NOAA FISHERIES

- Pacific Islands Fisheries Science Center

NOAA Fisheries Service Pacific Islands Region Overview

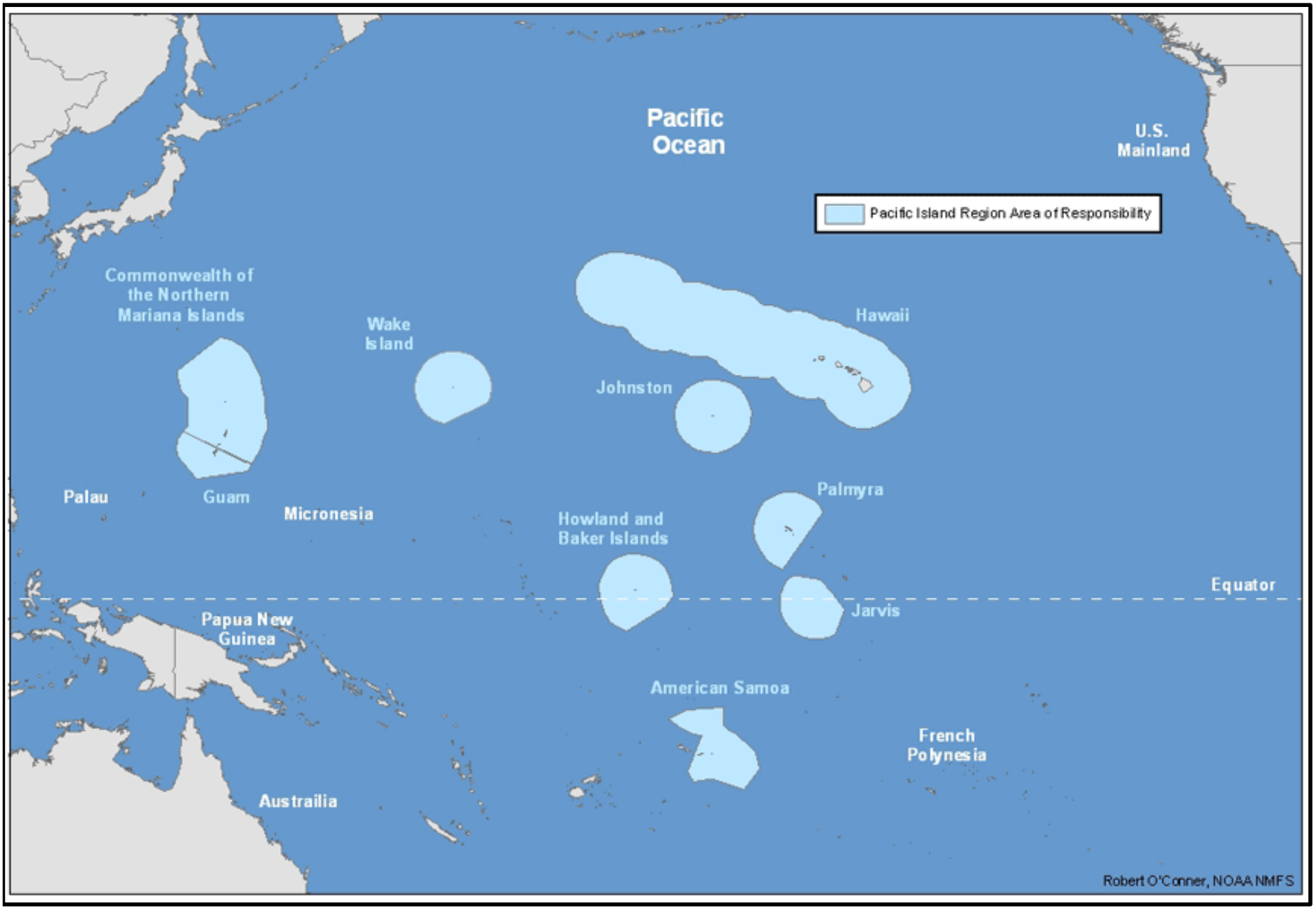
Irene Kelly (presenter)
NOAA Pacific Islands Region
Sea Turtle Recovery Coordinator

Sea Turtle Management in the U.S.

