

Piping Plovers, Polychaetes, and Poop: Learning a shorebird's diet and habitat preferences



© Sidney Maddock

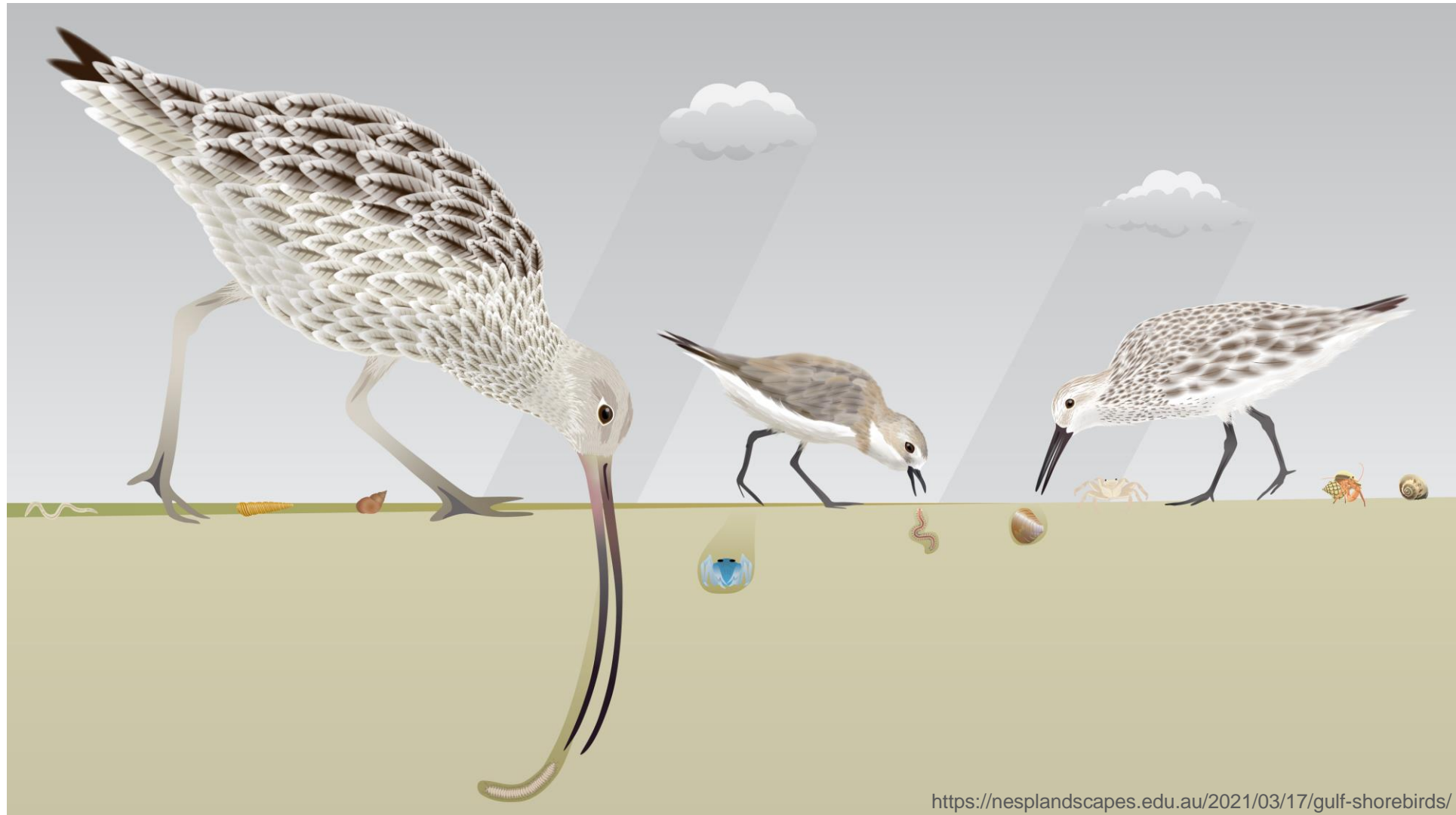
Melissa Chaplin¹, Andrew Tweel², and Janet Thibault²

