

## Revising the phylogeny of *Gavia* with second-generation sequencing data

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The evolutionary history of the extant five species of loons (*Gavia* spp.) has not been a contentious issue for evolutionary biologists or ornithologists. However, the species-status of the pacific loon (*G. pacifica*) has fluctuated – especially in North America – over the past century, at times being considered a sub-species of the arctic loon (*G. arctica pacifica*). Previous authorities and morphological analyses considered *G. pacifica* to be sister to *G. arctica*, but surprisingly, recent molecular phylogenetic work has indicated *G. pacifica* is sister to a *G. immer*-*G. adamsii* clade.

In this work, we test these phylogenetic hypotheses using massive amounts of second-generation sequencing data (hundreds of independent loci) from multiple samples of each *Gavia* species to arrive at a robust phylogeny of the family. These genetic data along with the estimated divergence times for each species will help illuminate which geologic events (e.g., glacial maxima/minima) may have played significant past roles in diversifying the *Gavia* lineage.