

COMMENTARY

GENETIC AND DEMOGRAPHIC CRITERIA FOR DEFINING POPULATION UNITS FOR CONSERVATION: THE VALUE OF CLEAR MESSAGES

DANIEL ESLER^{1,3}, SAMUEL A. IVERSON¹, AND DANIEL J. RIZZOLO²

¹*Centre for Wildlife Ecology, Simon Fraser University, 5421 Robertson Road, Delta, BC V4K 3N2, Canada*

²*Alaska Science Center, U. S. Geological Survey, 1011 East Tudor Road, Anchorage, AK 99503*

Manuscript received 6 January 2006; accepted 6 January 2006.

³E-mail: desler@sfu.ca

Abstract. In a recent paper on Harlequin Duck (*Histrionicus histrionicus*) interannual site fidelity (Iverson et al. 2004), we concluded that wintering populations were demographically structured at a finer geographic scale than that at which genetic differentiation was observed and that conservation efforts should recognize this degree of demographic independence. In a critique of our study, Pearce and Talbot (2006) contend that our measures of fidelity were not robust and imply that in the face of “mixed messages” we failed to appreciate the role of genetic data in defining population units. We recognize, as we did in our original paper, that our methods for quantifying site fidelity have some limitations; however, the patterns in our data are consistent with a considerable body of literature indicating high winter site fidelity in Harlequin Ducks. Moreover, we do not consider differences in the scales at which genetic and demographic structure are expressed to be “mixed messages,” given the different spatial and temporal scales at which genetic and contemporary demographic processes operate. We emphasize that a lack of genetic differentiation does not necessarily preclude the existence of contemporary demographic structure with relevance for conservation.

Key words: demography, genetics, Harlequin Duck, *Histrionicus histrionicus*, population structure, site fidelity.