



Canada—Québec

The St. Lawrence River estuary and Barrow's goldeneye

The Barrow's goldeneye, *Bucephala islandica*, is a duck species distributed mainly in northwestern North America. A small population is found in northeastern North America, on which little research had been done until recently—after it was designated as of Special Concern by the Committee on the Status of Endangered Wildlife in Canada.

During the past few years, species-at-risk biologists from the Canadian Wildlife Service have implemented studies on this population using aerial and ground surveys, nesting boxes, and satellite telemetry. They established that the St. Lawrence River estuary, Québec, is the major wintering area for the eastern North American population of Barrow's goldeneyes, supporting over 50 percent of the entire population, estimated at no more than 4,500 birds. In 1998-1999, they notably implanted 21 Barrow's goldeneyes (18 males and 3 females) wintering along the St. Lawrence with PTT-100s to document their breeding and molting distribution and phenology, and to describe the timing and routes of their spring, molt and fall migrations. They found that the north shore of the St. Lawrence River estuary and gulf is the core breeding area for Barrow's goldeneyes in eastern North America, refuting the idea that these birds breed in northern Québec and Labrador. They also established that males undertake a genuine molt migration and highlighted the importance of northern molting areas because birds stayed there four months each year.



Michel Robert holding a male Barrow's goldeneye implanted along the St. Lawrence River

In the near future, they plan to implant more Barrow's goldeneyes, specifically adult females, with PTT-100s in order to locate their molting areas and get additional information on their migration routes and breeding distribution.

Michel Robert, Canadian Wildlife Service



A pair of Barrow's goldeneyes

Photos courtesy of Alain Hogue and Denis Faucher respectively

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Venezuela

Post-release survival and habitat utilization of white marlin

We are studying post-release survival and habitat utilization of white marlin, *Tetrapturus albidus*, released from commercial and recreational fisheries throughout the western North Atlantic Ocean. White marlin are highly prized by recreational fishermen, and the species is also taken as incidental bycatch by commercial pelagic longline fishing operations targeting tunas and swordfish. Recent assessments indicate that white marlin are seriously overfished, and in 2002 the species was petitioned for listing as Threatened or Endangered under the U.S. Endangered Species Act.

Over the past year and a half we have deployed more than fifty PTT-100 and PTT-100 High Rate Archival Pop-up Tags, most of which were programmed to release after ten days, on white marlin released from the recreational and commercial fisheries. In the recreational study, we tagged twenty-one white marlin caught off La Guaira Bank, Venezuela, and another twenty on white marlin caught off the Dominican Republic, Mexico, and the U.S. mid-Atlantic coast. Our results indicate a big difference in survival between white marlin caught on standard J-hooks (35 percent mortality) and circle hooks (0 percent mortality), suggesting that a simple change in hook type could reduce recreational fishing mortality for this overfished species. Data from returned tags from fish released from recreational and commercial gears demonstrate that white marlin make frequent dives below 100 meters, presumably in search of food, although they spend the majority of time in the warm, upper 10 meters of the water column. The data also indicate that the species is highly migratory—surviving fish have moved as much as 782 km over the ten-day tagging period.



Andrij Horodysky, John Graves and David Kerstetter

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John Graves, Virginia Institute of Marine Science



Tagged white marlin ready for release

Photos courtesy of Guy Harvey & Nettan Carlsson respectively