

HARLEQUIN DUCKS (*HISTRIONICUS HISTRIONICUS*) OF THE RIVER LAXA, ICELAND: BREEDING SUCCESS IN RELATION TO CONDITIONS ON THEIR BREEDING, MOLTING AND WINTERING GROUNDS

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About 14,000 harlequin ducks (*Histrionicus histrionicus*) are found wintering in Iceland. The largest breeding concentration, accounting for about 4% of the total, is found on the River Laxa (length 61 km, surface area 750 ha of which 241 ha turbulent water) which runs from Lake Myvatn into the Arctic Ocean at Skjalfandi Bay. Numbers and production of harlequin ducks of the River Laxa have been monitored for thirty years, as part of monitoring the Myvatn – Laxa ecosystem. In the 1970s, spring numbers of harlequin ducks were at low levels (total about 200) but an increase to about 500 occurred during the study period. Production of young fluctuated between 3 and 235 total, mean 74, corresponding to 0.49 young per female in spring. Only about 16% of females were accompanied by broods. Detailed studies of breeding biology, begun in 2005, are expected i.a. to yield information on non-breeding among females. Production of young was positively and significantly ($P < 0.001$) correlated with abundance of blackflies (*Simulium vittatum*). Change in numbers between years was density dependent and was not associated with previous breeding success, suggesting that winter resources may be important in determining numbers. Molting and wintering harlequin ducks are found in numbers on the coast close to the mouth of the River Laxa. Color banding and radio tracking is expected to clarify the origin of these birds. A study of feeding habitat and diet at the sea coast has been started. This includes detailed mapping of feeding grounds, using total station (tachymeter) to locate feeding birds and benthic samples combined with fecal analysis to identify food remains.