

An additional outcome of the July 7th meeting was a draft schematic outlining the process and potential timeline of steps necessary to fully recover and delist the Hawaiian green turtle stock. This stock appears to be genetically and geographically discrete and recovering at a rapid rate. This schematic is put forward as an example only, we recognize that this process may be hastened or delayed due to numerous factors. We recognize the timeline presented is entirely optimistic.

Information and literature were reviewed during the meeting and compared with the Federal Register notice (<http://www.nmfs.noaa.gov/pr/pdfs/fr/fr61-4722.pdf>) regarding the requirements of DPS designation, such as *Discreteness* (physically, physiological, ecological, or behavioral), and *Significance* (biological and ecological). The most pertinent information reviewed was the following:

1. Balazs and Chaloupka. 2004. Thirty-year recovery trend in the once depleted Hawaiian green sea turtle stock. *Biological Conservation*, 117:491-498.
2. Balazs and Chaloupka. *In press*. Recovery trend over 32 years at the Hawaiian green sea turtle rookery of French Frigate Shoals. *Atoll Research Bulletin*.
3. Dutton and Balazs. *In review*. Molecular Ecology of the Green Turtle (*Chelonia Mydas*) in the Hawaiian Archipelago: Evidence for a Distinct Metapopulation.
4. Balazs and Chaloupka. 2004. Spatial and temporal variability in somatic growth of green sea turtles (*Chelonia mydas*) resident in the Hawaiian Archipelago. *Marine Biology*, 145: 1043-1059.

Other papers that were found relevant include:

5. Satellite telemetry of green turtle nesting at FFS and Rose Atoll (1995, 14th Annual ST symp.)
6. Homeward Bound: Satellite tracking of Hawaiian greens from nesting beaches to foraging pastures (1994, 13th Annual ST symp).
7. Satellite telemetry of migrant male and female green turtles breeding in the Hawaiian Islands (2000, 18th Annual ST symp)
8. Growth rates and residence of immature green turtles at Kiholo Bay, HI. (2000, 18th Annual ST Symp)
9. Green turtle foraging and resting habitats at Midway Atoll: significant findings over 25 years from 1975-2000 (2004, 21st Annual ST Symp).

To gather additional information/evidence, the following questions were posed to G. Balazs for his input to compliment the information in regards to spatial (ecological) significance of the Hawaiian green turtles in the Hawaiian archipelago:

- Does a paper exist that compiles satellite telemetry data of all HI greens that have been transmitted in the archipelago? Or if one does not exist, what papers are citable to include?

Status: Balazs provided the following papers to add to papers #5-7 above:

- Balazs, G. H. 1976. Green turtle migrations in the Hawaiian archipelago. *Biol. Conserv.* 9:125-140.

- Balazs, G. H. 1980. Synopsis of biological data on the green turtle in the Hawaiian Islands. U.S. Dep. Commer., NOAA Tech. Memo. NOAA-TM-NMFS-SWFC-7, pp. 141.
- Balazs, G. H. 1983. Recovery records of adult green turtles observed or originally tagged at French Frigate Shoals, Northwestern Hawaiian Islands. U.S. Dep. Commer., NOAA Tech. Memo. NOAA-TM-NMFS-SWFC-36, pp. 42.
- A graphic was presented at a PIFSC May 2006 meeting entitled "Post-reproductive migration of 16 green turtle satellite tracked from FFS, NWHI, 1992-98". Could you please send this graph to be included?

Status: *Graphic provided*

- Of all the turtles tagged in Hawaii, has there ever been a Hawaii green sea turtle tag return/recovery outside of the Hawaiian archipelago?

Status: *Reply - Yes there are two tag recoveries outside of Hawaii- postnesters but not for many, many years; one in Japan and one in the Philippines. We consider these honu that got "off track" since only two over so many years and so many taggings.*

- How many turtles have been tagged in Hawaii? And how many of these tagged turtles have been recaptured in Hawaii?

Status: *Numbers provided (includes approx. 12,000 tagged and approx. 7,000 recaptures)*

- Any other published information (other than genetics) that addresses or provides evidence for the spatial separation of the Hawaiian population? Of relevance would be foraging ground studies. Which papers are most important?

Status: *To accompany papers #4 & 8-9 above, Balazs suggested the following paper:*

- Balazs and Chaloupka. 2005. Modelling the effect of fibropapilloma disease on the somatic growth dynamics of Hawaiian green sea turtles. *Marine Biology*, 147: 1251–1260.

Outcomes

A document is currently being drafted which compiles the above listed information/papers as they relates to the necessary requirements of a DPS. The finalized paper/packet will be submitted to NMFS OPR to complement the Services five year status review of the green turtle population.

Attached is a draft of a possible timeline for delisting of the Hawaiian green turtle population that was discussed/developed during the July 7th meeting.

Potential Steps Towards Recovery of Hawaiian Green Sea Turtles

