

## Tunnels (Makua) Kauai- 2015 Summary of Prominent Findings by G.H. Balazs in Collaboration with Thierry Work, 14-15 June.

- The Tunnels Reef and adjacent habitats visited have an abundance of easy-to-view green turtles.
- The area is intensively used for human recreational beach going, swimming, kayaking, snorkeling, including guided tours.
- The turtles exhibit a comfortable behavior in the presence of snorkelers, swimmers and people standing in the water.. They appear not to view people as predators.
- Juvenile turtles forage on the red alga *Pterocladella* growing almost exclusively in holes and crevices in the hard-bottom reef close to shore. Elsewhere in the open flats of the reef *Pterocladella* is sparse, possibly due to heavy grazing by turtles and other herbivores.
- Juvenile turtles need to work hard to forage on the *Pterocladella* growing down inside the holes and crevices due to wave action and the small size of the holes relative to the size of the turtles.
- The juvenile turtles seen were in robust body condition, with one exception where the turtle was mildly emaciated. This turtle was hand-captured for blood and tissue sampling (see Thierry Work report forthcoming).
- Nearby to the west there is a sandy-bottom shallow area close to shore with strong currents marked by lifeguard warning flags. Subadult turtles forage here in a unique manner by efficiently ingesting balls of the green alga *Microdictyon* that are swept along to them by the current. These turtles were also judged to be in robust body condition.
- The Tunnels reef flat close to shore is shallow with <5% coral cover consisting mainly of limestone dominated with thin carpets of algal turf and intermittent areas of substantial *Turbinaria*. No turtles were seen foraging on the algal turf or *Turbinaria*.
- No signs of fibropapillomatosis tumors were seen on any of the turtles.
- Monk seals rest on the Tunnels Beach on average of 2-3 times a week, hence are present in near shore waters proximal to turtles when arriving and departing from hauling out on shore. This information was documented on-site in a phone call to Dr. Mimi Olry after noticing numerous 'caution monk seal' signs stored in holders along the beach.
- All turtles seen had the appearance and behavior of being in good health, with the exception of the one mildly emaciated juvenile encountered and captured for sampling. All turtles exhibited the normal common 'Hawaii honu condition' of having resided in near shore neritic habitat for extended periods. Hence they had varying amounts of coralline and fleshy algae on their bodies and numerous minor superficial nicks and contusions to hard parts.
- New recruits from the pelagic off-shore environment to the Tunnels near shore neritic habitat undoubtedly 'convert' rapidly from a clean unblemished body appearance to the body state as described above.
- The Tunnels Reef and adjacent habitats have an abundance of turtles suitable for a more intensive study than the short two days devoted on 14-15 July 2015 by the team of USGS Thierry Work, Renee Breeden, and PIFSC George Balazs.