web, through a new website and active FB page. The Hutan Environmental Awareness Programme has risen to the occasion and developed a variety of programs on social media to continue their work, at a time when in-person events are not yet possible. You may have seen that our first illustrated children's book is out, and support of "Through The Treetops" domestically as well as internationally has been very encouraging, even during these challenging times.

Meanwhile, our field teams have continued to study orang-utans and to monitor wildlife, to protect swiflets, hornbills and other species, and to restore the forest to create a living landscape in Kinabatangan.

2020 did bring us heartache with Jenny's passing, the female orang-utan we had followed since we started our program in 1998. Many of you met her, if you have visited Hutan. She leaves behind many children that we still follow, but she is also greatly missed by everyone.

This pandemic has highlighted how important it is to take care of our environment and to strike a balance between our needs and the needs for biodiversity to thrive. More than ever, Hutan is looking at ways for people to co-exist peacefully with wildlife.

Our conservation and awareness activities would not be possible without your continued support. On Hutan's behalf, I really wanted to thank all of you, our supporters, who make our work possible and contribute to making a difference, especially in these times of hardship.

HUTAN

ORANG-UTAN RESEARCH

In 2020, the field activities of the orang-utan team were hampered by two lockdowns, the regular presence of elephants at our site, and repeated flooding events. However, some of their achievements include:

- 48 full days of observation with 10 different wild orang-utans.
- Follows of five unknown and unhabituated individuals.
- Feeding activities represented half of the active period of habituated animals:
  - Leaves = 32.6% of the diet
  - Fruits = 45.9% of the diet
  - Ficus sp (or figs) = top species consumed by the animals with 37.4% of feeding time
- The regular monitoring of permanent line transects (12 km) yielded orang-utan densities fluctuating from 2.7 to 3.2 ind./km sq. during the year.
- The monthly monitoring of 200 trees and vines to assess food productivity in the forest showed a peak of fruit production in August and September.
- The three dominant resident females died of old age in the last two years (Juliana, Maria, and Jenny). We are now monitoring closely how their older daughters (Felicity, Wawa, and Ocean) are going to adjust to this new and unique situation and use the territories that are now vacant.
- Rescue of an adult female orang-utan who was brought to Sepilok Rehabilitation Center. This female was emaciated and in very poor condition when we caught her. But she finally recovered and will soon be released.

HORNBILL CONSERVATION

Timber exploitation and forest degradation have devastating consequences on hornbill survival because of the destruction of tree cavities that the birds use for breeding. Our broad strategy to sustain viable populations of hornbills in Kinabatangan includes:

- Construction and erection of artificial nest boxes;
- Repair of natural cavities suitable for nesting;
- Protection and monitoring of breeding pairs;
- Monitoring of bird abundance along the River;
- Awareness and protection.

Results for 2020:

- The team built and erected three new artificial nest boxes.
- We repaired five natural cavities (in 3 years, 14 repaired cavities have produced 11 fledglings of pied hornbills).
- Detection of only one hornbill breeding pair during the year (bushy crested): this extremely poor performance may result from abundant rainfall.
- The pair of Helmeted hornbills that used to nest in Pangi was not recorded in 2020.
- Field survey and training delivered for Danau Girang Field Center (Lot 6 of LKWS).
- Ravinder Kaur (Gaia) successfully defended her Ph.D. entitled "Breeding ecology of hornbills in Kinabatangan."
- Our collaborative hornbill conservation efforts with Gaia were featured in several magazines, videos, and radio interviews during the year.

A pair of wrinkled hornbills (Aceros corrugatus) -above- visiting one of our artificial nest boxes (this species has never used artificial nest boxes yet). Since 2013, we have installed 20 artificial nest boxes. These boxes have been used by rhinoceros hornbills (two pairs have produced five fledglings) and oriental pied hornbills (this small resilient bird is not a target species). Because large species (Wrinkled, Helmeted or rhinoceros hornbills) are facing difficulties to find large natural cavities, their numbers are declining in the floodplain.