- In the United States, sea turtles are jointly managed by NOAA Fisheries and the U.S. Fish and Wildlife Service in in collaboration with States and US territory governments.
  - NOAA is responsible for turtles when in the water
  - USFWS is responsible for turtles when on land
- NOAA is further divided by management and research:
  - The Pacific Islands Regional Office (PIRO)
  - The Pacific Islands Fishery Science Center (PIFSC)

PIRO Protected Resources Division

- Conserve and protect species listed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA)
- ESA Sec. 4 – Listing and updates; critical habitat, recovery planning and implementation; bycatch reduction
- ESA Sec. 7 – Mandate for federal agencies to avoid/minimize the risk of extinction



NMFS Pacific Islands Region

Sea Turtles of the Pacific Islands Region

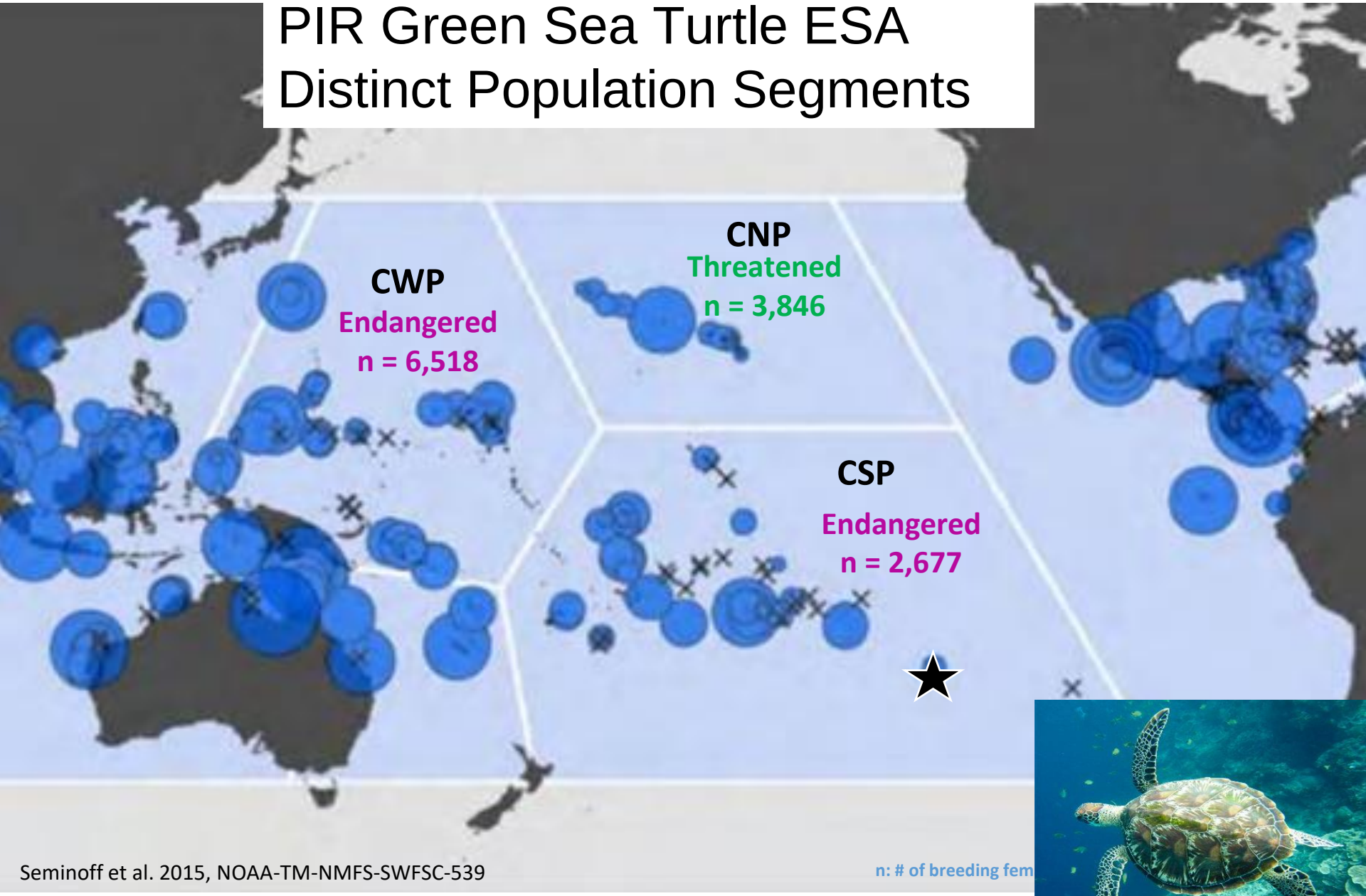
PIR Management & Recovery Needs

- To understand population status and trends to inform management and support recovery