¹U.S. Fish and Wildlife Service South Carolina Ecological Services Field Office

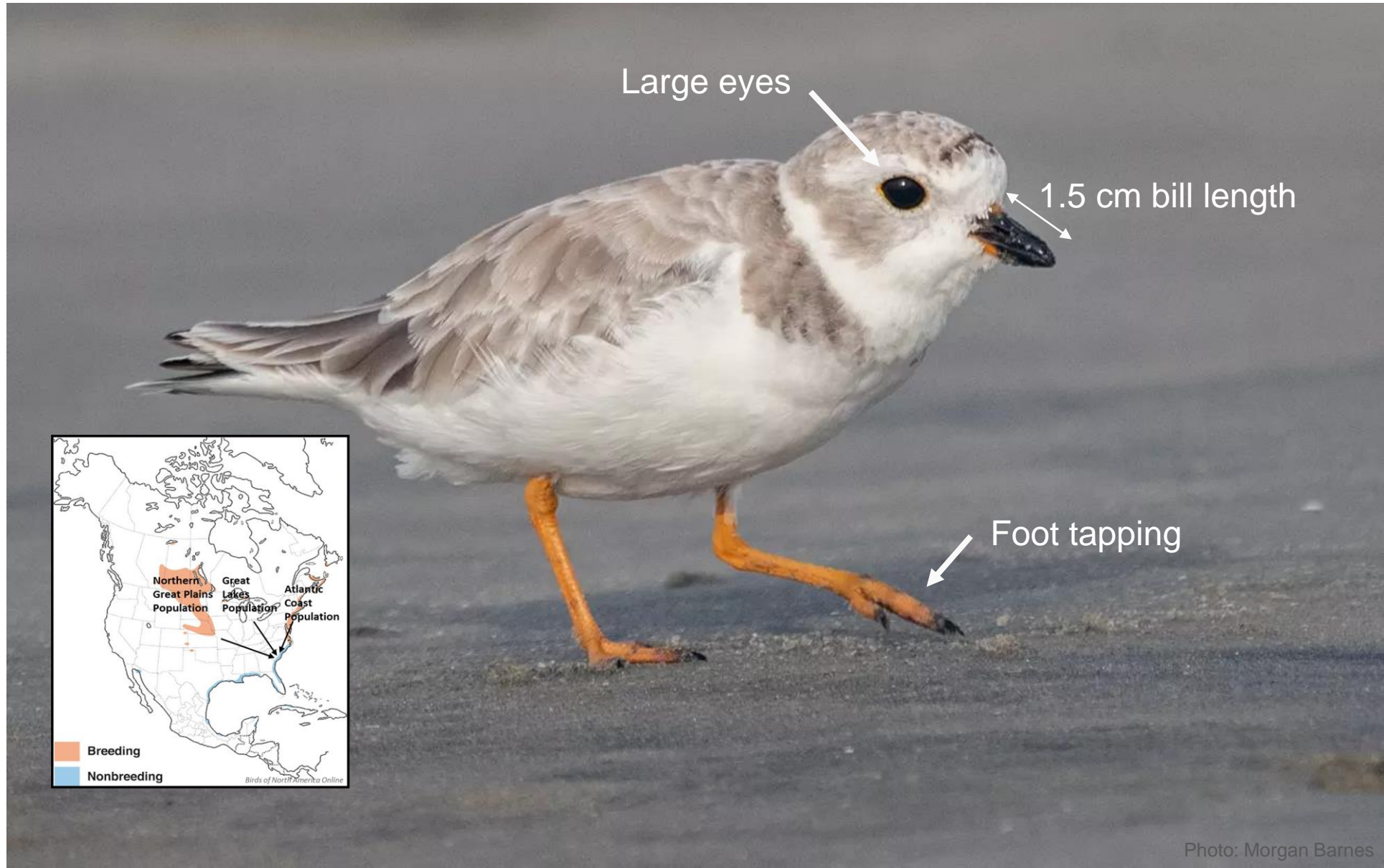
²South Carolina Department of Natural Resources Marine Resources Research Institute