PANGI SWIFTLET RECOVERY AND PROTECTION

Swiftlets are found throughout the Indo-Pacific region, building their edible nests in limestone caves. These nests are used for traditional Chinese medicine and, since the 14th century, their harvest and trade have thrived in the Lower Kinabatangan, developing into a deep-rooted tradition within the local Orang Sungai community.

Over the last decades, illegal harvesting of bird nests, indiscriminately destroying eggs and nestlings, caused a drastic decline in the swiftlet populations and even led to local extinctions. A last cave system located in the 439 hectare Pangi Virgin Jungle Reserve (VJR) still harbors a small swiftlet population. Since 2010, a team of young men from Sukau is protecting these caves and surrounding forests 24/24 and 365/365.

Nests produced in Pangi are not harvested for commercial purposes. A lot of birds are dispersing and start breeding in artificial farms built by the villagers, which benefits the local economy.

Results for 2020:

- 16 full-time staff and 12 interns
- 6 base-camps
- 29 caves identified; 13 caves protected
- Regular patrolling with HWW, the police and the "Tiger Platoon" from the Malaysian Army have deterred poachers to come and steal nests in 2020.
- 4,318 nests produced, representing an increase of 30% compared to 2019 and >1200% since 2010

REFORESTATION EFFORTS

HUTAN Reforestation is a Team of 13 full-time staff (12 of them being women) and 11 rotating interns (which totalled 41 different persons in 2020).

2020 in numbers:

- Three sub-units: Tree Nursery; Tree Monitoring, and Tree Planting.
- Nursery:
  - intake of 33,018 seedlings (from 48 species), all from Sukau village home nurseries
  - total of 19,540 seedlings (36 species) sent to MOPP
  - 4,325 seedlings planted by guests, Junior Rangers and Hutan staff.
- Reforestation at Keruak Corridor Reforestation Plot:
  - 14,160 seedlings planted:
    - 10,000 seedlings sourced from Abai (village located downriver)
    - 4,160 from Hutan Nursery
  - Survival rate:
    - 2020 seedlings: (n=14,160): 81%
    - 2019 seedlings: (n=31,094): 68%

The two consecutive lockdowns resulted in the disruption of maintenance activities, and a lower seedling survival rate.

- Hornbill Seedling Project:
  - seeds are recovered from hornbill feces and propagated at the nursery
  - 108 seedlings (6 species) planted at three experimental plots, with a survival rate of 24-95%.
- Phenology Project: the team is now able to conduct monthly phenology monitoring with 243 trees planted since 2008 in 3 plots.

Seedling monitoring at Keruak/Genting Corridor Experimental Plots

WILDLIFE SURVEY AND PROTECTION

The scope of activities of the Wildlife Survey and Protection Unit or WSP is diverse and includes:

- biodiversity monitoring: results of carnivore, frog, and primate monitoring are presented in the next pages;
- biodiversity monitoring to document the dynamic of wildlife recolonization in a wildlife corridor (Keruak);
- patrol and law enforcement: see these section on Honorary Wildlife Wardens
- elephant management and conflict mitigation in collaboration with Dr. Farina Othman (Seratu Aatai);
- Hornbill protection and artificial nest box project (collaboration with Dr. Ravinder Kaur - Gaia);
- Capacity building focusing on wildlife monitoring.

In 2020, Eddie (in charge of the Unit) was awarded the "Wildlife Warrior" Award by Houston zoo and obtained a new drone. The team is currently using this technology to precisely map the forest and monitor reforestation processes, wildlife (elephants; orang-utans) and illegal activities. They also develop a new approach to organize orang-utan aerial nest surveys.

In 2020, together with Seratu Aatai, the team conducted a series of interview surveys in villages across Sabah affected by elephant raids. Indeed, it is essential to better understand people's perception toward elephants to harness communities' support toward conservation.

