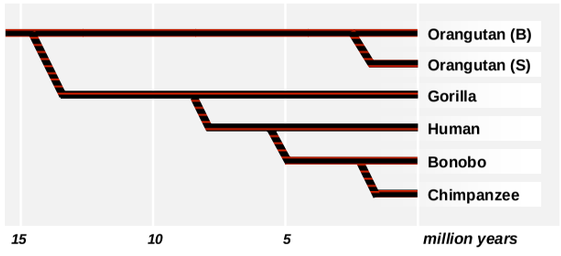
WHAT'S IN A NAME?

Orangutan is a Malay or Indonesian word meaning "*person of the forest*". Local peoples use many different names, like *mawas*, *maias* or *kahiyu.*

TAXONOMY

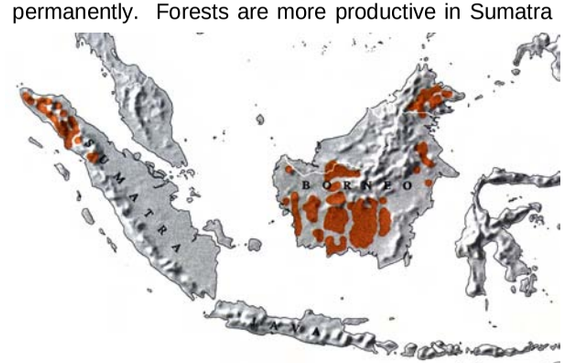
Orangutans are Asia's only great apes, close relatives of Africa's chimpanzees, bonobos and gorillas.



Orangutans survive only on Borneo and Sumatra, the third (740,000 km^2) and fifth largest (475,000 km^2) islands in the world. Based on recent genetic findings, many scientists now classify Bornean and Sumatran orangutans as separate species, *Pongo abelii* and *Pongo pygmaeus*. The two appear to have diverged 1.1-2.3 million years ago, almost certainly because of being isolated on different islands. No subspecies are recognized on Sumatra. Borneo may have three: *P. p. pygmaeus* (NW, mid size, pop. 3,000), *P. p. wurmbii* (CW, largest, pop. 38,000), *P. p. morio* (NE, smallest, pop. 14,000). By 2005, scientists estimated only 55,000 remain on Borneo and 7,300 on Sumatra.

DISTRIBUTION, HABITAT, DIET

In Sumatra, orangutans remain only in the northern tip. They are found across Borneo, but not everywhere. Orangutans live in tropical rainforests, mostly lowland and swamp forests rich in biodiversity. Highlands do not produce enough food to support them permanently. Forests are more productive in Sumatra than Borneo, which is probably why orangutans live at higher densities in Sumatra. Within their habitat, each independent orangutan lives within its own *home range*, an area it uses regularly. Neighbors' home ranges overlap. Range size depends on food so they are larger in poor habitat. An adult female may need a range up to 6-8 km^2.



Current orangutan distribution

Orangutans are *frugivores*, or fruit eaters. 50-60% of their foods are fruits. Fruits are poor in proteins and fats, so they eat many other items too: leaves, flowers, honey, shoots, stems, seeds, fungus, pith, bark, soil, insects, eggs, and small mammals. They eat lower quality items as *fallback foods* when fruit is scarce. Some of their foods are medicinal: they protect against malaria, control parasites, or treat diarrhea. The result is a menu of up to 300 species and 400 items. It takes vast amounts of food to satisfy their needs, so they spend most of their time eating.

MORPHOLOGY

Orangutans share many features with African great apes, including large body, no tail, building nests for sleeping, and long, slow lives. Their most distinctive feature is their red-orange color—other great apes are black. Their most impressive feature is extremely large size—they are *megafauna*, scientifically, and the world's largest primarily arboreal mammals. Largest by far are adult males, up to 1.25 m tall and over 100 kg in weight. Their strength is legendary, reputedly seven times as great as a man's.

Orangutans have opposable thumbs on hands and feet to facilitate travel in the trees, like all nonhuman primates. Their arms are unusually long relative to their legs because, as apes, their main mode of travel is *suspensory*. They hang or swing under branches rather than walk on top as monkeys do. For the same reason they have elongated, hook-like hands and feet and especially mobile hip joints. On the ground they mostly walk quadrupedally, on their fists, but occasionally bipedally like humans.

Adult male and female orangutans are physically very different (*sexual dimorphism)*. Males are almost twice as large; they also have flanges on the sides of their face (cheekpads), long shaggy hair that can resemble dreadlocks, drooping throat pouches, and a unique long call.

