

SECRETS OF THE EVOLUTION OF AUKS (ALCIDAE)

Summary

Auks (Alcidae) are pelagic charadriiform birds (Charadriiformes), which are divided into three groups: auks (Alcinae), Lucas auks (Mancallinae) and puffins (Fraterculinae). They are characterized by their foraging technique, called "underwater flight". It has forced a number of body changes and had an impact on the geographical spread of these birds. They are found only in the northern hemisphere, the polar, the subpolar or upwelling areas, where cold deep-seawater rises to the surface. They show strong similarities in appearance and ecology with penguins, therefore they are often referred to as "penguins of the north". However, between these birds apart from geographical range there are a

number of differences. The most important is that all among the 24 species of auks living today can fly. As it turns out, this was not always the case as evolution of these birds has been improving technology of "underwater flight". The result was the emergence of flightless forms in the past. They appeared independently in two evolutionary lineages in Atlantic (genera *Pinguinus*) and Pacific (subfamily Mancallinae). Recent studies show a significant diversity of auks in the past, particularly during Miocene and Pliocene. Unfortunately, their early evolution, as it is also the case for other charadriiform birds, remains obscure.