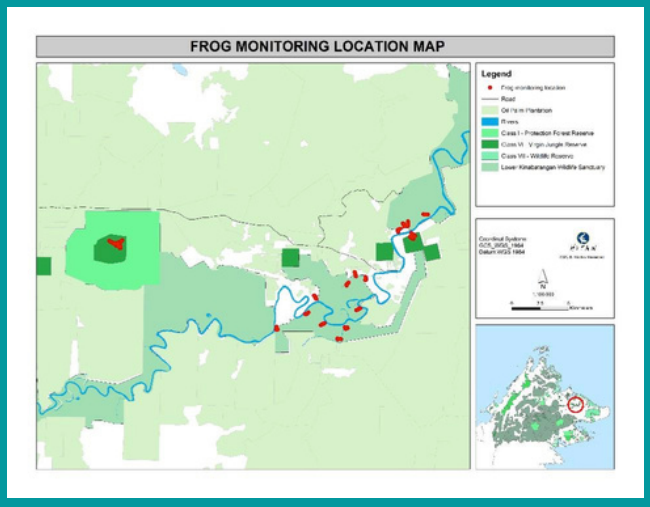
3-D map of one of the HUTAN reforestation Plot. Regular analysis of these pictures will provide a visual tool to monitor reforestation processes at our plots.

Picture taken from a drone showing orang-utan nests. By combining results of ground and drones surveys we intend to design a new methodology to estimate orang-utan densities.

FROG MONITORING

Since 2018, we monitor frog presence and abundance in Kinabatangan. Although frog abundance is comparable in the different forest types, we generally find more species in dry and less disturbed forests than in limestone or riparian forests. Plantations are mostly dominated by commensal and invasive species.

- Sampling time: wet season
- Number of permanent transects: 20
- Cumulated number of species: 33
- Very few Toads (Buffonidae)
- Two possible new undescribed species:
  - Chiromantis sp.?
  - Kalophrynus sp.?




Rhacophorus rufipes


Chiromantis sp?


Kalophrynus sp?


Rhacophorus dulitensis
The Jade frog

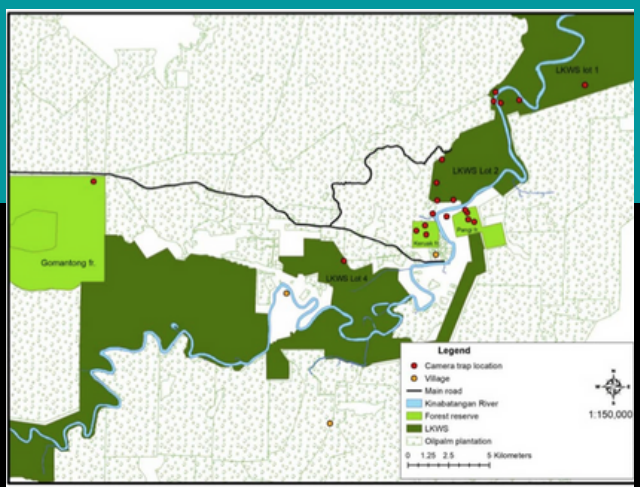
CARNIVORE MONITORING

Goals:

1. To document the presence and basic ecological characteristics of carnivores, and especially the clouded leopard, as well as other wildlife species along the Kinabatangan River
2. To identify key environmental features that affect species composition in different habitat types.

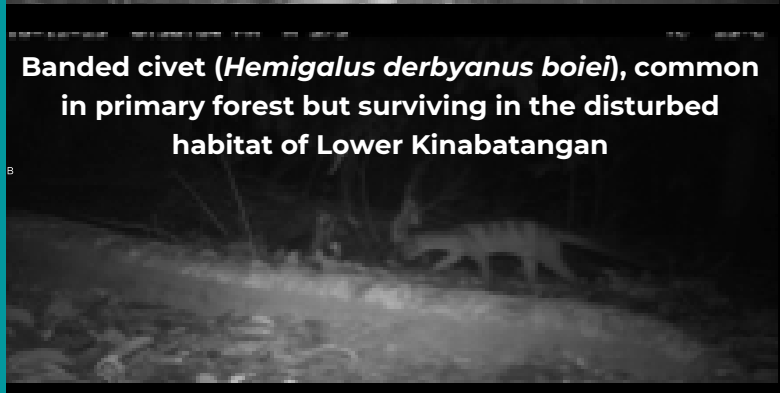
- Number of monitoring locations in 2020: 8
- Number of camera traps: 23
- Number of pictures: 53,765
- Number of species captured: 47
- Number of carnivores: 13
- Commonest species:
  - pig-tailed macaque (30.7%)
  - bearded pig (26.8%)

The repeated Covid-19 lockdowns seriously disrupted our work in 2020 and this contributed to reducing our chances to detect the presence of the rarest species.



