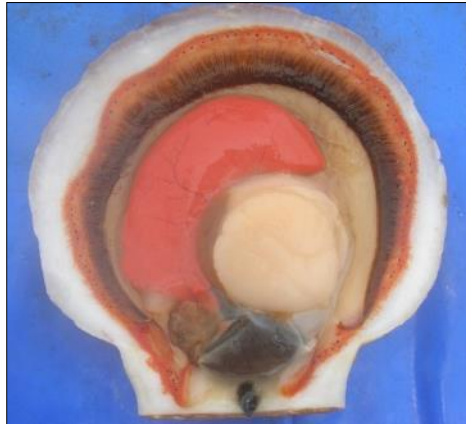


Understanding impacts of the sea scallop fishery on loggerhead sea turtles through satellite tagging

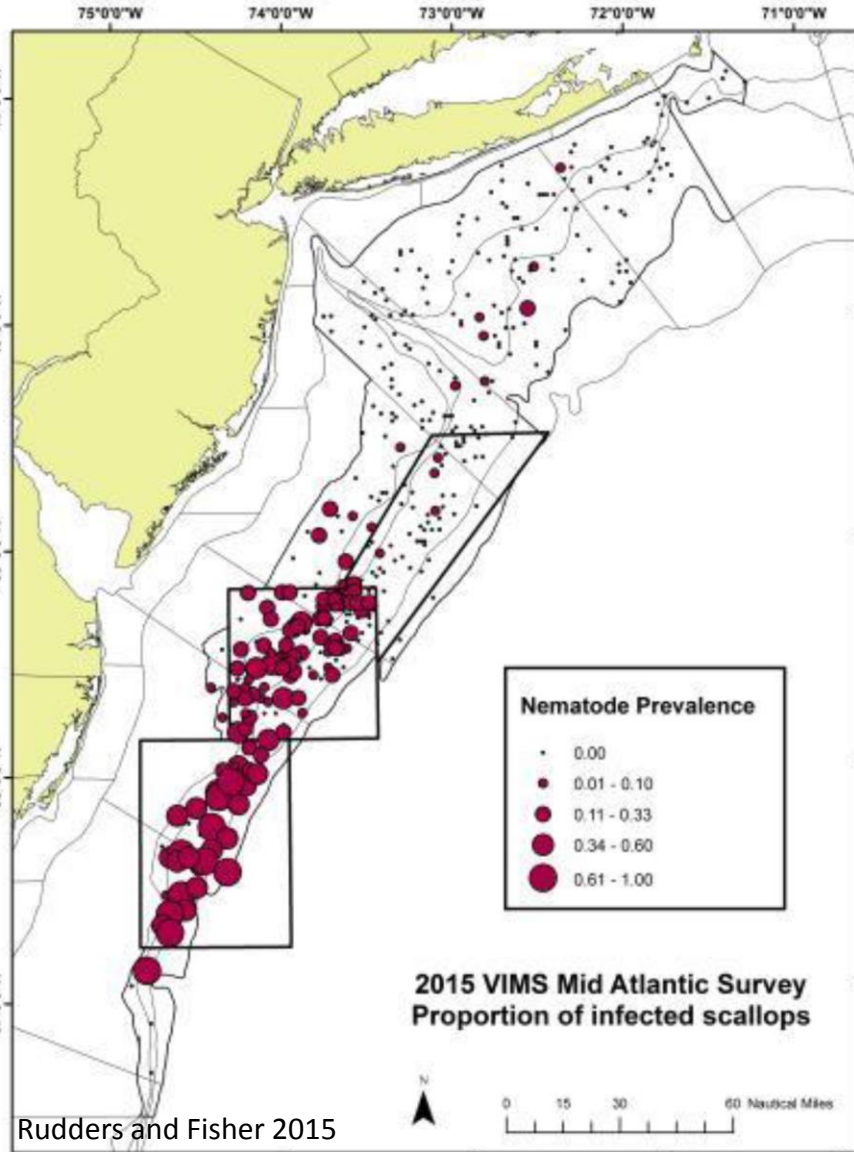
Samir Patel and Ron Smolowitz *Coonamessett Farm Foundation, Inc.*

