



## Developing an approach for adaptation to climate change in the insular Caribbean - the hawksbill turtle as an indicator species

### Discussion group 3: Sex ratios, population dynamics and modelling

This discussion group could primarily focus on two major scenarios (are there more than two we should discuss?):

1. If temperatures did warm in the Caribbean and the proportion of female hatchlings increased substantially (i.e. turtles cannot buffer environmental temperature effect):
  - i. What would likely happen and how (mechanisms)?
  - ii. What do we need to confidently model this?
  - iii. Where are the data gaps? How can we fill them?
2. If temperature did warm in the Caribbean and the proportion of female hatchlings did not increase substantially (i.e. turtles can buffer environmental temperature effect):
  - i. What would likely happen and how (mechanisms)?
  - ii. What do we need to confidently model this?
  - iii. Where are the data gaps? How can we fill them?

Relevant environmental factors:

1. Sea level rise
2. Temperature
3. Precipitation
4. Extreme weather events - intensity and frequency (e.g. storms, periods of persistent rain etc.)

What do we already know?

1. Temperature – TSD
2. Depensation effects
3. Multiple mating

Possible questions for discussion:

1. Altered primary sex ratio
2. Altered mating frequency
3. Altered rates of fertilization / paternity
4. Altered total reproductive investment (sex specific?)
5. Altered genetic diversity in the population
6. Altered predator distribution / behaviour / abundance (but see group 3)
7. Altered life stage / sex specific survivorship