Otter civet (*Cynogale Benetti*), the rarest civet in Borneo

Leopard cat (*Prionailurus javanensis borneoensis*), *a* very common sighting in Lower Kinabatangan



Banded civet (*Hemigalus derbyanus boiei*), common in primary forest but surviving in the disturbed habitat of Lower Kinabatangan

Female orang-utan and her young walking in front of a camera trap

PRIMATE MONITORING

Goals:

- To document seasonal fluctuations of non-human primates along two permanent stretches of River (special emphasis on proboscis monkeys, *Nasalis larvatus*: NL).
- Identify the most important tree species to sustain healthy populations.
- Monitor tourism activities and their impact on wildlife along the river.

Methods:

- Two permanent stretches (8 km) are surveyed from a boat for three consecutive days each every three months.
- Data collected: species, number of individuals, group composition (NL).

Results (2018-2020):

- Regular and stable sightings of groups of Long-Tailed Macaques (0.5 to 2.5 group/km), Silver Leaf Langurs (0.2-0.5), and Proboscis monkeys (0.5-1.5).
- Steady decline of sightings of Red Leaf Langurs.
- Average Group size of NL: 12 ind.
- Colona sp. and Ficus sp. represent about 50% of tree species used by primates along the River.

Conclusions:

- Sightings indexes are similar to previous years: No obvious sign of impact due to the absence of tourism activities during the year.
- Red Leaf Monkeys are increasingly difficult to see along the river edge.

Proboscis monkey, *Nasalis larvatus*

Pig-tailed macaque, *Macaca nemestrina*

HONORARY WILDLIFE WARDENS

In 2020, the wardens organized regular patrols to fight the occurrence of any illegal activities.

In January, they joined the Tiger Platoon Battalion and the police during "Operation Khazanah" which led to the arrestation of two groups of poachers and the seizure of guns and equipment in Beluran District.

Twice they stopped small illegal timber activities within the protected forests of the Lower Kinabatangan Wildlife Sanctuary. They also investigated several cases of poaching in Lot 5, Lot 6, Lot 8, and Lot 10A of the LKWS, and in Pangi FR.

The wardens are increasingly using the drone technology to survey boundaries between protected forests and oil palm plantations. This tool is especially useful to detect human activities in the most remote places of the region.

HUTAN ENVIRONMENTAL AWARENESS PROGRAMME

The Covid-19 crisis had a profound impact on HEAP's environmental education. Schools were closed, and physical meetings were forbidden during most of the year in Sabah. Consequently, the team (five full-time educators and five interns) spent much time and effort to find new ways to reach their audience. Under the guidance of our colleagues from Chester Zoo, HEAP finalized the assessment of their Education Master Plan and developed a new document that emphasizes the monitoring of behavioral changes with our different target audiences.

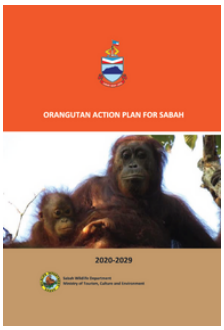
2020 was the opportunity to develop on-line education tools, such as the new HUTAN website, Instagram and FB pages, a YouTube Channel, or a new FB and Instagram for HEAP. We are now producing regular online events and teaching material to reach our audience despite the current challenges.

During the year, HEAP organized a few exhibits to celebrate World Wildlife Day (featuring our original theater play "Pak Lummun, the Orang-utan" and song "Our Natural Heritage") or for the special visit of our research station by Datuk Jaffry bin Arifin, Minister of Environment in Sabah. We also completed a series of small projects with the primary and secondary schools of Sukau: eco-bricks, mural painting, construction of an information booth, and herbarium. Last, the 14 Junior Rangers and the 15 students of the "Anak Pokok" initiative attended activities organized by HEAP when physical gatherings were permitted: tree planting, plastic recycling, waste management, educational games, etc.