Heather Haas, Henry Milliken and Eric Matzen *Northeast Fisheries Science Center*

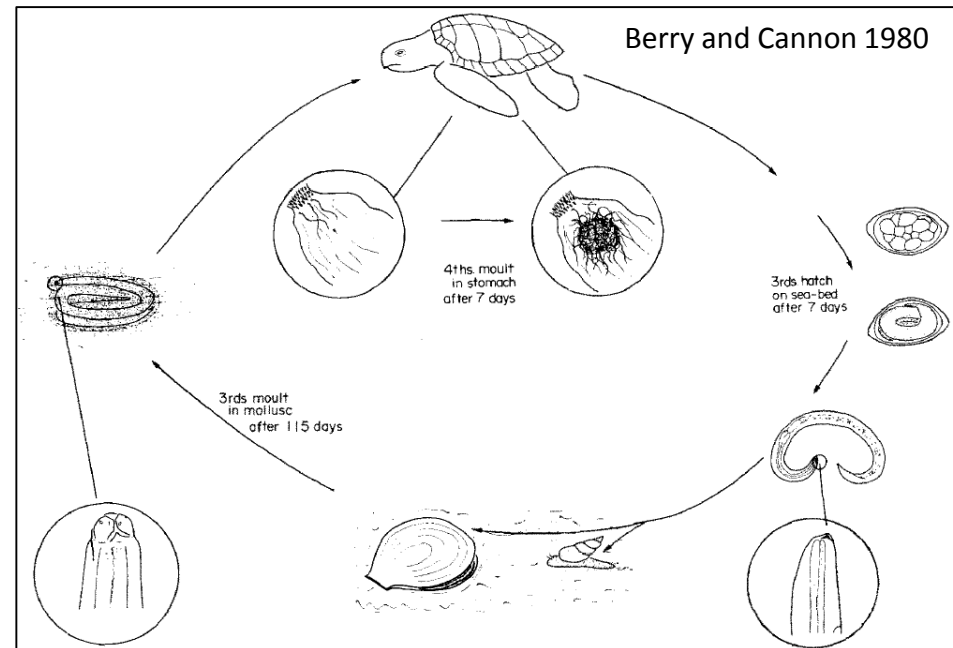
Jim Gutowski *Viking Village Fisheries*



Scallops and Turtles and Nematodes (oh my!)



