Population genetic structure of the Flightless Cormorant (*Phalacrocorax harrisi*)

Caroline Duffie

My research deals with how environmental forces influence the genetic structure of populations, and in turn, how this interaction influences population health and stability over time. Currently, I am using a molecular approach to investigate the population genetic structure of the flightless cormorant (*Phalacrocorax harrisi*), a rare seabird endemic to the Galapagos Islands, Ecuador. I hope to continue working on aspects of genetics in populations of wild birds in the future.

The population of flightless cormorants is small (roughly 900 breeding pairs) and is subdivided into geographically discrete breeding colonies, which are clustered along areas of suitable coastline on two islands in the Galapagos archipelago. Previous studies have attempted to infer the distribution of genetic variation among colonies based on observations of movement of individuals. With the help of the **Goldie Millstone Scholarship** and the **Jorie Butler Kent Scholarship** from the **Whitney R. Harris World Ecology Center**, I used microsatellite markers to genotype 221 individual cormorants from across its range. These data show that genetic structure between colonies increases with geographic distance, suggesting that gene flow is restricted due to low long-distance dispersal rates. Furthermore, this study shows that overall genetic variability is low due to population effects (*e.g.* restricted gene flow, genetic drift), and likely also to historical events (genetic bottlenecks).

Flightless Cormorant (*Phalacrocorax harrisi*). Punta Espinosa Sur, Fernandina Island. Caroline Duffie 2005

Las Islas Marielas, centered in front of Isabela Island. Caroline Duffie, 2005.