  - Presence/absence
  - Occurrence/home range
  - Abundance & trends
  - Population structure
    - Age & growth
    - Sex ratios
    - Reproductive output
    - Mortality rates
  - Foraging Ecology
  - Habitat use, migrations & connectivity
  - Risk Assessment & Threats
    - Anthropogenic
    - Environmental

PIFSC Research to Support Management

- NOAA PIFSC – Marine Turtle Biology & Assessment Program (MTBAP) & Fishery Research & Monitoring Div (FRMD)
  - Nesting beach surveys
  - Marine surveys & capture-mark-recapture programs
  - Tagging & sampling
    - Flipper/PIT, Satellite, GPS tags
  - Sample analysis: genetic, SIA, hormone
  - Health assessments
  - Bycatch assessments & tech research
  - Necropsies & rehabilitation (stranding programs)
  - Modeling population status, trends & viability

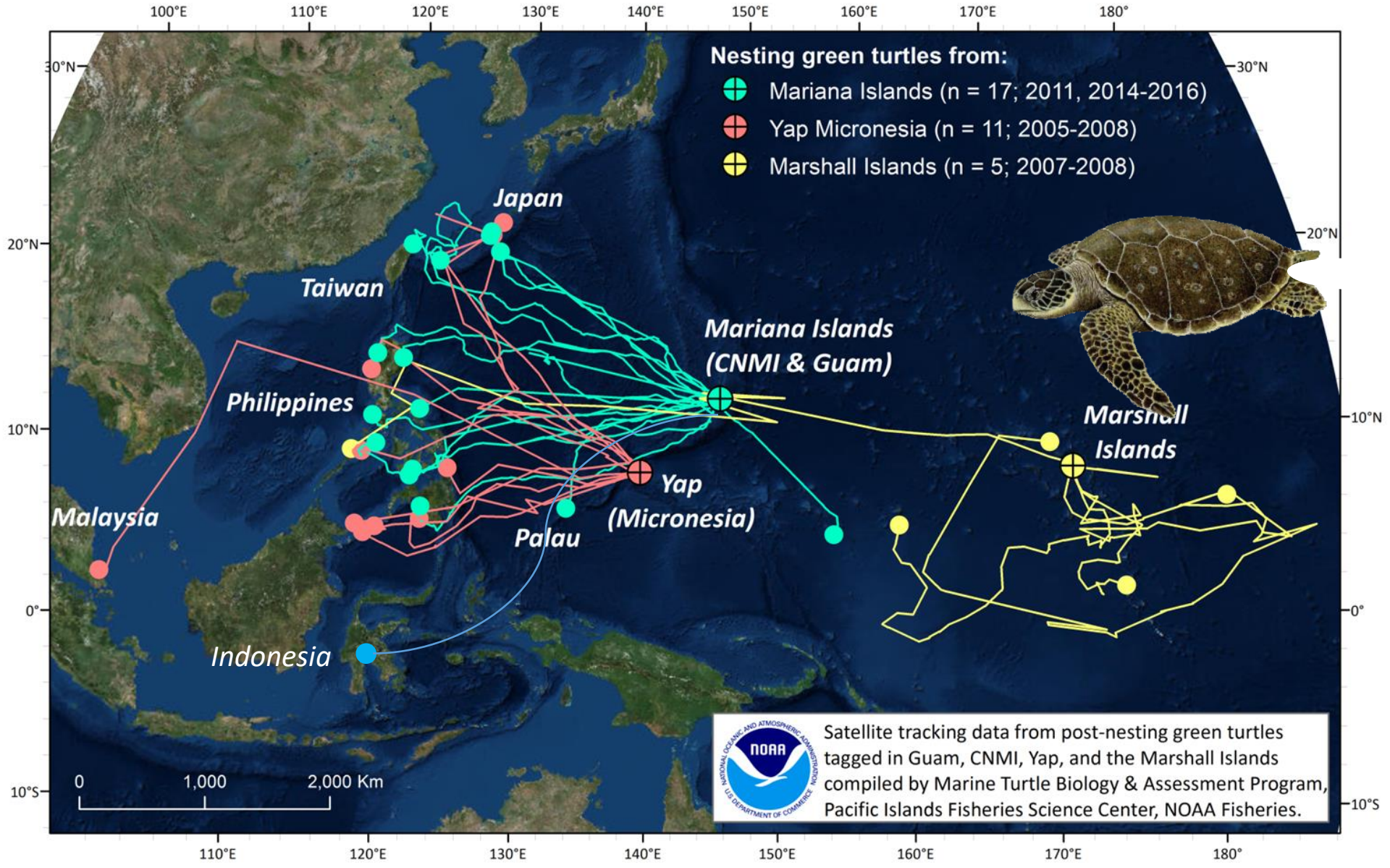
PIR Green Sea Turtle ESA Distinct Population Segments