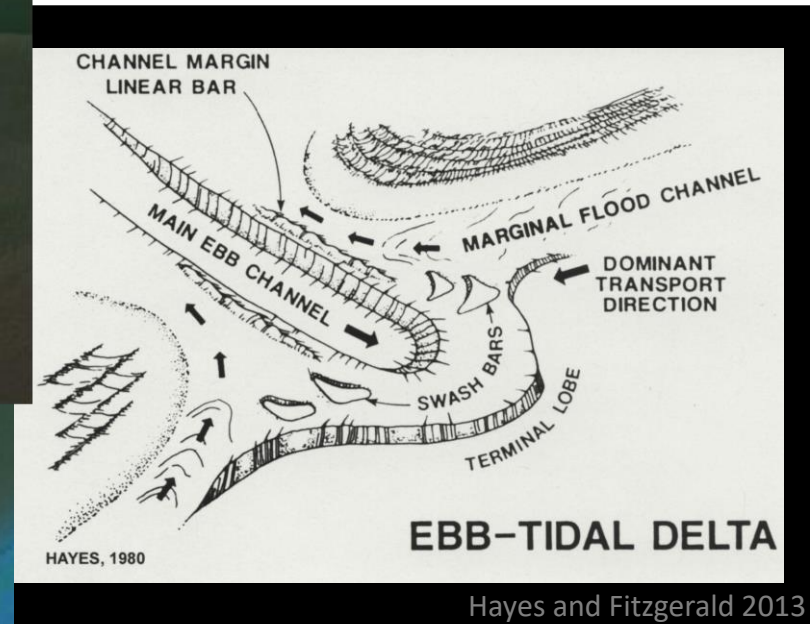
Foraging Strategy: Probers vs. Gleaners

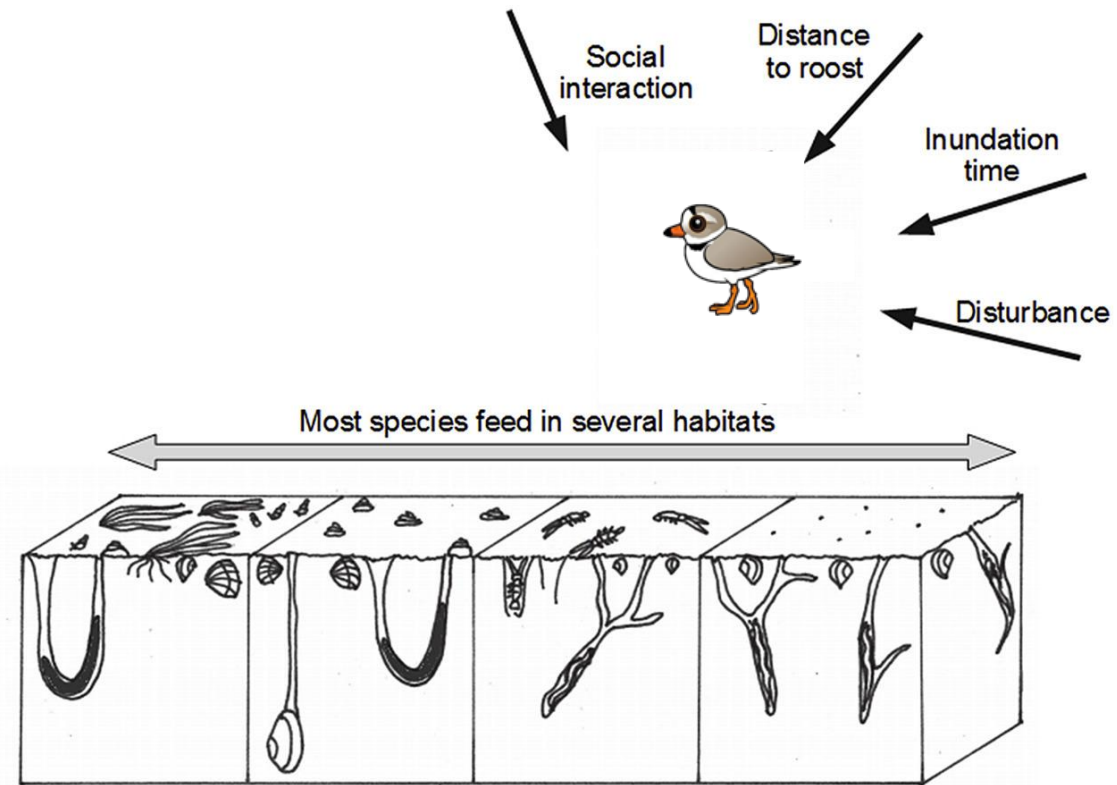


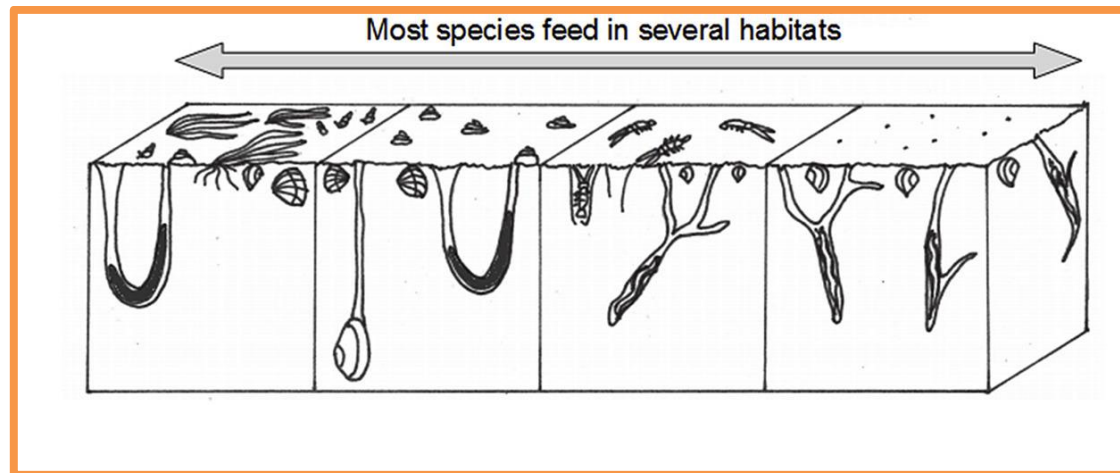
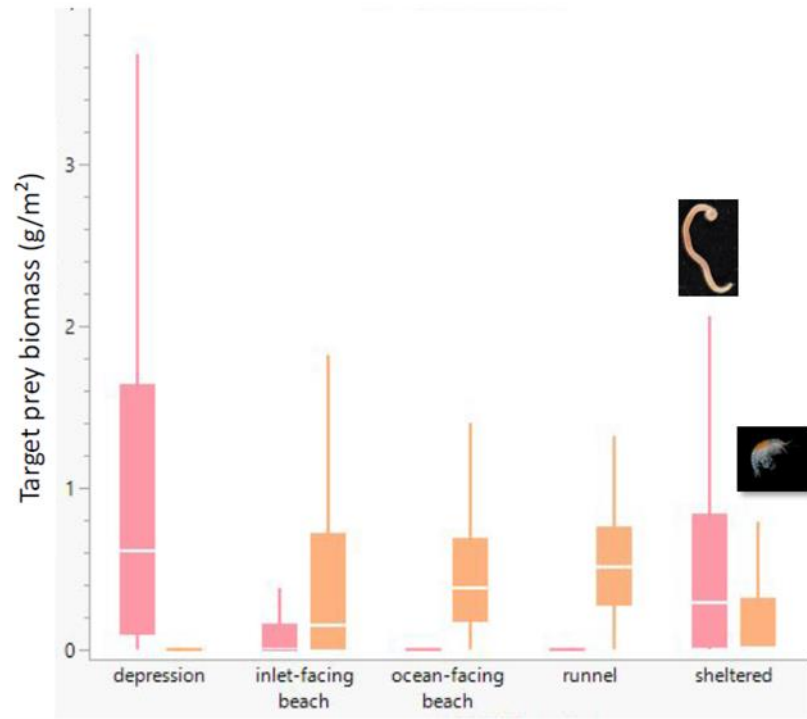
Piping Plovers Are Gleaners



