

1981

Duck Hunting in Mississippi River Pools: A Geographer's Assessment

Mark Schroeder

University of Minnesota, Minneapolis

Follow this and additional works at: <https://digitalcommons.morris.umn.edu/jmas>



Part of the [Geography Commons](#)

Recommended Citation

Schroeder, M. (1981). Duck Hunting in Mississippi River Pools: A Geographer's Assessment. *Journal of the Minnesota Academy of Science*, Vol. 47 No.3, 2-4.

Retrieved from <https://digitalcommons.morris.umn.edu/jmas/vol47/iss3/2>

This Article is brought to you for free and open access by the Journals at University of Minnesota Morris Digital Well. It has been accepted for inclusion in Journal of the Minnesota Academy of Science by an authorized editor of University of Minnesota Morris Digital Well. For more information, please contact skulann@morris.umn.edu.

Duck Hunting in Mississippi River Pools: A Geographer's Assessment

MARK SCHROEDER*

ABSTRACT — Terrain, ducks, and hunters combine to provide an environment of land, water, and air space above that constitutes a great waterfowl hunting region along the Mississippi River between the mouths of the Black River and Wisconsin River and touching boundaries of three states - Wisconsin, Minnesota, and Iowa. The marshes of the floodplain have provided excellent waterfowl habitat, particularly since the 1930's when development of river navigation channels created pools of relatively consistent water level and land conditions. Many types of ducks, with canvasbacks especially numerous, utilize the region during annual migrations. Major highways offer access to the region for hunters, who indicate preference for travel on an east-west axis. Research information and a field survey by the author of this paper revealed locational data on home towns of duck hunters and other demographic information.

The annual migration of waterfowl is one symbol of autumn in the Upper Middlewest. In times past, ducks and geese migrated freely through this area; but now they are assaulted by armed men called duck hunters.

The geography of duck hunting along the Mississippi River between the mouths of the Black and Wisconsin Rivers may be examined around three variables: land, ducks, and hunters. This land, an excellent waterfowl habitat, is open and accessible to the public. Major duck populations (especially canvasbacks) use the area each fall. Likewise, many hunters keep returning to the river section each year.

The geography of duck hunting is not static; time must always be considered. Variability between seasons is normal, but subtle changes in weather, water levels, and other variables may have a drastic impact upon ducks and hunters in any single year.

Highlights of The Region

The Mississippi River floodplain between the Black and the Wisconsin Rivers touches parts of three states: Wisconsin, Minnesota, and Iowa (Figure 1). The hilly region tributary to the Wisconsin side of the river is driftless terrain known as Lower Coulee Country. The land rising across the river in Minnesota and Iowa is also driftless hill country.

Highways and urban development are important characteristics of the region. LaCrosse, (Wisconsin, 1980 population 48,347) is the major city; other important urban places include Winona (Minnesota, population 25,075) and Prairie du Chien Wisconsin, population 5,884). Road access focuses on LaCrosse, where two major highways bridge the Mississippi. Interstate 90 provides direct access to the region from Rochester, Minnesota, and Madison and Milwaukee, Wisconsin. U.S. Highway 61 provides a link to Minneapolis-St. Paul, Minnesota. Other bridging points are at Winona, Lansing and Prairie du Chien.

The entire region is a part of the Upper Mississippi River Wildlife and Fish Refuge. The 195,000 acre refuge was established in 1924 and extends for 284 miles from Wabasha,

Minnesota, to Rock Island, Illinois. It is administered by the U.S. Fish and Wildlife Service.

The United States Army Corps of Engineer's navigation pools also help define the area under consideration. Pools 7, 8 and 9 are completely within the region.

Characteristics of The Land

The area comprising pools 7, 8 and 9 lies on the Mississippi River floodplain and is covered by water. More than 79,000 of the 83,578 acres in these three pools is classified as wetland. The bulk of this is inland fresh water, including seasonal flood basins, shallow marshes, deep marshes, and open water.

The land on the floodplain was quite different prior to the 1930's. Then the river bottoms consisted of wooded islands intersected by deep sloughs. A number of marshes and ponds existed in the wooded areas, but they usually dried up by late summer. Waterfowl habitat at best was limited.

The construction of low level dams by the Corps of Engineers in the early 1930's as part of the 9-foot navigation channel project produced profound changes. These impoundments transformed the river bottoms from an area of widely fluctuating water levels into a series of pools with semi-stable water conditions. With the impact of spring floods and summer drought minimized, marshes with excellent aquatic habitat developed.

The pools can be divided into three biological zones (Bureau of Sports Fisheries and Wildlife, n.d.). The upper end of each pool exhibits normal river conditions. Deep sloughs and wooded islands are common, whereas marshes are limited (Figure 2). In the middle zone water covers old islands and old hay meadows, creating large and relatively shallow water areas. The best marshes are in such segments. In contrast, the lower end of each pool contains deep open water with almost no marsh (Figure 3).

The best recognized waterfowl habitat on the Upper Mississippi Wildlife Refuge is north of the Wisconsin River confluence and includes the region reported here. These upper pools showed the greatest change in natural ecology following construction of the locks and dams. Important aquatic plants, including bulrush, wild rice, and wild celery, provide food and cover for the ducks. In contrast to areas further south, the marshes north of the Wisconsin produce sufficient amounts of natural food to support waterfowl using the area. Field feeding is therefore, uncommon. (Green, 1963)

Virtually all land in the region is available for public use.

*MARK SCHROEDER was a senior and graduate student in geography and history at the University of Minnesota in Minneapolis during the period of this study. He reported on the survey at the 1980 annual meeting of the Minnesota Academy of Science.

