Wilson Bull., 103(4), 1991, pp. 723-725

**Distribution and population status of Harlequin Ducks in Idaho.**—Harlequin Ducks (*Histrionicus histrionicus*) occur in two distinct populations in North America. The population wintering along the northern Atlantic coast has declined substantially (Goudie 1989) to about 1000 individuals and is currently listed as endangered in eastern Canada. The population wintering along the northern Pacific coast is much larger (Bellrose 1980), although population size and trend are unknown. Harlequin Ducks migrate inland to nest along swiftly flowing mountain streams (Bellrose 1980). In Idaho, they are considered uncommon summer residents in the northern part of the state (Burleigh 1972). Although the AOU check-list (1983) reports that Harlequin Ducks breed from the Canadian border south to central Idaho, we found only one Idaho breeding record (Hand 1941) and four sight records (Merrill 1897; Rust 1915; Hand 1932, 1941) in published literature. Due to their apparent scarcity in Idaho, Harlequin Ducks were classified as a "sensitive species" by Regions 1 and 4 of the U.S. Forest Service in 1987 and 1990, respectively, and a species of special concern by the state in 1989 (Moseley and Groves 1990). From 1987–1990, we conducted surveys to determine distribution, population status, habitat use, and breeding biology.

Methods. — We surveyed 75 mountain streams in northern, north-central, and southeastern Idaho between April and August, 1987–1990, for Harlequin Ducks. Streams were selected for survey based on the availability of suitable habitat (Wallen 1987), personal knowledge or reports of Harlequin Duck use, and proximity to streams known to be used by Harlequin Ducks. Surveys were conducted by hiking, rafting, inner-tubing, or driving along streams. Most streams were surveyed several times in at least two of the four years. We also distributed a poster statewide requesting information on sightings of Harlequin Ducks. Below we include results of our own field surveys and reports from U.S. Forest Service biologists, state fish and game biologists, and other experienced observers made between May and September 1987–1990.

Results and discussion. – We observed adult Harlequin Ducks on 16 streams and broods on eight of those streams; we received reports of adults on 17 additional streams and broods on five other streams. Population densities on stream reaches used by Harlequin Ducks averaged 0.15 pairs/km of stream. The majority of streams (73%) where Harlequin Ducks were sighted and all streams where broods were observed are located between the Lochsa River (46°30'N, 114°57'E) in north-central Idaho and the upper Priest River (48°58'N, 115°56'E) near the Canadian border.

In northern and north-central Idaho, Harlequin Ducks were observed at elevations from 600 to 1200 m. These streams were usually associated with riparian habitat dominated by an overstory of western red cedar (*Thuja plicata*) or western hemlock (*Tsuga heterophylla*). In southeastern Idaho, Harlequin Ducks were observed from 1770 to 1890 m in elevation with riparian habitat dominated by shrubs (*Salix* spp.) and a canopy of Douglas-fir (*Pseudotsuga menziesii*). Although breeding has not been confirmed in southeastern Idaho, breeding does occur just across the border in northwestern Wyoming.

Harlequin Ducks are relatively unproductive, in part due to a high nonbreeding rate (Bengston 1972, Kuchel 1977, Wallen 1987), and not all streams where breeding occurs produce broods every year. Therefore, breeding may be occurring on some streams where we observed only adults. However, other streams are probably only used during migration between coastal wintering areas and breeding areas farther east in Wyoming and Montana (Wallen and Groves, unpubl. data). Early spring observations and observations of adults in mid- to late-summer in particular may be of migrating ducks. Thus, a breeding distribution based upon the presence of pairs on streams during early spring or of single birds later in the season can overestimate actual breeding range.

## 724 THE WILSON BULLETIN • Vol. 103, No. 4, December 1991

Our surveys indicate that only a small number of Harlequin Ducks breed successfully in Idaho. We observed 32 pairs in 1990, and only about a third (11) of those pairs produced broods. We estimate that the adult population resident in Idaho during the breeding season is less than 100 individuals, distributed primarily on 28 streams over approximately 38,000 km<sup>2</sup> in northern and north-central Idaho.

As Goudie (1989) noted, the Harlequin Duck has received little scientific attention, and there are few data to compare our population estimates historically either in Idaho or elsewhere. Although Harlequin Duck breeding surveys are currently being conducted in Montana (D. Genter, pers. comm.) and western Washington (G. Schirato, pers. comm.), almost nothing is known of their breeding status in adjacent Oregon (K. Durbin, pers. comm.) or British Columbia (W. Campbell, pers. comm.). Densities of Harlequin Ducks on streams in Grand Teton National Park, Wyoming (Wallen 1987), Glacier National Park, Montana (Kuchel 1977), and Iceland (Bengston 1972) are higher than those in Idaho, while densities in Labrador are considerably lower (Goudie 1988).

Goudie (1989) cited evidence that hunting of Harlequin Ducks may have been responsible for declines in eastern North America. However, further investigation into factors limiting Harlequin Duck populations is warranted. Conservation of nesting and brood-rearing habitat along streams where they breed may be critical to their continued existence in Idaho and elsewhere.