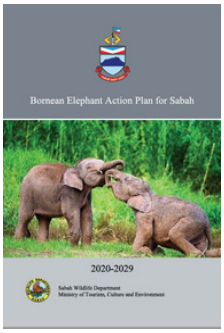
Murals and educational booth at the SK Sukau were launched in September.

Production of plastic "Eco-bricks" by Junior Rangers and seedlings maintenance by the "Anak Engkat Pokok" team (above).

The play "Pak Lummun the Orang-utan" featured by the Sukau Junior Ranger (below).



POLICY AND ADVOCACY



Both the Elephant and the Orang-utan State Action Plans were officially approved and launched by the State Government in early 2020. These two documents give a general framework for the management of these two iconic species in Sabah. The Plans particularly insist on the need for people to accept a co-existence with these large mammals outside of protected areas, notably in agricultural landscapes dominated by oil palm plantations and other crops.

Hutan team members are involved in several national working groups, and international initiatives, such as the RSPO (Round Table on Sustainable Palm Oil), various IUCN Species Specialist Groups, or GRASP.

We took part in various webinars and on-line presentations, and also produced a series of peer-reviewed scientific articles and reports to share our views with a wider audience.

In 2020,
HUTAN became an official member of the IUCN!

IUCN | Member

List of peer-reviewed articles published in 2020

Kaur, R., Ramli, R., Ancrenaz, M., Hassan, H., Ahmad, E., Ratag, M., Elahan, B., Sinyor, H., Rajak, A. 2020. Estimating the availability of potential hornbill nest trees in a secondary forest patch in Kinabatangan, Sabah. Forktail 36: 56-62

Rubino, E.C., Serenari, C., Othman, N., Ancrenaz, M., Sarjono, F., Ahmad, E. 2020. Viewing Bornean human-elephant conflicts through an environmental justice lens. Human-Wildlife Interactions 14(3): 487-504.

Meijaard, E., Brooks, T.M., Carlson, K.M., Slade, E.M., Garcia-Ulloa, J., Gaveau, D.L.A., Lee, J.S.H., Santika, T., Juffe-Bignoli, D., Struebig, M.J., Wich, S.A., Ancrenaz, M., Koh, L.P., Zamira, N., Abrams, J.F., Prins, H.H.T., Sendashonga, C.N., Murdiyarso, D., Furumo., P.R., Macfralane, N., Hoffman, R., Persio, M., Descal, A., Szantoi, Z., Sheil, D. 2020. The environmental impacts of palm oil in context. Nature Plants, 1418-1426. https://doi.org/10.1038/s41477-020-00813-w

Santika, T., Wilson, K.A., Law, E.A., St John, F.A.V., Carlson, K.M., Gibbs, H., Morgans, C.L., Ancrenaz, M., Meijaard, E., Struebig, M.J. 2020. Impact of palm oil sustainability certification on village well-being and poverty in Indonesia. Nature Sustainability, https://doi.org/10.1038/s41893-020-00630-1

Sherman, J., Ancrenaz, M., Meijaard, E. 2020. Shifting apes: conservation and welfare outcomes of Bornean orangutan rescue and release in Kalimantan, Indonesia. Journal of Nature Conservation, 55. https://doi.org/10.1016/j.jnc.2020.125807

Gillespie, T.R., Leendertz, F.B., Ahouka, S., Ancrenaz, M. et al. 2020. Great-ape health in human pandemics. Nature, 579 (497). https://www.nature.com/articles/d41586-020-00859-y

