1530 Biogeographic patterns on Kimberley islands, Western Australia; Leslie Gibson

The near-pristine islands along the Kimberley coast of north-western Australia are important natural refuges. Between 2007 and 2010, 24 of the largest of these islands were surveyed for mammals, reptiles, birds, frogs, land snails and vascular plants. I examined congruence in the biogeographic patterns among these taxonomic groups and related those to island-wide attributes. A high level of congruence in both spatial patterns of species richness and community similarity across most of the taxonomic groups was found. Congruence in species richness was best explained by a strong relationship with island area; while congruence in community similarity was influenced by the dispersal ability of taxa. Average annual rainfall and ruggedness were also strong correlates of both spatial patterns in community similarity and richness of regional endemics. I also show tha t this pattern was not explained by richness differences of species among islands alone, but largely due to species replacement between islands. These patterns reflect the greater diversity of regional endemic species and/or habitat specialists that are restricted to the relatively high rainfall and extensively rocky islands; whereas the drier islands typically support widespread generalists that have distributions that extend into the semi-arid and arid zones.

1550 Identifying Marine Protected Areas for seabird conservation in the Timor Sea; Jennifer L. Lavers, Mark G. R. Miller, Michael Carter, George Swann, and Rohan H. Clarke

Australia has adopted a national system of representative marine protected areas (MPAs). However, some important and unique features have been excluded, such as seabird islands which also serve as key marine mammal haul-out sites. Understanding spatial and temporal variability in the distribution of seabirds is fundamental to the conservation and management of marine ecosystems and designation of MPAs. We used ship transect data collected during October 2000 to April 2013 and oceanographic variables (sea surface temperature, chlorophyll a concentration, and bathymetry) to predict the occurrence of 18 seabird species in the Browse Basin and evaluate the performance of a range of predictive models. An ensemble model that combined results from the four other modeling techniques was robust and confirmed the existence of