
Summary Statement for the 4th Annual Hawaii Pacific University Sea Turtle Workshop- As Discerned by George Balazs and Thierry Work

1 message

George Balazs <itsahonuworldinhawaii@hotmail.com>

Mon, Dec 1, 2025 at 9:30 AM

To: George Balazs <itsahonuworldinhawaii@hotmail.com>, honumazu <honumazu@gmail.com>

Summary Statement for the 4th Annual Hawaii Pacific University Sea Turtle Workshop Titled- "Signals of Carrying Capacity from Green Turtles in Hawaii: Sifting the Wheat from the Chaff"- Prepared by George Balazs and Thierry Work

Following the 4th HPU Sea Turtle Workshop, convened on October 4, 2024, Thierry Work and George Balazs assigned a plausibility score of 1 (low), 2 (medium) or 3 (high) involving 12 signals (indicators) suggestive of reaching carrying capacity in foraging aggregations of the Hawaiian green turtle population, as presented and/or discussed at the workshop. Several of the signals were combined, resulting in eight elements that were scored. Scoring was done independently by each of us. Scores were then combined yielding a final tally expressed as a percentage; the higher the percentage the more likely the probability that the Hawaiian green turtle population was at or near carrying capacity in at least some segments of its range; the lower the percentage the less likely of being at or near carrying capacity. The resulting mean score from this exercise was 83%. Individual scores assigned ranged from 67-100%. Thierry Work's final score was 79% and George Balazs' final score was 87%, hence $79 + 87$ divided by $2 = 83\%$. Therefore, our concluding statement for the exercise was that **There is an 83% likelihood of Hawaii's green turtle population being at or near carrying capacity in some portion of its neritic nearshore foraging pasture range.**

List of Signals of Carry Capacity Presented and/or Discussed at the 4th HPU Sea Turtle Workshop

Signals 1, 2 & 3- Foraging pastures in West Hawaii Island, from Honaunau to Puako, with the exception of Honokohau Harbor and the Waikoloa Hilton Lagoon, are similar to Kaloko-Honokohau National Historical Park in algal turf cover, reef structure, and density and size classes of green turtles.

Signal 4- The transition from night-to daytime foraging at many coastal areas, starting in the late 1980s, can be circumstantially linked to less-than-optimal food resources for the increasing number of turtles.

Signal 5- The early 1990s onset of green turtles crawling ashore to bask in the Main Hawaiian Islands, both during the day and at night, is primarily an energy conservation measure linked to low food resources.

Signal 6- A robustly increasing green turtle population with a marginal and far-away historically rooted nesting site gives rise to increasing attempts to colonize new sand beach areas for nesting in the Main Hawaiian Islands.

Signal 7 & 8- A robustly increasing green turtle population necessitated expansion into new and novel marine habitats and use of non-traditional food sources.

Signal 9- Undernourished green turtles in Hawaii have increasingly turned to baited hooks to satisfy their nutritional needs thereby resulting in increased fishing line entanglement and hooking.

Signal 10A- Healthy numbers of tiger sharks in the Hawaiian Islands fulfill their ecological role as apex predators of green turtles.

Signal 10B- A significant range shift by the Hawaiian monk seal into the Main Hawaiian Islands has resulted in periodic reports of predation and harassment of green turtles.

Signals of Change

Trying to Make Sense of it All

- The Wabnitz 2010 Carrying Capacity Paper
- Slow Growing
- Body Fitness
- Night-to-Day Foraging
- Coming Ashore to Bask
- Expanded Nesting Range
- Novel New Neritic Habitats
- New Foods
- Hooked and Entangled
- Tiger Sharks and Monk Seal Apex Predators
- Tumor Disease Decline