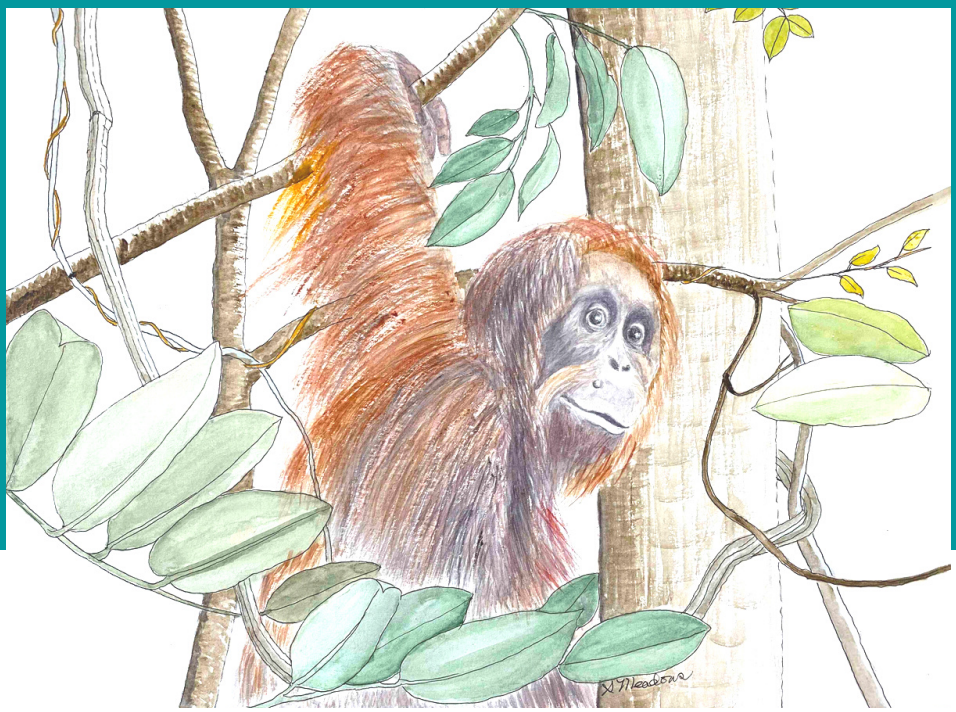
Sherman, J., Ancrenaz, M., Voigt, M., Oram, F., Santika, T., Wich, S., Meijaard, E. 2020. Envisioning a future for Bornean orangutans: Conservation impacts of action plan implementation and recommendations for improved population outcomes. Biodiversitas, 21 (2): 465-477.

Traeholt, C., Dahlen, B., Meijaard, E., Ancrenaz, M. 2020. Systematic review to develop recommendations on the management and monitoring of HCVs in oil palm landscapes. RSPO Int. Report, Kuala Lumpur, 52 pp.

Meijaard, E., Ancrenaz, M., Balen, B. 2020. Biodiversity impact of RSPO certification: an assessment of good practices. RSPO Int. Report., Kuala Lumpur, 61 pp.

STORIES FROM THE FIELD

JENNY: A LEGEND DISAPPEARS



The insights gained from Jenny have changed the face of orang-utan conservation locally and globally. We now know that Jenny and her kin can flourish in a fractured landscape if appropriately managed. Being an umbrella species for wildlife, Jenny has taught us that humans and wildlife can coexist if we give them a chance.

If you have ever visited the HUTAN Orang-utan study site, then you have probably met Jenny. Since 1998, she was one of our study site's significant highlights. Jenny was easily identifiable by the mole above her right lip. Over more than 22 years, she led us to the discovery of her forest kingdom and her way of life. We shared her joys while she was playing with her babies feasting on durian fruits or arboreal "hide-and-seek" parties; her struggles to find food during fruit scarcity; her maternal skills with "Etin" who was an infant male in 1998 when we first met them or "Mallotus" born in 2005, We witnessed her mourning following the loss of her neonate infant in 2013 and overjoyed a year later when her last daughter Ocean was born.

With DNA genetic paternity analysis, we found out that Jenny had given birth to at least two additional infants before we first followed her. Orang-utans reach sexual maturity between the age of 10 and 12 years of age, and the females have a baby every eight years on average. As such, we estimate that Jenny was over 55 years old when she died. Jenny was one of the oldest wild orang-utans ever known. And we will really miss her dearly.