Borneans and Sumatrans also differ. Borneans have stocky bodies, broad faces, coarse hair ranging from orange to brown or maroon, and dark skin. Sumatrans are more *gracile*. They have more slender bodies, narrower faces, redder, lighter, longer, denser hair, and very light hair around eyes, mouth, and flanges. Bornean adult males have larger throat pouches and flanges. Sumatran males and females both grow long beards and the males may have mustaches.

Adult males
L Sumatran
R Bornean

Adult females
L Sumatran
R Bornean

Origins cannot by identified by looks alone. On Sumatra, hair grades from bright red to rather dark brown and individuals with very long, gracile fingers are found along with those with much stubbier fingers. Variation is even greater in Borneo, much of it following the geographic lines that divide its three subspecies.

LIFE HISTORY AND DEVELOPMENT

Orangutans live life in the slow lane. They grow and breed slower than any other land mammal, even elephants, and whales.

- Life span: 45-55 yr (over 60 in captivity)
- Weight: adult M/F 87/37 kg; newborn 1-2 kg
- First Birth: 11-15 yr (females)
- Gestation: 8.6 mo (260 days)
- Inter-birth: 6-9 yr (longer on Sumatra)
- Weaning age: 5-6 yr (Borneo), 6-7 yr (Sumatra)
- Dependency: 7-10 yr
- Dispersal: M and F leave mother's range

Orangutans develop in 5 stages: infant (0-4/5 yr), juvenile (4/5-7/8), adolescent (7/8-15), adult-reproductive (15-48), post-reproductive (48+). Their development seems very flexible, accelerating or slowing markedly depending on food or social conditions. Like other great apes, orangutans remain semi-dependent immatures for a greater portion of their lives than other mammals, even other primates. Infants depend entirely on their mother until about 2 yrs old and heavily until weaned at 4 or 5. After weaning, as juveniles, they begin exploring and refining the basic skills—foraging, nesting, navigating—they learned as infants. Initially they stay within sight of mother. They only become fully independent as adolescents.

Males show a unique *bimaturism*. Adult males have two physical types, flanged and unflanged. Unflanged males, usually younger, are mature but have not yet developed flanges, drooping throat pouch, huge size, and long call. When they do mature it is fast, although their early long calls often sound rather awkward.

INDIVIDUAL BEHAVIOR

A typical orangutan day starts at dawn, ca 6:00 am, with waking and leaving the nest where they slept the night. Then they eat, rest, travel, and (rarely) socialize. They spend 2-3 hr seriously feeding in the morning, rest midday, then travel and feed again through the afternoon. Only about 5% of their day is spent socializing, probably less avoiding predators (they have few: tigers, e.g., in Sumatra but not Borneo). They end the day at dusk, about 6:00 pm, building a new nest for the night.

Foraging. Orangutans spend 50%-60% of their day foraging. Basically, they follow their foods. They seek out fruits (their favorite) but are also rather *opportunistic*, eating whatever they find along the way. They seem to remember the location of important foods because they travel directly to them.

Travel. Each day orangutans travel, at ca 0.3 km/hr, mostly looking for food within their home range. They may travel only as far as needed to eat, as little as 90 m or as much as 3 km. They are rather nomadic, traveling and nesting in different places each day. They travel mainly in the trees but adult males may travel on the ground—perhaps where they are too heavy to move safely in the canopy. Unlike other apes, orangutans rarely jump, drop, or brachiate (swing branch to branch by their arms). Instead they climb, clamber, or sway slender trees to cross forest gaps.

Eating flowers

Asleep in tree nest

Resting. Orangutans rest a lot. Each night, they build an intricately woven nest of leafy branches in the trees. They often nest near a food tree that can provide the evening's dinner and tomorrow's breakfast. They also spend up to 40% of the day resting, napping on a quickly made day nest or a comfortable branch or liana.

CONSERVATION

On IUCN's *Red List of Threatened Species* Borneans are *endangered*, at very high risk of extinction in the near future. Sumatrans are *critically endangered,* among the world's 25 most endangered primates. Humans cause their greatest threats: habitat loss, hunting and disease.

Clearing forests is often the first phase of development. It destroys orangutan habitat because the forests humans want are often those orangutans need. Logging, oil palm plantations and natural resource industries have cleared vast tracts of Bornean and Sumatran forest. Development is also at the root of fires that have eradicated much forest, even if natural droughts set the stage.

Female stranded in dead tree

Orphan infant

Humans hunt orangutans for food, as pests and to sell to the illegal wildlife trade. Development enables hunting by making forest foods scarce. Orangutans leave the forest seeking food, often raid farms or plantations, and become easy targets. Development also increases disease threats. Orangutans are susceptible to many human diseases, even tuberculosis, polio, and hepatitis.