Rudders and Fisher 2015



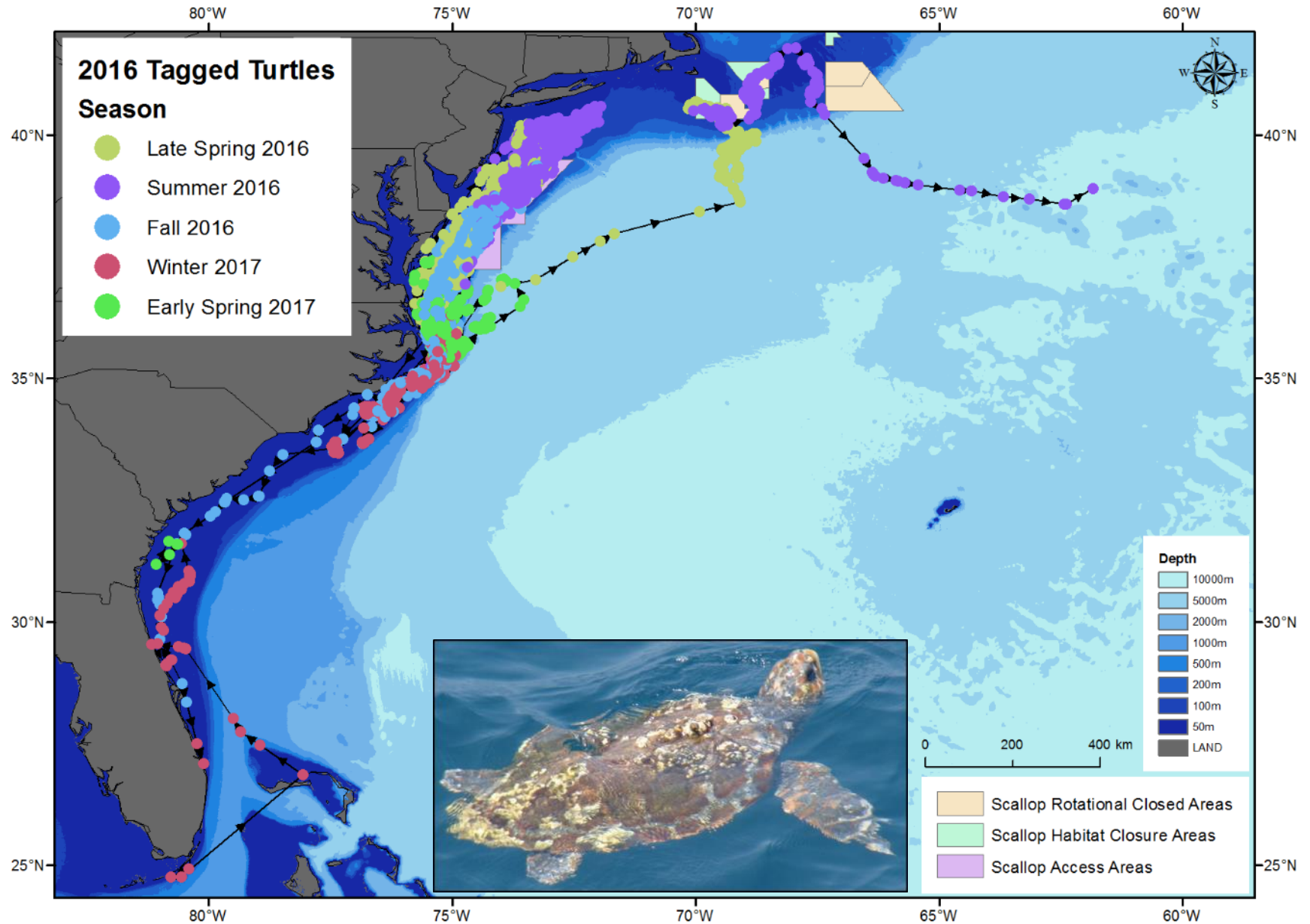
Turtles and Nematodes: Methods

To collect/analyze fecal samples and identify foraging habitats:

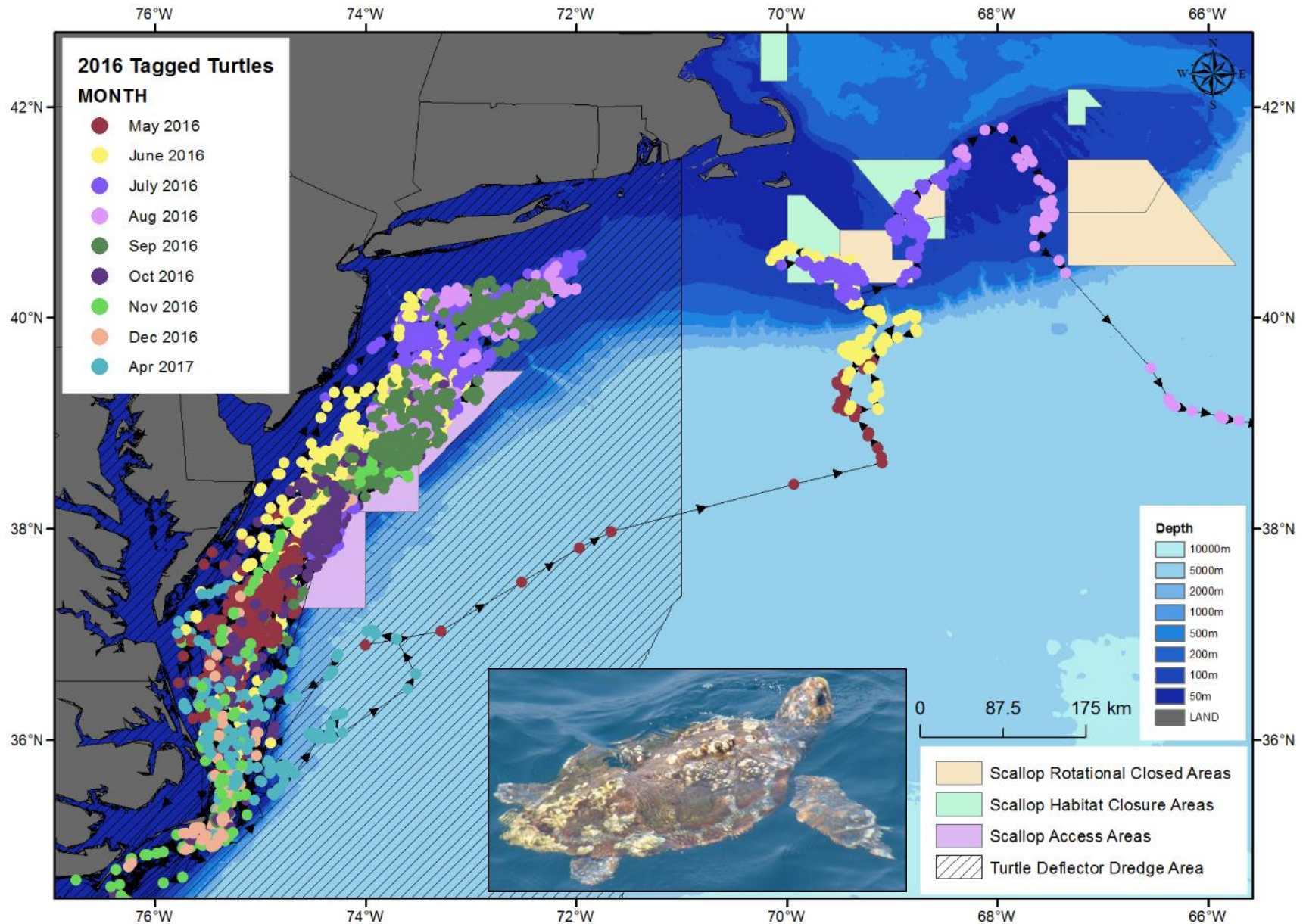
- 1) Performed cloacal lavage on turtles captured at-sea.
- 2) Deployed satellite tags on these same turtles.
- 3) Collected gut contents/fecal samples from turtles stranded on Cape Cod through collaboration with MA Audubon Society.
- 4) All fecal/gut analysis was performed at Roger Williams University through collaboration with Roxanne Smolowitz.