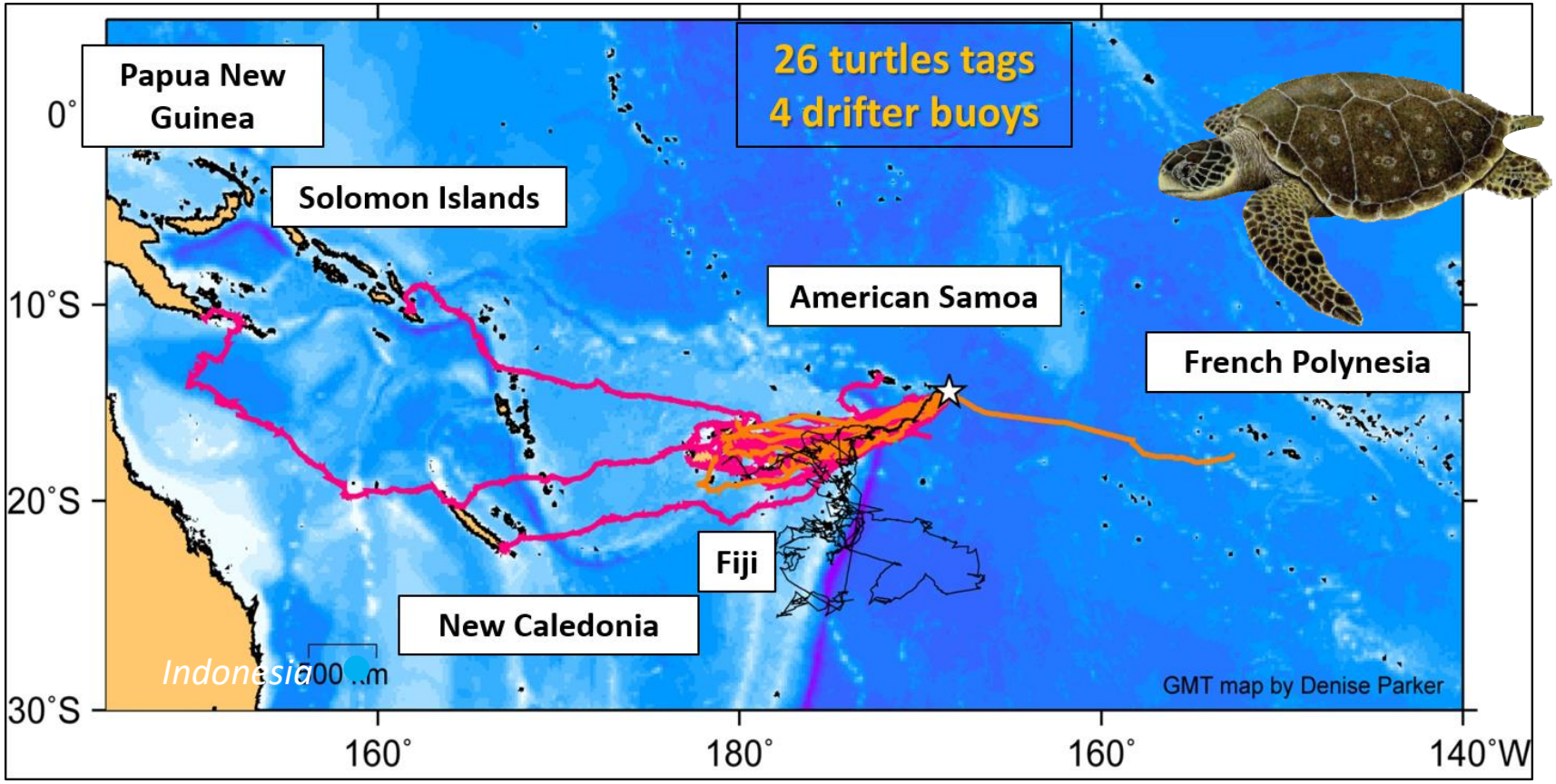
Seminoff et al. 2015, NOAA-TM-NMFS-SWFSC-539