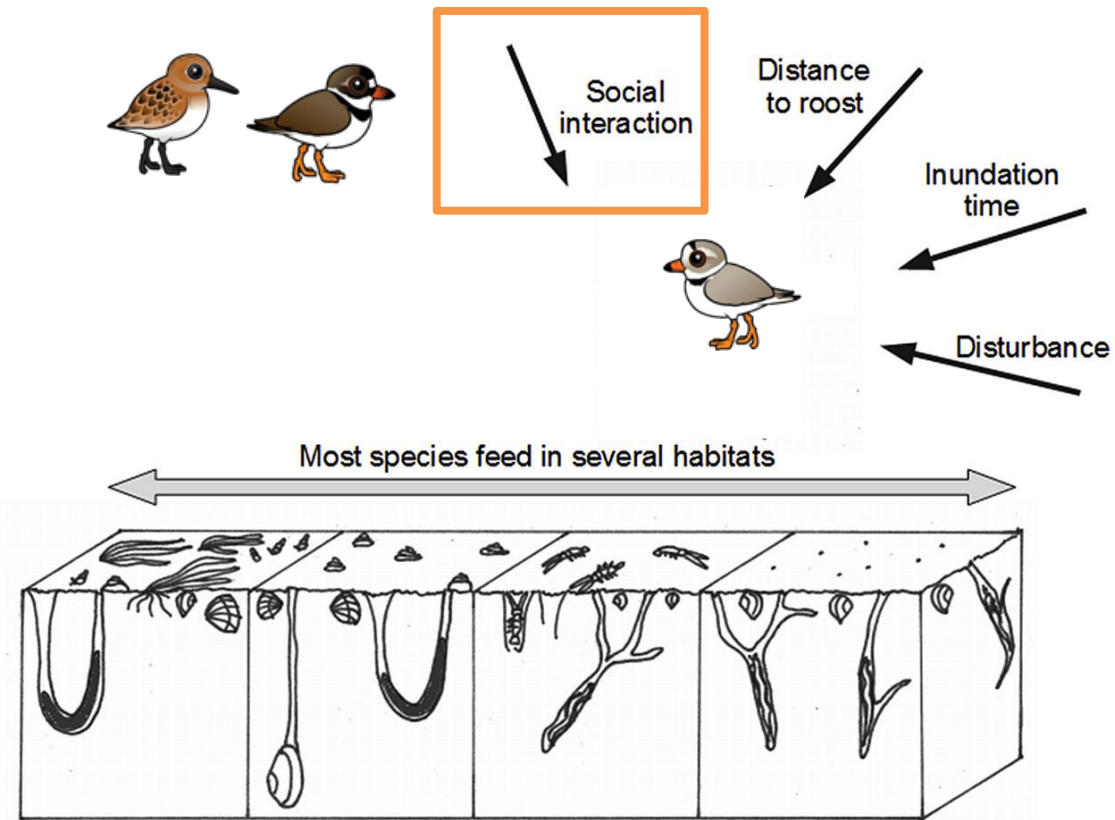
The Importance of Inlet Complexes

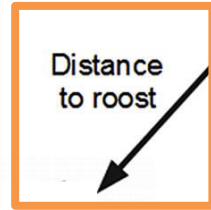
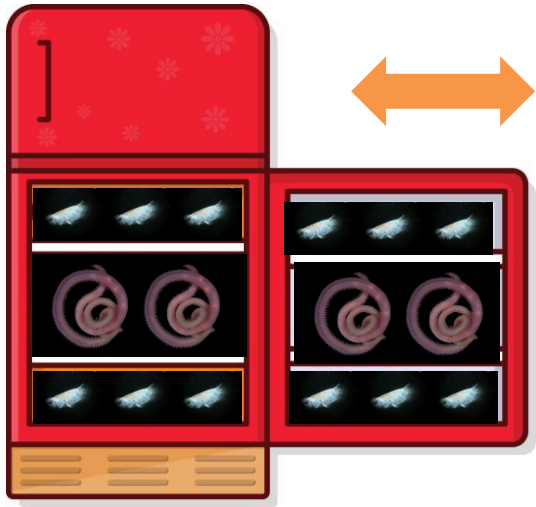






Inlet complexes create a mosaic of habitats

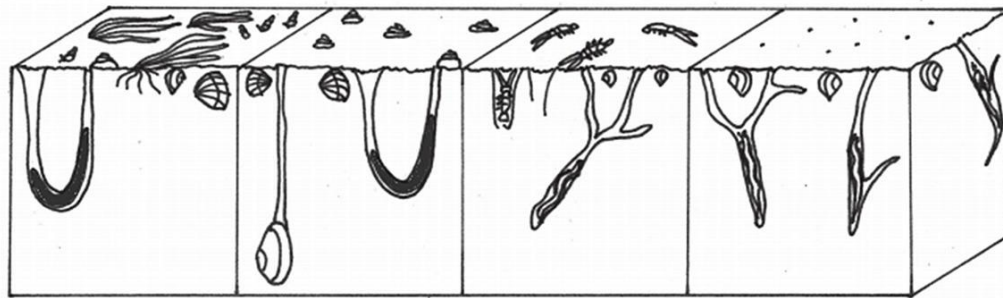


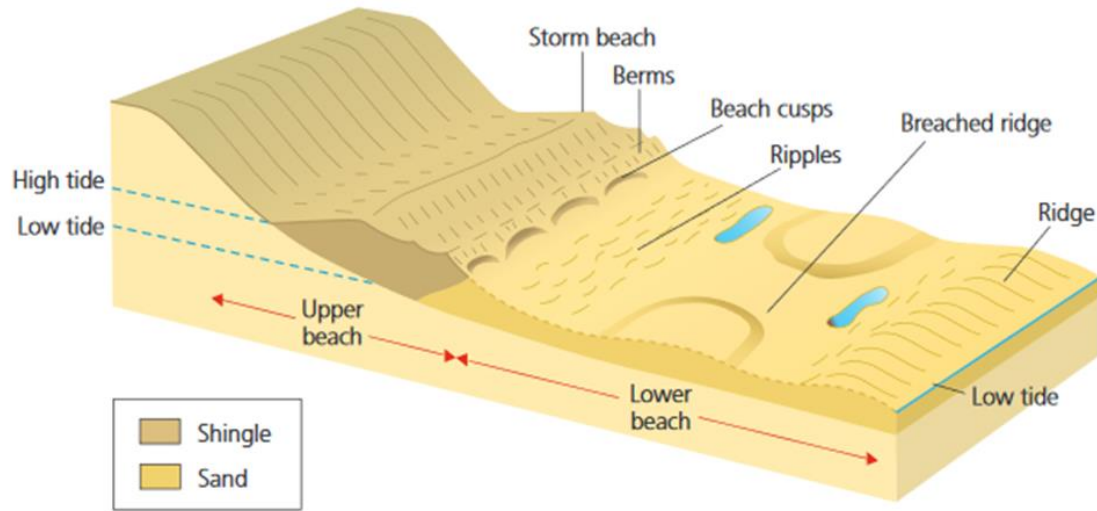


Inundation time

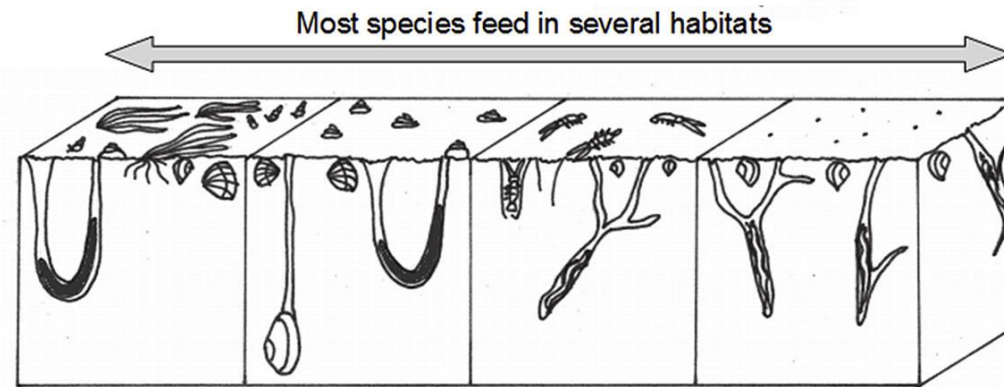
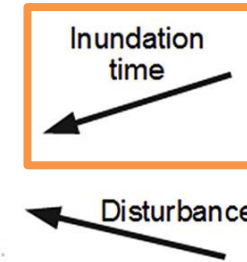
Disturbance