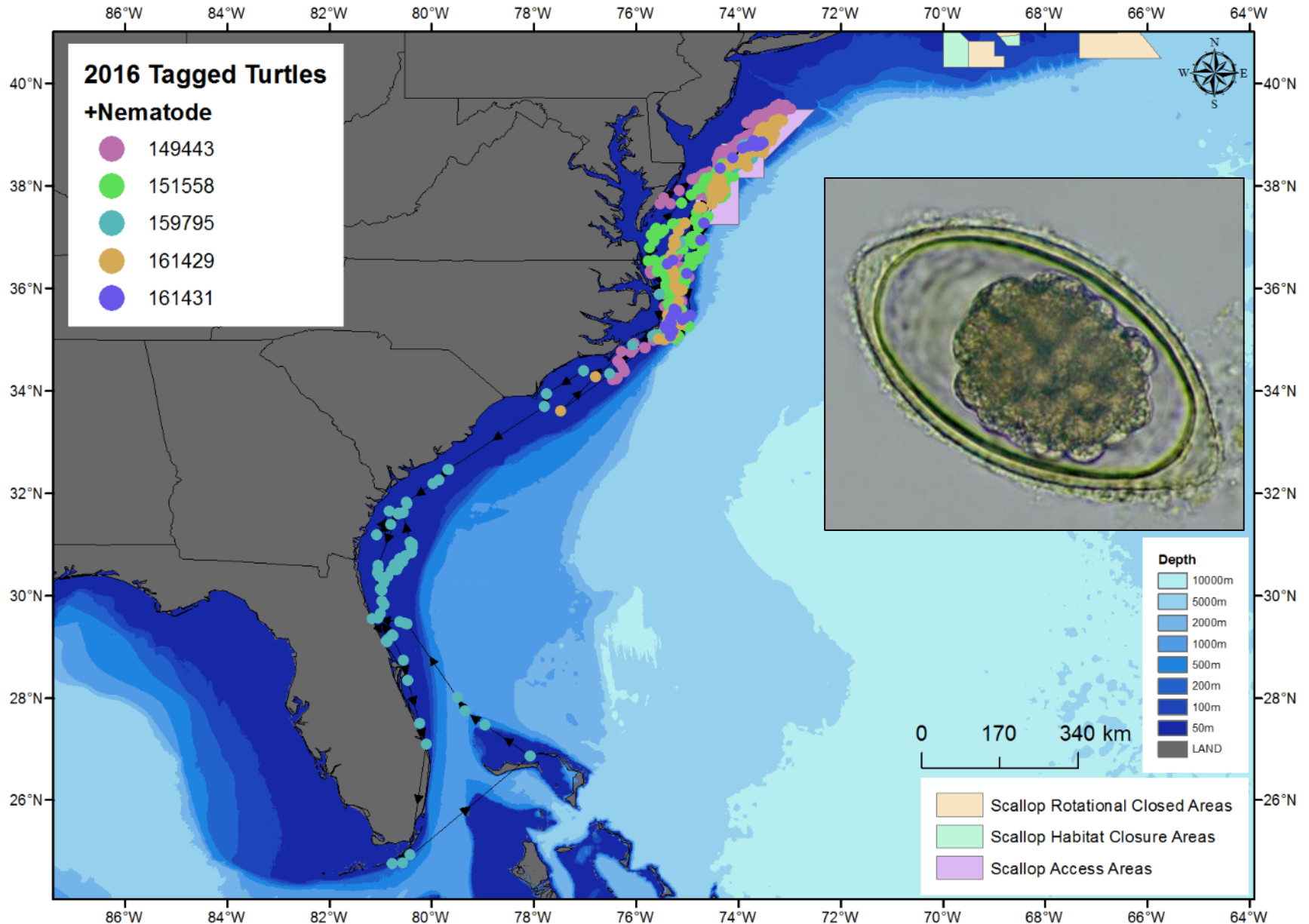
Turtle Seasonal Movements



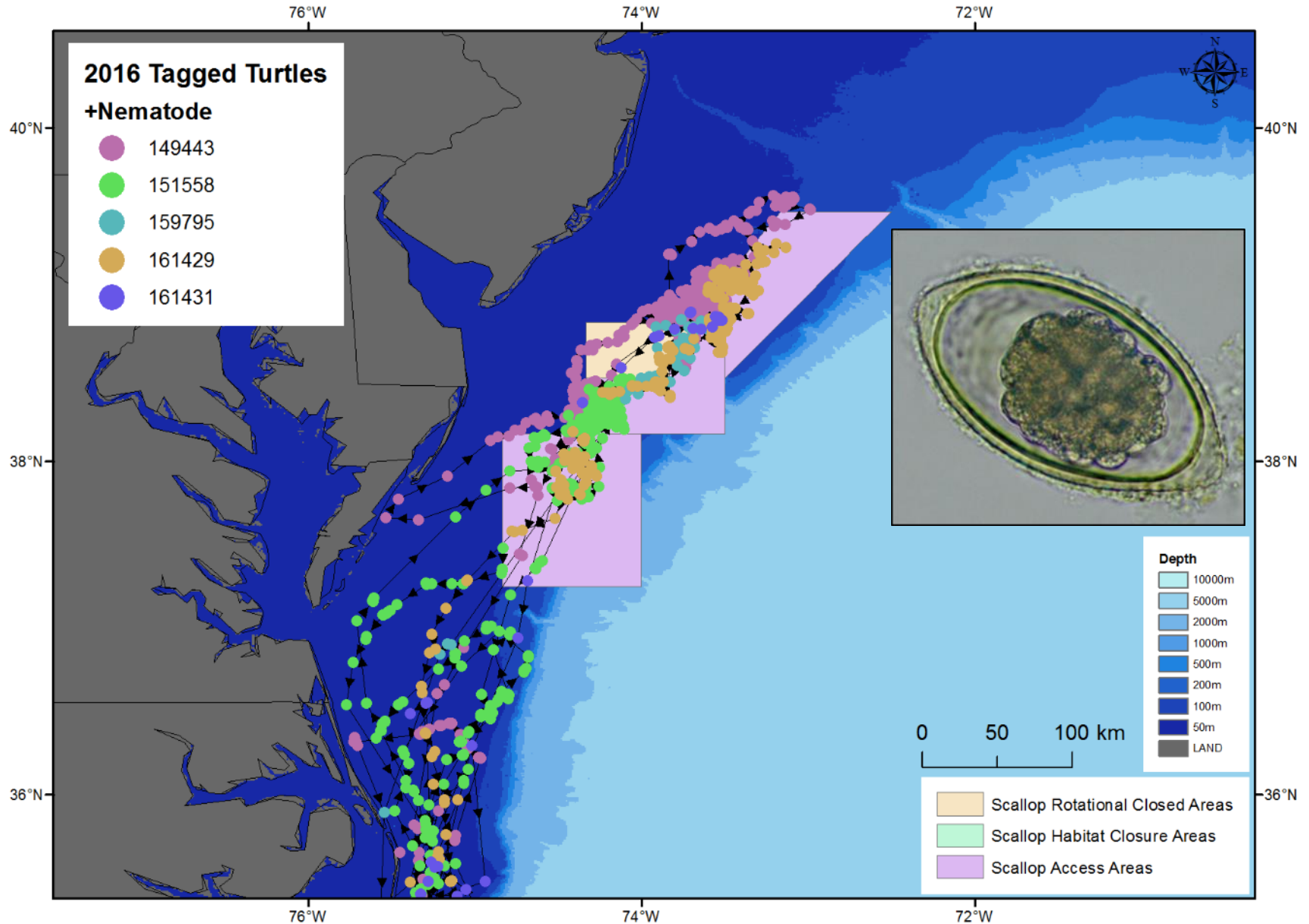
Turtle Monthly Movements



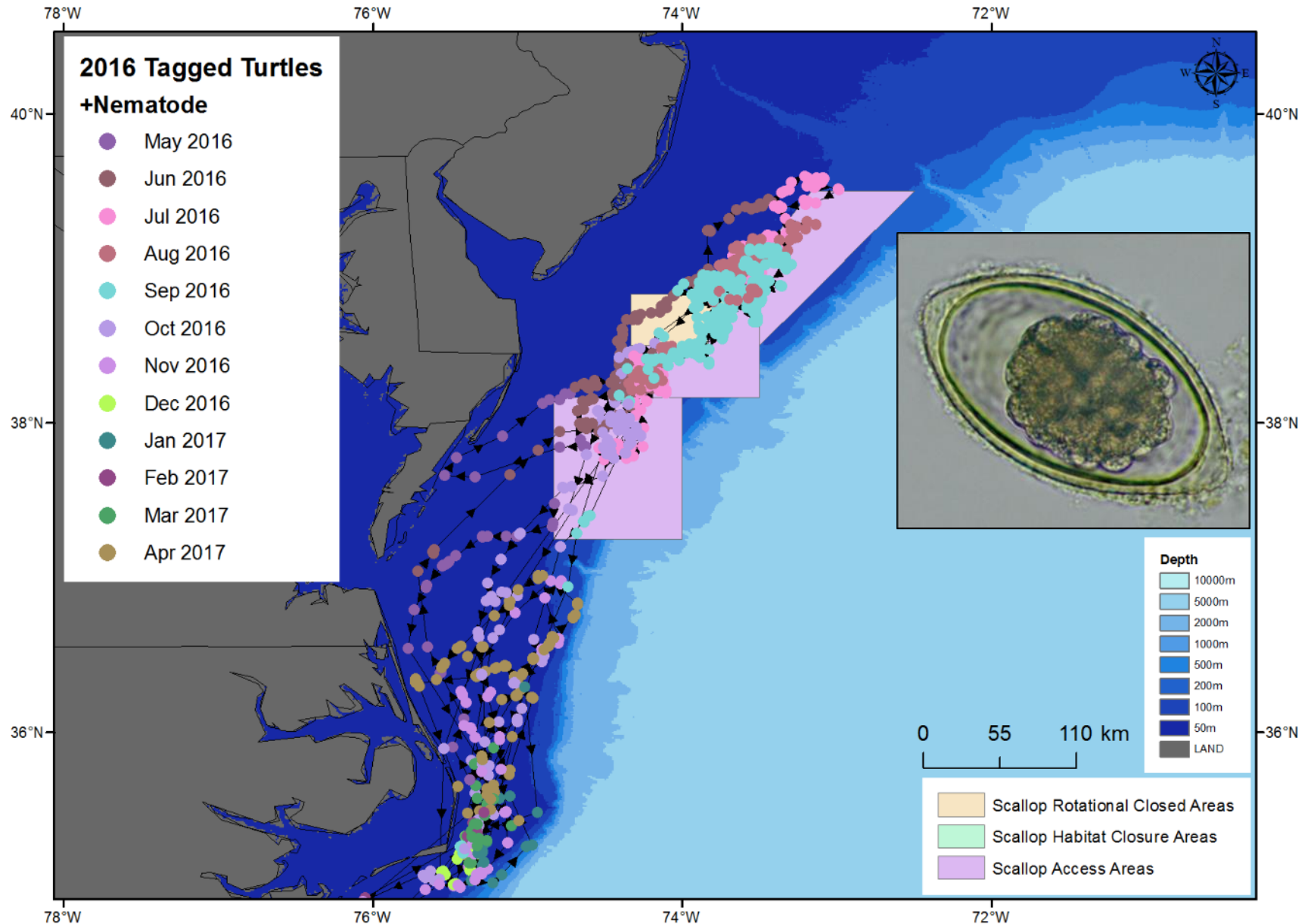
Turtles with Nematodes



Turtles with Nematodes



Turtles with Nematodes



Conclusions (so far)

- **We found 6 turtles positive for nematode eggs** out of 22 tagged at-sea in 2016.
- **Turtles without eggs were very slightly larger:** 79.5 vs 78.2 cm average curved carapace length.
- **Turtles without eggs foraged in areas further north** than those with eggs; however all turtles overlapped scallop access areas.
- **2 positive samples from 38 stranded turtles** and one was from a Kemp's Ridley turtle (loggerheads: n=18; Kemp's: n=11; greens: n=9).
- **We plan to continue sampling from turtles in MAB, GB and strandings.**



Future Hypotheses to be Tested

- 1. Is the prevalence of nematodes in turtles increasing?** With the increased occurrence of infected scallops, will this result in a higher prevalence in turtles, thus perpetuating the spread of the worm?
- 2. Is there a seasonal shift in prevalence?** Preliminary sampling indicates: 20% of turtles tagged in May were positive, while 43% tagged in Aug.
- 3. Is there a limited geographic distribution for turtles with nematodes?** Currently, turtles with nematodes stayed further south within the MAB.
- 4. What is the foraging behavior of turtles in northern habitats?** Turtles are present in Georges Bank but their foraging behavior may differ to those in the MAB, is this resulting in low bycatch and worm presence?
- 5. Are other turtle species carriers of this nematode?** Working with the stranded turtles, we identified a Kemp's having nematode eggs. Need funding to study live turtles of other species in the region.