n: # of breeding fem

Mariana Islands CWP Green Turtle nesters migrate to forage in habitats throughout the Western/Asia Pacific

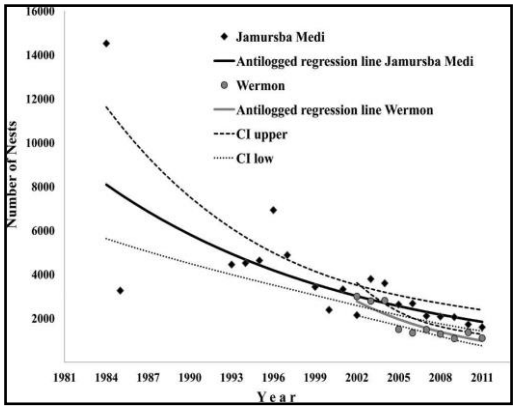


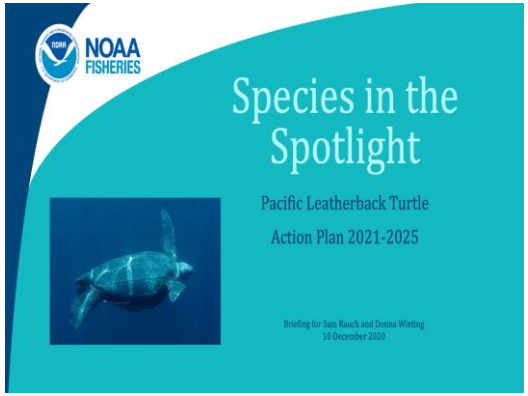
Am. Samoan CSP Green Turtle nesters migrate to forage in habitats throughout the South Western Pacific