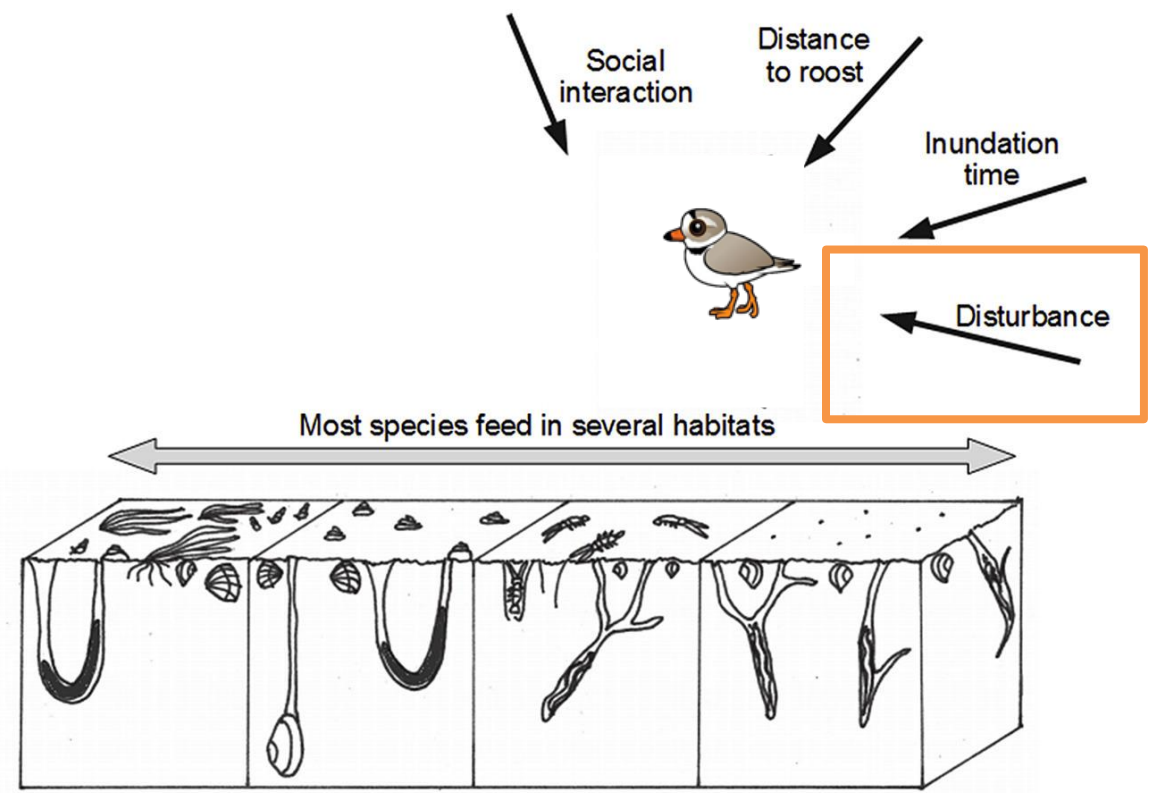
Most species feed in several habitats





<https://geography-revision.co.uk/a-level/physical/coastal-landscape-development/>





Definition of Disturbance

“Human disturbance of shorebirds is a human activity that causes an individual or group of shorebirds to alter their normal behavior, leading to an additional energy expenditure by the birds. It disrupts or prevents shorebirds from effectively using important habitats and from conducting the activities of their annual cycle that would occur in the absence of humans. Productivity and survival rates may also be reduced.”

Site Fidelity In Shorebirds

SC BEACHES EXIT

LODGING	FOOD
	    



Disturbance Lowers Habitat Quality

SC BEACHES EXIT

LODGING



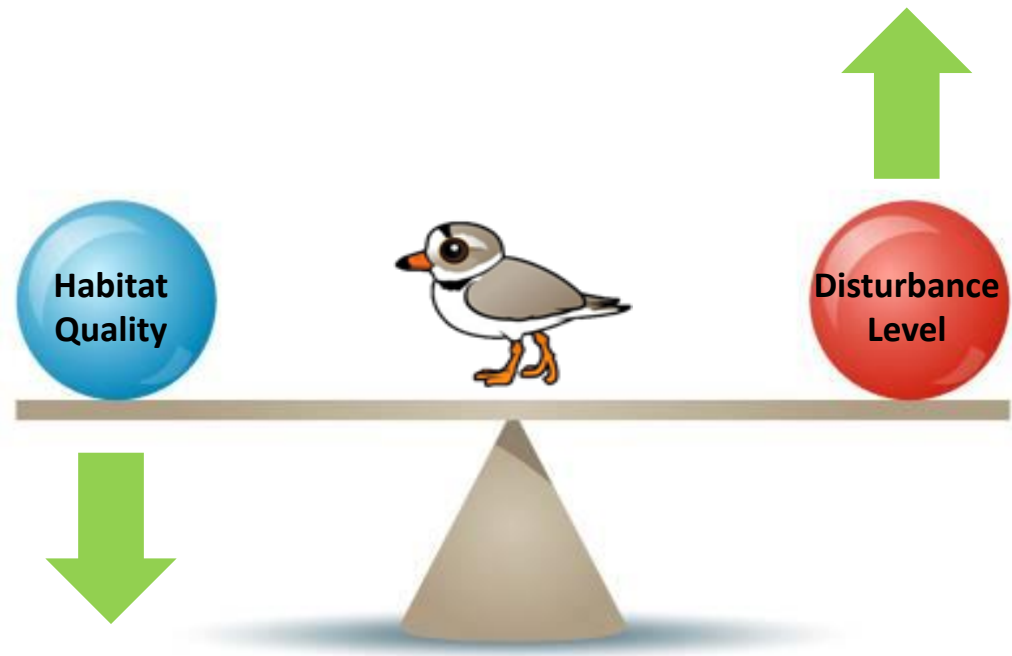
FOOD



CLOSED



© Birdorable



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Linking Disturbance To Survival

Impacts of anthropogenic disturbance on body condition, survival, and site fidelity of nonbreeding Piping Plovers

Authors: Daniel Gibson, Melissa K. Chaplin, Kelsi L. Hunt, Meryl J. Friedrich, Chelsea E. Weithman, et. al.