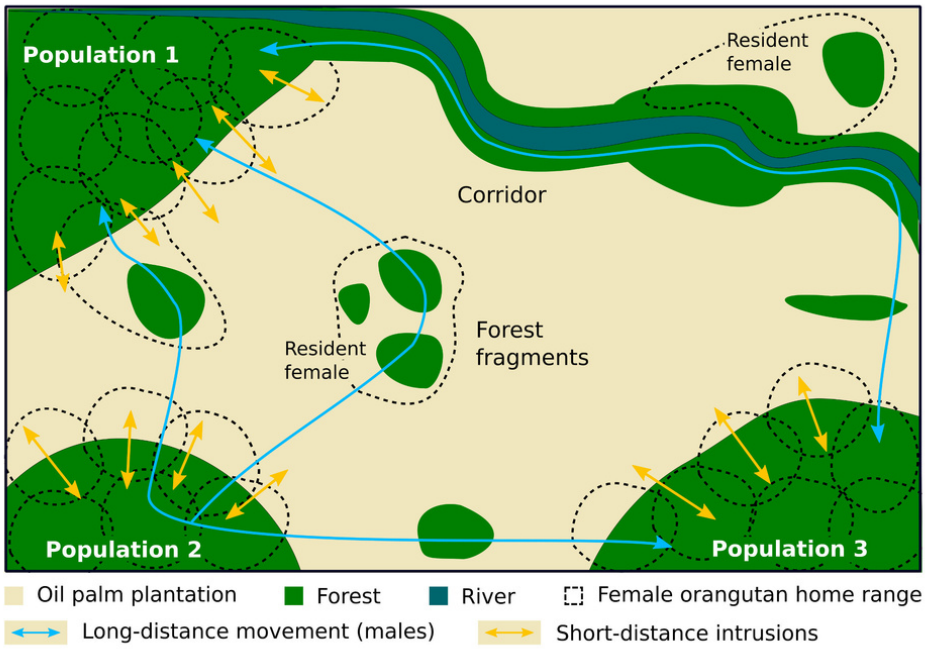
Since mid-2019, we noticed that Jenny started walking more often on the ground: she was weaker and weaker. Earlier this year, Jenny's condition deteriorated rapidly. She became extremely emaciated, spending most of her time on the ground, feeding on ginger plants' piths collected on the forest floor. Meanwhile, Ocean remained very healthy, sometimes helping her Mum breaking branches to finish her night nest. In July, Jenny took her last breath and passed away peacefully. We retrieved her body and buried it at our site.

Mohd Daisah Hussein bin Kapar
OURs researcher:

"JENNY is the orangutan who opened my eyes. I learned from her that orangutans are also contributing to the life and the balance of the natural ecosystems.

Jenny taught me from 0 until I could tell stories about orangutans and other animals, and could think of protecting them from extinction. Before meeting with her, I thought orangutans were terrifying, scary, and mean to eat our fruits. But only after I got to know Jenny did I realize that my perception was wrong. I miss her a lot."

ORANG-UTANS AND FOREST FRAGMENTS



Orang-utans are using agricultural landscapes, and management practices outside of protected areas must consider orang-utan needs for their long-term survival in Borneo.

Peaceful coexistence between people and orang-utans is necessary. We must maintain corridors and fragments of forest in these new landscapes; stop killing and unnecessary "wild-to-wild translocations".

Orang-utans need forests to survive. Hence the need to protect forests to sustain viable populations in the long-term. However our research shows that these large mammals are also using extensively non-protected areas, such agricultural landscapes including palm oil plantations.

For example, orang-utans living in forests adjacent to plantations penetrate the estates to feed on leaves and fruits of the palms, and to enlarge their home range, Some of the resident females who escaped killing or translocation during forest conversion can survive in small forest fragments left in the landscape and reproduce. Adult males are roaming across the landscape, often walking on the ground, looking for mating opportunities with the females who are surviving in forest fragments. These orang-utans found outside of protected forests are essential for maintaining some level of connectivity between populations living in isolated protected forests. In other words, the long-term viability of the entire orang-utan population in a landscape (called "metapopulation") will depend on the existence of resident and transient animals in the non-protected areas.