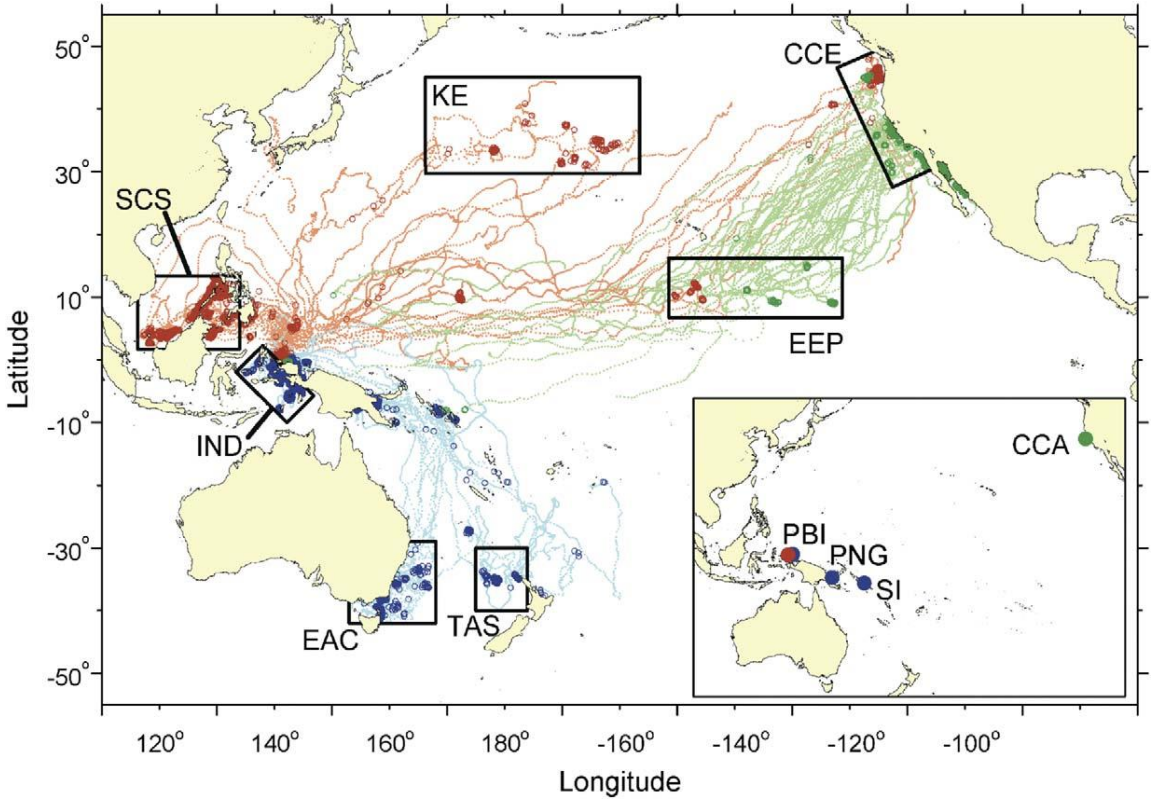
Pacific Leatherbacks (*Dermochelys coriacea)*
1) Trans-oceanic life history
2) Coastal foraging behavior

From: Tapilatu et al., 2013





Fishery bycatch and unregulated harvest is an important driver of population declines



From: Bailey et al., 2012

Current International Grant Projects

- Grants primary tool for funding & project implementation
  - NOFO released in Nov (if a grant program if funds are available)
- PIRO International Grant Projects
  - West Pacific leatherback turtles (FY20 - FY22)
    - 2 in Indonesia (Buru Island & Kei Islands)
    - 1 in Solomon Isl (Isabel Island)
  - Central West Pacific green turtles (FY18 - FY22)
    - 1 in Philippines
  - Central South Pacific green turtles (FY17 – FY21)
    - Fiji (PIRO)
- USFWS International Grant Projects
  - West Pacific leatherback turtles
    - 1 in Indonesia (Jamursba Medi/Wermon)
    - 1 in Solomon Isl (Rendova & Tetapare)

University of the South Pacific, Fiji – Marine turtle capture-mark-recapture Program

- Fiji provides important foraging grounds for green turtles from American Samoa (72%), Cook Islands, French Polynesia, Australia, and Tonga.
- Over 600+ captures; tagging; morphometrics; tissue sampling; foraging ecology; satellite telemetry (pending); numerous publications!
- Increased regional capacity for research & conservation!



