The ability to disperse over long distances can result in a high propensity for colonizing new geographic regions and lead to lineage diversification through allopatric speciation and divergence-with-gene-flow. Here, we use the combination of DNA sequences and coalescent methods to examine gene flow and phylogenetic relationships within the cosmopolitan blue-winged duck lineage (genus *Anas*). Within the blue-winged ducks we identified two monophyletic sub-lineages, the globally-distributed shovelers and the New World blue-winged/cinnamon teal. Despite prominent population structure within the shoveler sub-lineage, we found evidence of gene flow from the migratory Holarctic northern shoveler (*A. clypeata*) and the more sedentary African Cape shoveler (*A. smithii*) into the Australasian shoveler (*A. rhynchotis*), supporting a model of divergence-with-gene-flow. Additionally, we detected significant non-zero estimates of gene flow within the blue-winged/cinnamon teal sub-lineage including bi-directional gene flow between *A. c. cyanoptera* and *A. c. orinomus*, and bi-directional gene flow between *A. discors* and *A. c. septentrionalium*. Alternatively, all other species where migration estimates did not diverge from zero are thought to be evolving under allopatric conditions. Given the diverse mechanisms of speciation within this complex, the shovelers and blue-winged/cinnamon teal can serve as an effective model system for examining how the genome diverges under different evolutionary processes and how genetic variation is partitioned among highly dispersive taxa.

References

1. Nelson, Joel T., Wilson, Robert E., McCracken, Kevin G., Cumming, Graeme S., Joseph, Leo, Guay, Patrick-Jean, and Peters, Jeffery L. “Divergence and gene flow within a cosmopolitan lineage of dabbling ducks.” *Journal of Avian Biology* (accepted article).
2. Johnson, Kevin P., and Michael D. Sorenson. "Phylogeny and biogeography of dabbling ducks (genus: Anas): a comparison of molecular and morphological evidence." *The Auk* (1999): 792-805.
3. Wilson, Robert E., et al. "Speciation, subspecies divergence, and paraphyly in the Cinnamon Teal and Blue-winged Teal." *The Condor* 113.4 (2011): 747-761.