Conservation of the Pig-Nosed Turtle (Carettochelys insculpta)
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Conservation Biology

BACKGROUND BIOLOGY

Habitat:
- Lives in freshwater and only comes onto land to lay eggs
- Found in Indonesia, Papua New Guinea, and northern Australia
- Migrational tendencies are to seasonal changes
- Dry season-deep pools in the rivers
- Wet season-deep water (such as lakes) and estuaries
- The prominent pig snout lends to its common name

Physical Characteristics:
- Unique among freshwater turtles due to flippers similar to sea turtles
- Shell is soft and lacks scutes (hard-bony protective covers found in most turtle shells)
- Adults can grow up to 70cm long and up to 20 kg in weight
- The prominent pig snout led to its common name

Population Size:
- Classified as "vulnerable" on the IUCN red list in 1996
- In Indonesia and Papua New Guinea, population has significantly decreased by 57% in the past 30 years

Reproduction:
- Nesting begins during middle to late July and ends in late September
- Females create a den for their eggs in dense sand so as it will not collapse
- No parental care so nest site choice is an important indicator of reproductive success
- Average amount of time spent on the beach nesting is 27 minutes
- Gender of the offspring is temperature specific: males are produced <31.5°C
- Two clutches of eggs with 7-39 eggs are laid biannually during the dry season
- Hatchings will emerge after a rainfall, at night, and when there is a decrease in temperature
- Incubation lasts on average 86 days

Habitat Threats:
- In Northern Australia, introduction of the water buffalo has destroyed turtle habitat due to trampling
- Waterfront development and activity has reduced nesting sites and increased contact with humans
- During the 2007-08 nesting season, 3.3% of 120 nests survived and only 2.9% of 104 nests survived in 2008-2009
- Livestock, feral animals and agriculture threaten the size of the habitat available
- Habitat degradation occurs due to water extraction for agriculture, mining pollution, and fragmentation of rivers

Diet:
- Omnivores
- Diet includes fruits, vegetation, mollusks, crustaceans, insects, fish, and small mammals

Resource Threats:
- Food resources reduced by water buffalo that can eat up 30 kg of vegetation a day
- twilight and early morning vocalizing underwater. Copeia 105: 182
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Population Size:
- Total population size remains unknown
- Estimates of about 3000 turtles in Northern Australia
- Australian population is separated from the populations in Papua New Guinea and Indonesia; therefore, difficult to estimate in these diverse habitats

Reasons for Endangeredness:
- Habitat loss due to water buffalo and human development
- Trapping and hunting for food, eggs, and shells
- Habitat degradation due to pollution and fragmentation
- Climate change leading to increased water temperature and altered nesting sites

Conservation Plans in Place:
- Species was nominated to be placed on the threatened species list according to the Environment Protection and Biodiversity Conservation Act of 1999, but declined
- Pika Project in Papua New Guinea
  - Members measure turtle harvest each year
  - Local awareness with children’s books and workshops
  - Members also define its habitat zones on shores where no one can harvest eggs
- Balances needs of the pig-nosed turtle and a meat source for the native people
- Funding for Pika Project by partnering with the University of Canberra and the WWF; scientists from the Dept. of Environment and Conservation are establishing protection sites
- Enforcement:
  - Local field assistants are trained to monitor no take zones.
- Feral Water Buffalo (Bubalus bubalis) – introduced to the Kikori region of Papua New Guinea; turtles are sold for 39 to 56 USD

My Conservation Plan:
- Awareness using social media:
  - The video of the straw up the sea turtle’s nose got worldwide attention.
  - Similar social media influences can get the word out about the endangerment of the pig-nosed turtle
- Funding:
  - Symbolic adoptions can allow for the person to have a “pet”
  - No additional responsibility of taking care of it
  - Apparel products can be made with the image of the pig-nosed turtle on them to raise money for conservation projects
- In situ Conservation Plans:
  - Fencing to protect turtle habitat from water buffaloes will lead to reduction in trampling of nesting sites and overgrazing of vegetation that both species eat
  - Translocation:
    - Relocate some eggs each season in addition to the no take zones, more hatchlings can be saved per nesting season
  - Buildings dedicated to incubation sites can be set aside for conservation efforts

BIBLIOGRAPHY


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Figure 1. Vocalizations of the pig-nosed turtle underwater. (Fiorana et al., 2017)

Figure 2. Pig-nosed turtle in freshwater habitat. (Source: Pig-nosed Turtle, Aboutanimals.com)

Figure 3 and 4: Natives of Papua New Guinea harvesting the pig-nosed turtle. (Source: McLeman, 2016).