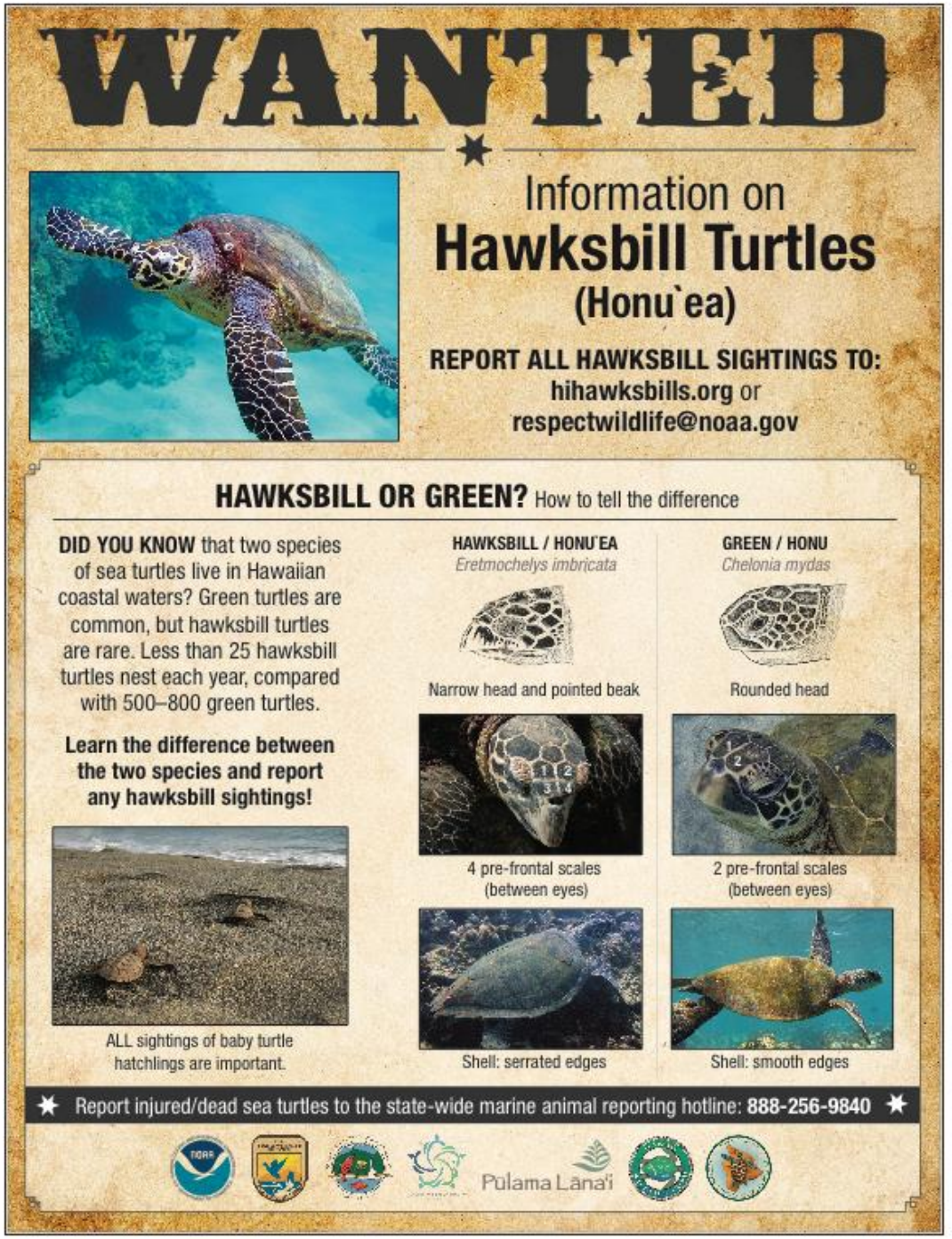

Current International Priorities

1. Assess and characterize fishery bycatch, research bycatch reduction technologies in coastal and pelagic fisheries, population assessemnts, and wildlife trafficking.
   - Southeast Asia
2. Pacific leatherback sea turtles population assessment and threat reduction (e.g., Species in the Spotlight Initiative).
   - Indonesia
   - Solomon Islands
   - Papua New Guinea
3. Asia-Pacific Marine Turtle Genetics

Citizen Science Opportunities!

The public welcomes the opportunity to participate in research.

Stranding programs and public reports of injured or dead turtles counts.



How Can YOU Help Save Sea Turtles?

Citizen Science!

