

As part of developing a strategic plan to assess the effects of climate change on sea turtles we identified the **biological** and **physical** (abiotic) data that need to be collected over time.

*Datasets need to be collected at multiple beaches, latitudes, and years, at broad to fine scale, and at locations with different levels of human element (e.g., urban vs. undeveloped).

***Physical data needed (beach):**

- Air Temperature,
- Humidity,
- Sand temperature (nest depth),
- Sand Moisture (nest depth),
- Cloud cover,
- Precipitation,
- Sand type (albedo, sand sorting, sand grain size, carbonates, reflectivity/absorbance),
- Seawall and obstruction location,
- Water table levels,
- Ocean wash.

***Biological data needed (beach):**

- Nest location/preferences on the beach, elevation (before and after seawalls),
- Fitness of hatchlings (sea finding efficiency, swimming speed, physically fit, hormone levels, hydration),
- Hatching/emerging success,
- Reproductive output,
- Sex ratio (spatial and temporal variation),
- Location and causes of false crawl,
- Clutch inundation.

***Physical data needed (ocean):**

- Sea surface temperature,
- Cloud cover,
- Salinity, pH,
- Dissolved oxygen,
- Habitat quality/loss/changes,
- Nutrient input,
- Pollution/toxin levels.

***Biological data needed (ocean):**

- Population structure,
- Somatic growth,
- Sex ratio,
- DNA, stock of origin,
- Abundance,
- Stable isotope,
- Diet and changes over time,
- Physiology of foraging, Habitat use