Source: The Condor, 120(3) : 566-580

Published By: American Ornithological Society

URL: <https://doi.org/10.1650/CONDOR-17-148.1>



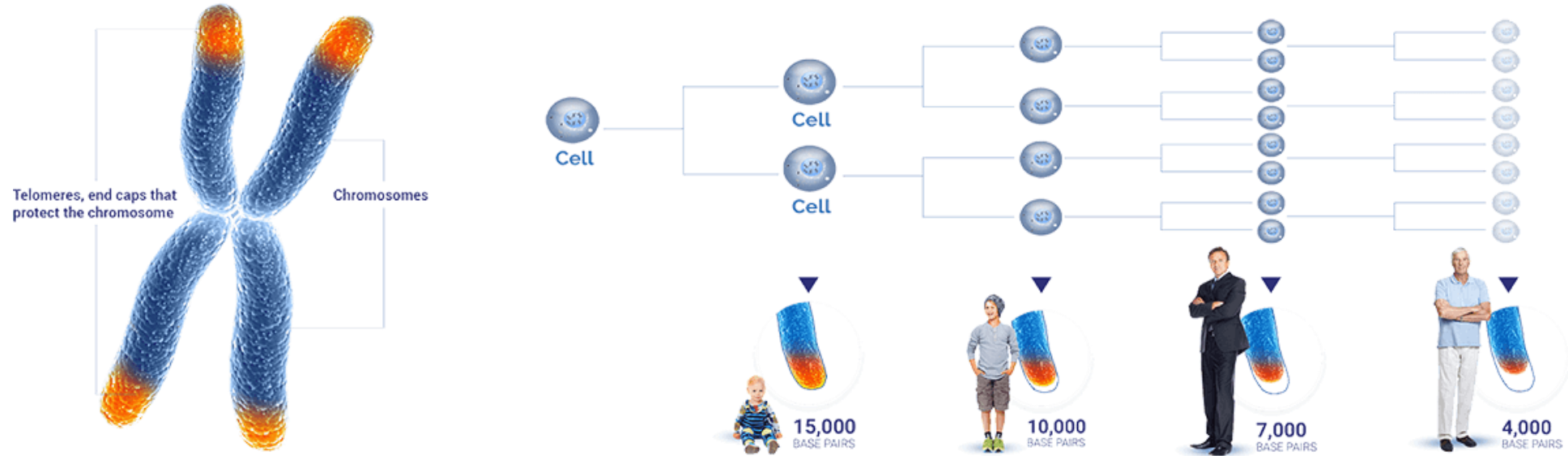
PIPLs Are More Likely To Die Than Move

From Gibson *et al.* 2018:

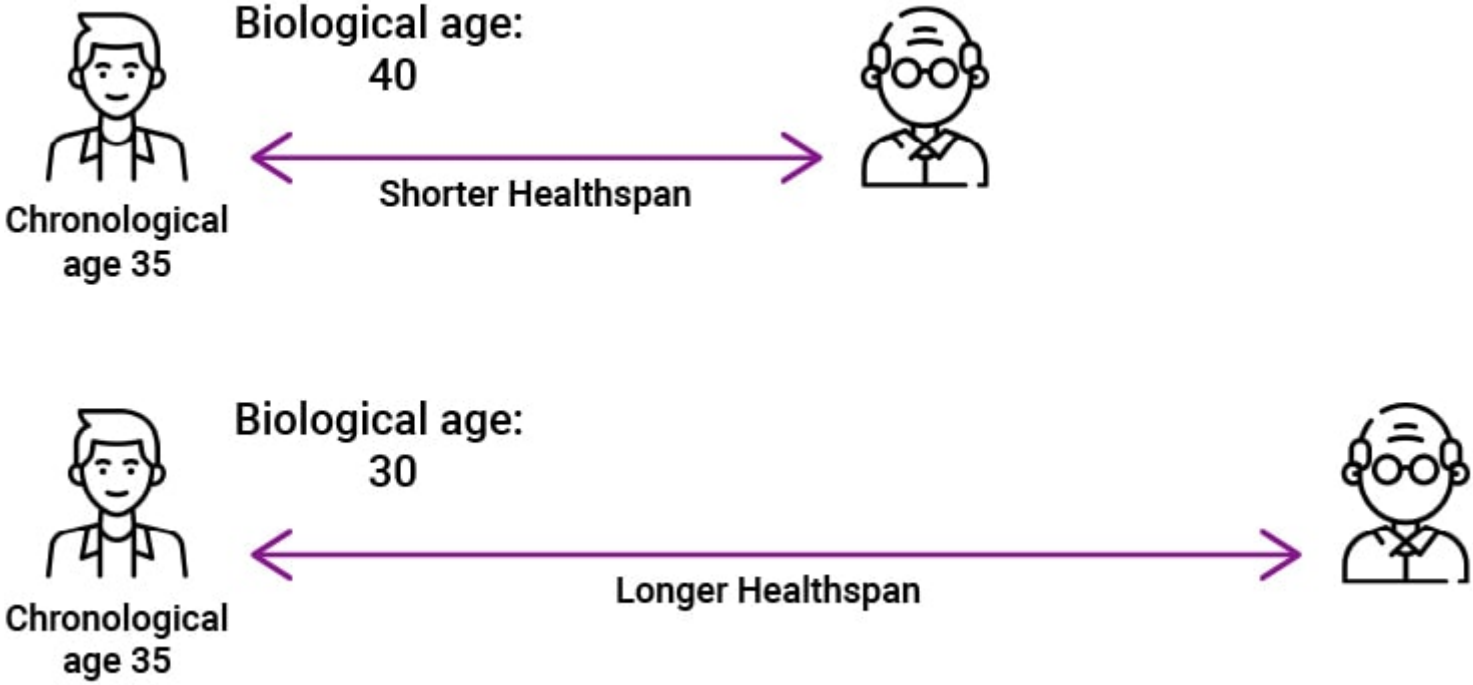
“...individuals associated with disturbed habitats were more likely to leave the population through mortality than by emigration.”