#HonuCount2021

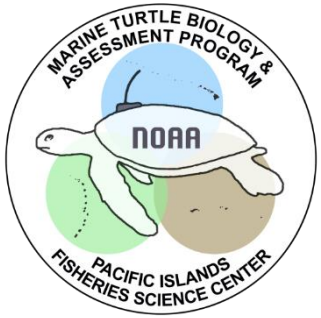
White Alphanumeric #

RespectWildlife@noaa.gov

Location/
GPS Coordinates

Thank you!!

www.halawahawksbill.com



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Publications resulting from Recent NOAA funded grants & research

- Balazs et al. (2015) A Review of the Demographic Features of Hawaiian Green Turtles
- Balazs et al. (2017) Ocean pathways and residential foraging locations for satellite tracked green turtles breeding at French Frigate Shoals
- Dennis & Balazs (2015) Increased use of non-native algae species in the diet of the green turtle in a primary pasture ecosystem in Hawaii
- Goshe et al. (2016) Validation of back-calculated body lengths and timing of growth mark deposition in Hawaiian green turtles
- Kittle et al. (2018) Effects of glyphosate herbicide on the gastrointestinal microflora of Hawaiian green turtles
- Kittinger et al. (2013) Using historical data to assess the biogeography of population recovery
- Kelly & Homcy (2017) Trapped in the Crossroads of Honu Conservation
- Van Houtan et al. (2014) Modeling Sea Turtle Maturity Age from Partial Life History Records
- Van Houtan et al. (2015) Terrestrial basking sea turtles are responding to spatio-temporal sea surface temperature patterns
- Clukey, et al. 2018. Investigation of plastic debris ingestion by sea turtles in Pacific longline fisheries.
- Araujo et al. (2016) Using minimally invasive techniques to determine green sea turtle life-history parameters
- Araujo et al. (2019) In-water methods reveal population dynamics of a green turtle foraging aggregation in the Philippines
- Araujo et al. (in press) Finding the balance: sea turtle tourism interaction in Apo Island, Philippines
- Becker et al. (2019) Densities and drivers of sea turtle populations across Pacific coral reef ecosystems
- Kolinski et al. (2014) Migrations and Conservation Implications of Post-Nesting Green Turtles from Gielop Island, Ulithi Atoll, FSM
- Martin et al. (2016) Five Decades of Marine Megafauna Surveys from Micronesia
- Martin et al. (2018) Sea Turtle Tagging in the Mariana Islands Training and Testing (MITT) Study Area
- Parker et al. (2015) Conservation considerations revealed by the movements of post-nesting green turtles from the Republic of the Marshall Islands
- Pilcher (2015) TEDs in Malaysia: Progress Steady but Surely
- Summers et al. (2017) Demography of Marine Turtles in the Nearshore Environments of the Northern Mariana Islands
- Summers et al. (2018) Endangered Green Turtles of the Northern Mariana Islands: Nesting Ecology, Poaching, and Climate Concerns
- Summers et al. (2018) Human induced trauma and directed take inhibits sea turtle recovery in the CNMI
- Álvarez-Varas et al. (in review) Integrating morphological and genetic data at different spatial scales: challenges for management and conservation.
- Papale et al. (in review) Soundscape of green turtle neritic habitats in tropical South Pacific.
- Piovano et al. (in review) Diet and recruitment of juvenile green turtles at two foraging grounds in Fiji inferred from stable isotope analysis.
- Piovano et al. (in prep) Influence of environmental factors on green turtle population dynamics in Fiji.
- Piovano et al. (2019) Mixed stock analysis of green turtles at two foraging grounds in Fiji reveals major contribution from the AmS Management Unit
- Sterling et al. (2013) Ecology and Conservation of Marine Turtles in a Central Pacific Foraging Ground (Palmyra)
- Naro-Maciel et al. (2014) Predicting connectivity of green turtles at Palmyra Atoll: a focus on mtDNA and dispersal modelling
- McFadden et al. (2014) Potential impacts of historical disturbance on green turtle health at Palmyra Atoll
- Naro-Maciel et al. (2018) Marine protected areas and migratory species: residency of green turtles at Palmyra Atoll
- White (2013) Rakahanga Atoll: Sea Turtles at a Remote Site in Oceania
- White (2014) Tongareva Atoll: The most Important Sea Turtle Habitat in the Cook Islands