Acknowledgments. – This work was funded by the Idaho Panhandle, Clearwater, Nez Perce, and Targhee National Forests under the Challenge Cost-Share Program. The Nongame and Endangered Wildlife Program of the Idaho Dept. of Fish and Game contributed inkind matching support. We thank E. and M. Atkinson, C. Russell, numerous volunteers, many individuals in the Forest Service and Dept. of Fish and Game, and river guides for their assistance with field surveys and reporting of Harlequin Duck sightings. I. Goudie reviewed this manuscript and provided helpful comments.

## LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American birds, 6th ed. American Ornithologists' Union, Washington, D.C.
- BELLROSE, F. C. 1980. Ducks, geese, and swans of North America. Stackpole Books, Harrisburg, Pennsylvania.
- BENGSTON, S. A. 1972. Breeding ecology of the harlequin duck *Histrionicus histrionicus* (L.) in Iceland. Ornis. Scand. 3:1–19.
- BURLEIGH, T. D. 1972. Birds of Idaho. The Caxton Printers, Ltd., Caldwell, Idaho.
- GOUDIE, R. I. 1988. Breeding distribution of Harlequin Ducks in northern Labrador. Atlantic Soc. Fish and Wildlife Biol. Newsletter 4:17-21.

——. 1989. Historical status of Harlequin Ducks wintering in eastern North America a reappraisal. Wilson Bull. 10:112–114.

HAND, R. L. 1932. Notes on the occurrence of water and shore birds in the Lochsa region of Idaho. Condor 17:118–129.

——. 1941. Birds of the St. Joe National Forest, Idaho. Condor 43:20–232.

KUCHEL, C. R. 1977. Some aspects of the behavior and ecology of Harlequin Ducks breeding in Glacier National Park, Montana. M.S. thesis, Univ. of Montana, Missoula, Montana.

MERRILL, J. C. 1897. Notes on the birds of Fort Sherman, Idaho. Auk 14:347-357.

MOSELEY, R. M. AND C. R. GROVES. 1990. Rare, threatened, and endangered plants and animals of Idaho. Idaho Department of Fish and Game, Boise, Idaho.

RUST, H. J. 1915. An annotated list of the birds of Kootenai County, Idaho. Condor 17: 118-129.

WALLEN, R. L. 1987. Habitat utilization by harlequin ducks in Grand Teton National Park. M.S. thesis, Montana State University, Bozeman, Montana.

E. FRANCES CASSIRER, Nongame and Endangered Wildlife Program, Idaho Dept. of Fish and Game, 2320 Government Way, Coeur d'Alene, Idaho 83814; CRAIG R. GROVES, Nongame and Endangered Wildlife Program, Idaho Dept. of Fish and Game, Box 25, Boise, Idaho 83707; AND RICHARD L. WALLEN, Office of Science and Resource Management, Grand Teton National Park, Box 170, Moose, Wyoming 83012. Received 26 March 1991, accepted 2 July 1991.

Wilson Bull., 103(4), 1991, pp. 725-726

House Sparrows open an automatic door.—House Sparrows (*Passer domesticus*) are notable for their behavioral plasticity. We here report a remarkably novel manifestation of House Sparrow behavioral adaptability.

On the morning of 29 December 1990, we saw House Sparrows repeatedly opening an automatic sliding door on the outside of the Hamilton, New Zealand, Intercity Bus Station. The Horizon® automatic door consisted of two glass panes, each ca 1.2 m in width, designed so that one slides past the other. The door connected a waiting room and small cafe with the bus platforms outside. Above the sliding door on both the inner and outer walls was mounted a small sensor, shaped like a rectangular box, slanted downward toward the space in front of the door to be triggered effectively by persons wishing to pass through. A small green light shone continuously from the front of the sensor, and an equally small red light shone twice for < one sec duration, separated by a one sec interval, when movement in front of the door was sensed. The top surface of both sensors (ca  $4 \times 10$  cm) was covered with small bird droppings.

At least two males, but no females, employed similar techniques to cause the door to slide open. A bird either flew slowly past the sensor, at a distance of <10 cm, or hovered briefly in front of the sensor at a similar distance, or landed on top of the sensor, leaned forward, and bent its neck until its head triggered the sensor and the door opened. After a pause of one to several sec, the bird then flew through the doorway. In about 45 min of observations (30 min from ca 07:00 to 07:30 and 15 min from 10:00 to 10:15), we saw sparrows open this door 16 times. A short return visit in the afternoon of the same day revealed several more instances. Female sparrows simply waited for persons to open the door for them, then flew through the doorway behind the person before the door slid shut. Occasionally, a female sparrow perched on the floor of the waiting room or on the tarmac outside, ca 2–3 m from the door, and appeared to wait for a person to activate the door. Male sparrows sometimes did the same.

The traffic supervisor, J. Price, informed us that the door had been installed only two months previously (there are still swinging doors at both ends of the sliding door). He was aware that sparrows had been opening the door and noted that they had learned this "very quickly" after the door had been installed.

There would seem to be at least two factors contributing to the learning of this remarkable behavior. Sparrows are tolerated around cafe tables in the bus station, as is true in similar circumstances throughout New Zealand. Indeed, they are certainly rewarded for their predisposition to scavenge crumbs from table tops and the floor beneath tables. Hence, there were both food rewards and time without persecution available to them inside the waiting