HOW YOU CAN HELP

- Avoid products using non-sustainable rainforest resources (e.g., protected tropical woods, palm oil)
- Avoid activities that exploit or mistreat orangutans (e.g., pets, entertainment, intrusive research)
- Recycle, especially cell phones (www.eco-cell.org)
- Support orangutans through ***BOS Canada*** and other orangutan protection organizations
- Check ***BOS Canada's*** web site for more information

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SOCIAL LIFE

Orangutans are *semi-solitary*—or *semi-social*. It is adults who prefer solitude, especially adult males. Adult males range alone and are so intolerant of one another that they may fight to the death if they meet. Adult females are semi-social, usually living with one or more offspring. Offspring leave their mother at adolescence but females stay near their mother's range while males move farther away. Immatures are more sociable, traveling and playing with family or friends for days on end.

Scientists think orangutans do not live in permanent groups because they cannot: Food can be so scarce in their forests that they cannot afford to share. They nonetheless live in loosely organized, highly dispersed *communities*. Adult female ranges overlap and adult male ranges cover several female ranges, so neighbors may meet. Sexually receptive females may also *consort* with a male for days or weeks. Males may force females to copulate. Orangutans are most likely to socialize when food is abundant. Competition is partly handled by male and female *dominance* hierarchies based on size, age and condition.

Orangutans are known as quiet, but they communicate desires, needs, and intentions by *vocalizations*, *gestures*, *postures*, and *facial expressions*. Like chimpanzees and humans, orangutans peer at items that interest them and beg for ones they want. They make play faces and breathy laughter when playful; whimper, pout and throw tantrums when unhappy, and scream in fear, frustration, or rage. They apologize after conflicts by being very nice. With partners they like, they even share food.

Peer

Play face

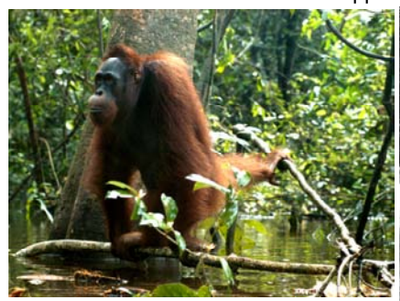
Pout face

Orangutans also have unique ways of communicating. They kiss-squeak when annoyed by sucking air through pouted-pursed lips. As annoyance grows, they make pig grunts, grumphs, gorkums, and lorks—increasingly intense throaty, belch-like growls. Adult males long-call and snag-crash to announce their presence or intimidate. Long calls start with grumbles then pulses and end with bubbles and sighs. Snag-crashing is pushing over standing dead trees.

INTELLIGENCE

Orangutans, like other great apes, are the most intelligent nonhuman primates and the nonhuman species most similar, mentally, to humans. Orangutans are at least as intelligent as chimpanzees and bonobos. In captivity they are famous as the *mechanical geniuses* of the great apes for their tool abilities, a hallmark of high intelligence. They also seem to solve some problems by *insight*, i.e., thinking vs. trial-and-error, can master simple sign language and arithmetic, and can recognize themselves in mirrors.

Wild orangutans use tools less than chimpanzees but their manual skills are just as complex. They also show high intelligence in forest travel, possibly having *mental maps* of the location of food sources and the distances, routes, and obstacles in between. They seem to plan routes in advance, choosing directions that lead to predictable goals. For such large-bodied beings, just traveling in the trees probably involves complex calculations to select what set of branches can support their travel.



Above: Orangutans bend slender trees to make bridges across water

Right: An orangutan uses a box step and a stick to get an out-of reach item

Orangutans show high social intelligence despite their solitary side. Their deception is as sophisticated as chimpanzees'. They intervene in quarrels to support friends, console victims of attacks, reconcile after conflicts, and share food with friends. They are astute social learners, learning new skills by imitation. They rarely teach but show others what they want by *miming*. They may mime their partner's role as well as their own role—especially if the partner doesn't respond as they desire. Perhaps the most stunning finding is that they create complex cultures.

A BOS CANADA PUBLICATION

BOS Canada is a registered Canadian charity for protecting orangutans and their habitat. Activities in Canada focus on education and fundraising. Funds raised support orangutan protection in the field, e.g., rehabilitating ex-captives to free life, surveying and protecting existing populations and habitat. See www.orangutan.ca or contact us at (416) 462 1039 or boscanada@gmail com.

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Orangutans at a Glance