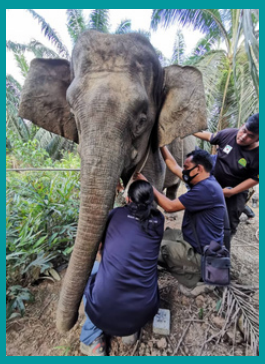
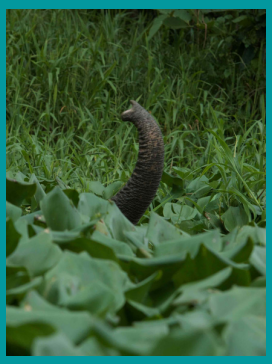
Our results indicate that most orang-utan populations across fragmented landscapes in Borneo could be viable if:

- (1) we maintained both existing larger protected areas and essential forest fragments (irrespective of their size)
- (2) we minimized killing and removal (via translocation) from the landscape.

Our results also show that the management unit of an orang-utan metapopulation includes not only the populations living in protected forests but also all the sub-populations and individuals who are found outside of these protected areas.

These important results were recently published in a scientific journal. We also conducted several press articles and interviews to explain the significance and the meaning of these findings for orang-utan conservation.

ELEPHANT COLLARING


Monitoring elephant movements in the Kinabatangan allows for a better understanding of the needs of animals needs and the development of efficient ways to mitigate conflicts with people in the floodplain.

In 2020, the combined teams of HUTAN, Seratu Aatai, and from the Sabah Wildlife Department captured two elephants in the Kinabatangan. A female called Diana and a male called Vina.

The capture, tranquillization, and collar fitting is a rapid operation, usually requiring less than an hour. However, tracking, following, and darting the animals can require two to five days of effort.

The two elephants recovered extremely well from the tranquillization and resumed their usual activities after a few hours. Elephant herds spend more and more time in oil palm plantations, feeding on the heart of the palms when the trees are cut down for new replantings.

Location data show that the network of protected areas is too small and fragmented to sustain the elephant herd in Kinabatangan. Elephants need to cross non-protected areas during their movements and spend an increasing amount of time in oil palm estates to feed on palms. The future of elephants in the area is strongly dependent on the crop owners' willingness to share their land with the elephants.

COEXISTING WITH ELEPHANTS

In three villages, we protected local graveyards from elephant intrusion.

Identifying solutions to this type of conflicts is a necessary requirement to harness local communities's support for biodiversity conservation and promote peaceful coexistence.

In November 28th, the team was informed that a baby elephant was roaming alone in a plantation Despite our search, it was impossible to locate the herd the infant was originating from. hence the baby was rescued by the team from the WRU and SWD and brought to Sepilok to join a small group of orphans

In 2020, more than 20 elephants were reported dead across Sabah. Some of them died of poisoning in oil palm plantations. The causative agent is not identified yet, and it is still unknown whether the cause was natural or intentional.

Seratu Aatai and Hutan organized several training sessions for the various "Community Elephant Ranger Teams" to teach villagers how to leave peacefully with elephants.

2020:
A FEW SNAPSHOTS

OUR PARTNERS IN 2020

Special thanks to all our partners for their support in 2020

***More than* 50,000 USD:**

Arcus Foundation – Beauval Nature (Zooparc de Beauval) - Houston Zoo - North England Zoological Society (Act for Wildlife; COOP; Chester Zoo) - Synchronicity Earth - World Land Trust

25,000 - 50,000 USD

Basel Zoo - Oregon Zoo Foundation – The Orang-utan Project - USFW Services - Wildlife Conservation Network* - Woodland Park Zoo

5,000 - 25,000 USD

CGMK Foundation - Cleveland Zoological Society - Mirai Process - Nashville Zoo - Saint Louis Zoo - Sudie Rakusin - The Orangutan Conservancy - The CRW Fund - Utah Zoological Society (Hogle Zoo) - Univet Nature - Vienna Zoo - Zoo La Palmyre

< 5,000 USD

Apenheul Zoo – Gdansk Zoo - SECAS - Toronto Zoo - Zoo Wroclaw Dodo Foundation - Zoo Bassin d'Arcachon

***Private Individuals: S. Meyer-Ewald*; M. and P. Harding*; B. Mouras*; D. Van der Mark*; C. Sinidol*; G. Meadows*; K. Grady*; W. Chang*; K. Gublin; and all our partners.**

HUTAN

Credit photo: HUTAN/KOCP (p.10: Paul Swen)

Special thanks to Shin Meadows for her beautiful illustrations.