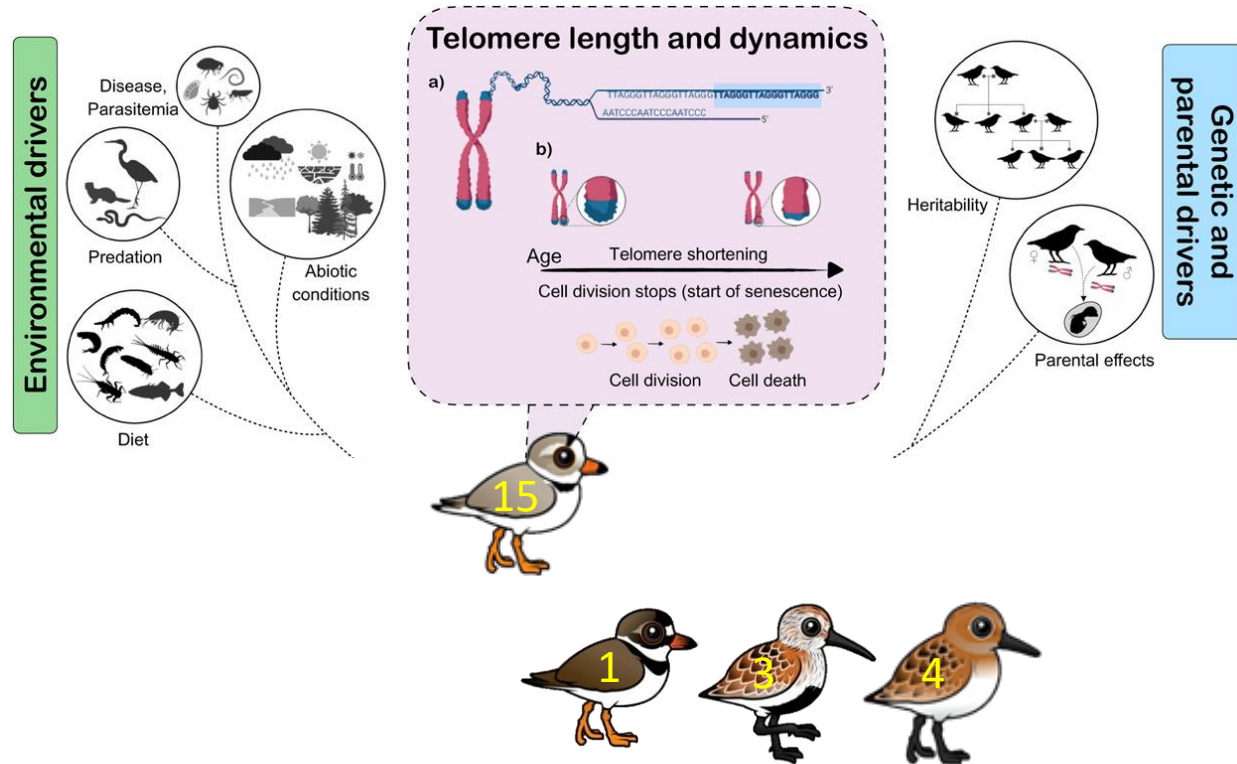
What We Lose With Age



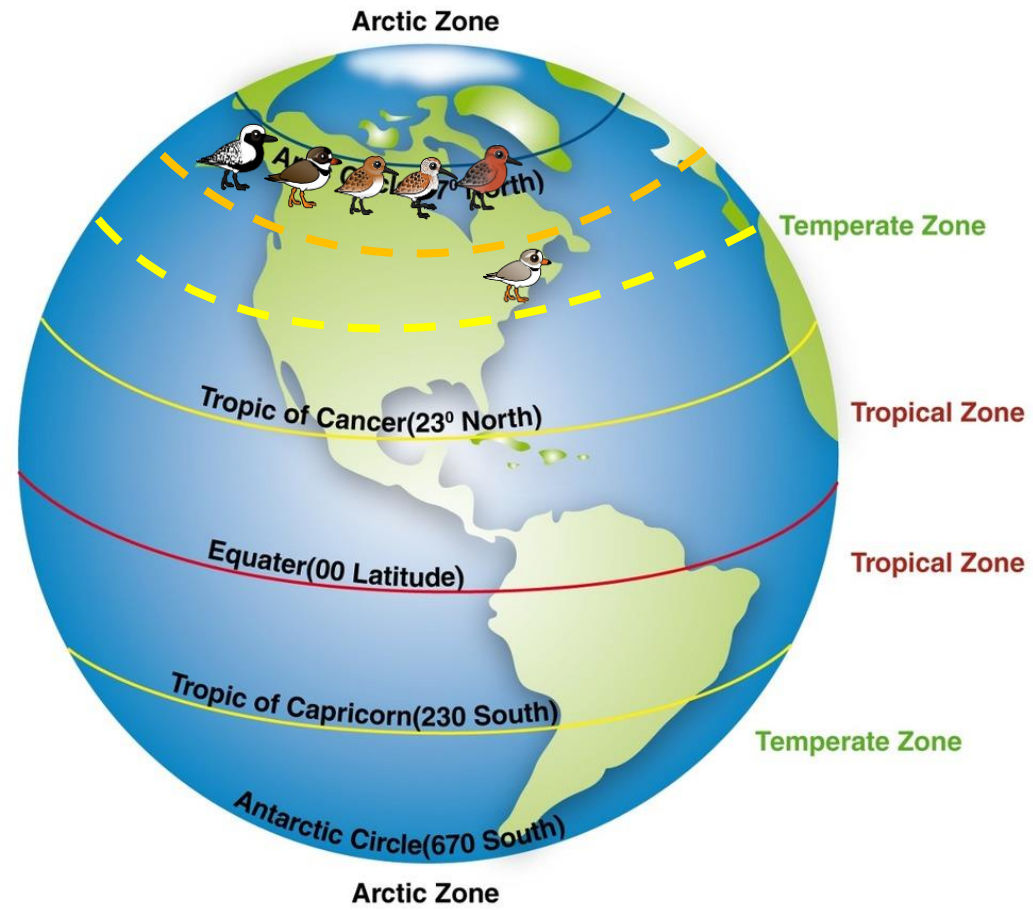
Biological Age vs. Chronological Age




Physiological Effects of Disturbance




Is oxidative stress influencing body condition and lifespan?





In Progress

Red Knot Diet



TEAM RUFA







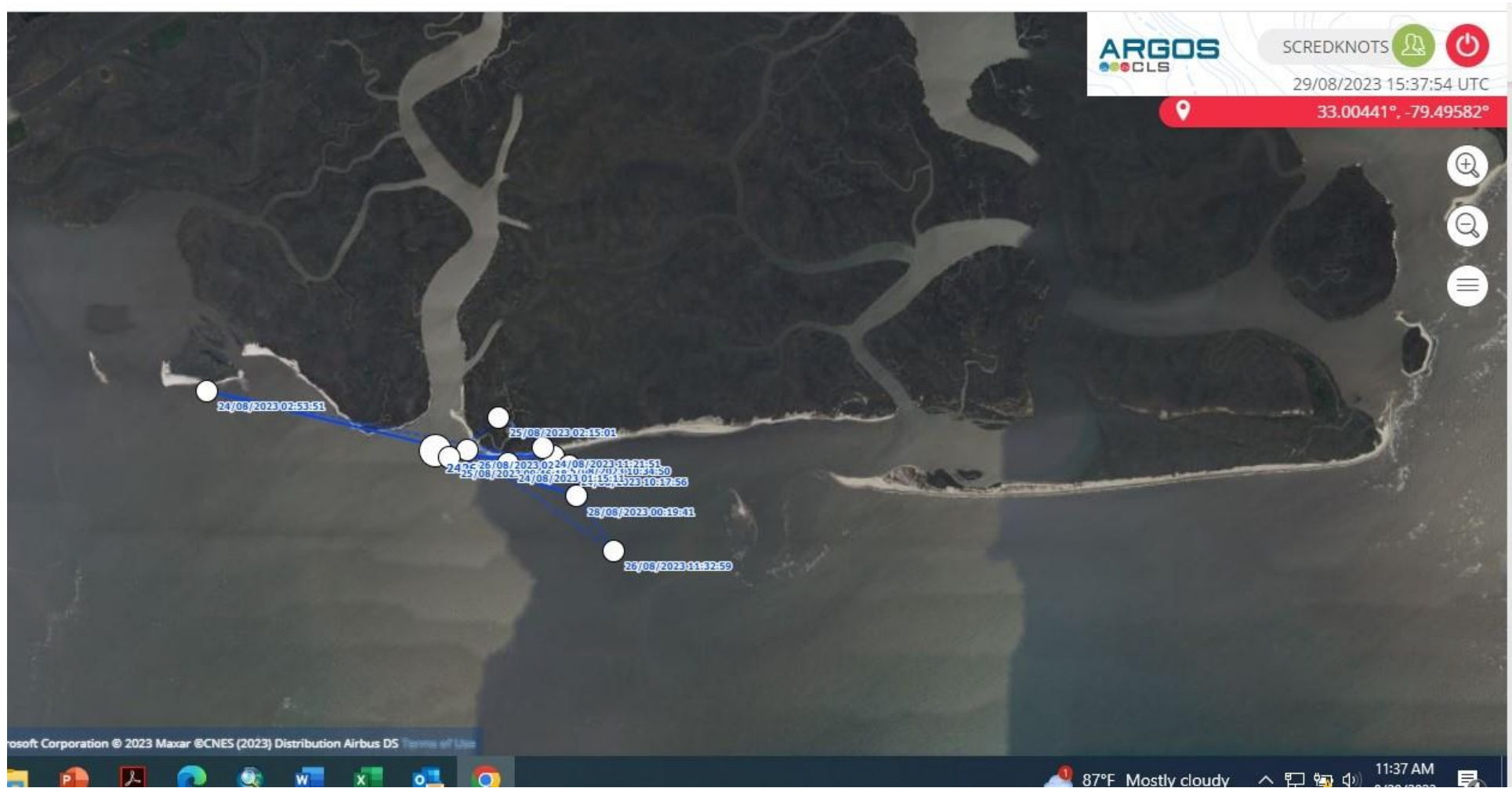
Photo: Melissa Chaplin



Photo: Felicia Sanders



Photo: Melissa Chaplin



Courtesy of Felicia Sanders of SCDNR

Questions?



Special thanks to: Dan Catlin, Dan Gibson, Kelsi Hunt, Meryl Friedrich, Chelsea Weithman, Lindsay Addison, Vince Cavaleri, Scott Coleman, Francie Cuthbert, Jim Fraser, Walker Golder, Doug Hoffman, Sarah Karpanty, Alice Van Zoren, Janet Thibault, Mary Catherine Martin, Sally Krebs, Jayme Lopko, Aaron Given, Mark Andrews, Peggy Lucas, Fran and Dennis Nolan, Joe Cowan, Catharine Parker, Norm Shea, Sarah Liss, Gabi Tutelo, Gary Sundin, Graham Wagner, Greg Rothman, Larry Bowman, Matt Walker, Cameron Doll, Katherine Silliman, Denise Sanger, Blaik Keppler, Abi Prochaska, Tanya Darden, Nolan Schillerstrom, Allyssa Zebrowski, Anne Hecht, and Tom McCoy.