The public lands on the refuge are owned under co-operative agreement by the Bureau of Sports Fisheries and Wildlife and the Corps of Engineers. On the entire Upper Mississippi Refuge, about 79 percent of the area is open to public hunting. The other 21 percent is designated as sanctuary and therefore closed to hunting (Green, 1963).

The waterfowl habitat created by the impoundment of the upper Mississippi has, however, declined both qualitatively and quantitatively over the last two decades. Sedimentation poses the primary threat to waterfowl habitat.

The major source of sedimentation is soil erosion. It is estimated that at least 100 times more fish and wildlife habitat is destroyed by fine sediments from erosion than by dredging practices. Streambank erosion from the Chippewa River contributes about 70 percent of this sand. Government experts suggest that upland soil erosion from agricultural activities is the major source of fine sediments (Great River Environmental Action Team, 1978). This conclusion is questionable considering that the Chippewa River has the largest drainage basin in Wisconsin, its banks are steep, erosion is constant. Shifting deposits of sediments are a natural occurrence on the Mississippi below the Chippewa and will continue to challenge wildlife managers.

Other factors threaten habitat quality in the region. Fluctuating water levels in the pools can adversely affect vegetation in shallow backwater marshes. Increasing recreational pressure from summer homes, boaters, and beach users continues to impinge upon natural habitat. Any changes in the general quality of bird habitat is bound to affect ducks and duck hunting.

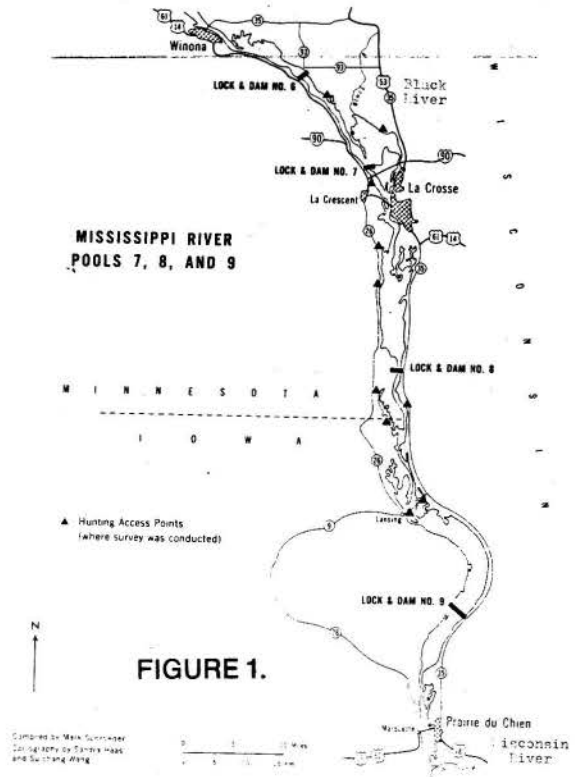
Movement pattern of the ducks

Pools 7, 8 and 9 are along the Mississippi Flyway. Waterfowl using this flyway nest in an area ranging from the Great Lakes to Hudson Bay and winter along the Gulf of Mexico. During this fall and spring migrations, the waterfowl narrow their travel paths to a corridor following the Mississippi River. By far the largest populations will utilize pools 7, 8 and 9 during the fall migration (September to November). The most common duck species using pools 7, 8 and 9 during the fall are canvasbacks, mallards, widgeons, bluebills, wood ducks, ring-necked ducks, and blue-winged teal.

Although the summer population is much smaller than the migrating population, a number of ducks spend the summer in the region raising their broods. Hooded mergansers, mallards, blue-winged teal, and wood ducks are the major summer residents. In contrast, winter finds the region almost devoid of waterfowl. Just a handful of mallards and Canadian geese are hardy enough to survive the cold.

The variability of duck populations is mirrored in the percentage of total duck days use on the Upper Mississippi Refuge. Trends recorded between 1953 and 1974 show a major shift in species composition. From 1953 to 1960, mallards dominated the use of the refuge with 37.6 percent of the total duck days use. By 1974, the number of days used by mallards was only 21.06 percent of the total days used by ducks. Widgeons were also down over the same period, from 14.58 to 7.23 percent.

Other species have compensated for the decline of mallards and widgeons. Wood ducks and bluebills both increased their percent of total duck days use over the period 1953 to 1974 from 4.13 to 10.19 and 12.88 to 22.68 percent respectively. The biggest increase in use, however, was recorded by canvasbacks. Canvasbacks increased their total duck days use on the refuge by over five times, from 2.5 to 13.66 percent, during the twenty-one year period.



Most of the canvasbacks using the Upper Mississippi Refuge are resting on pools 7, 8 and 9. U.S. Fish and Wildlife Service staff suggest that the region attracts canvasbacks because of an abundance of wild celery.

When it comes time to hunt the ducks, the concept of vulnerability explains which species will make up the harvest. Vulnerability is a ratio of harvest per unit of population. On the Upper Mississippi Refuge, mallards are killed at the same rate as they occur in the population. Green-winged teal are comparatively more vulnerable with a rating of 3.57, while bluebills are apparently less vulnerable with a .21 rating (Green, 1963). The reasons for these great differences include the type of hunting, weather conditions, and hunter preferences.

The duck species in an average hunter's bag limit will rarely be found in the same proportion as the species population because of differences in species vulnerability. The major species harvested in the region are mallards, wood ducks, widgeons, blue-winged teal, and green-winged teal. From year to year, the proportion of an individual species, relative to the total harvest, varies greatly.

Source areas of the hunters

Waterfowl hunting is not a recent phenomenon in the region. In 1805, soldier-explorer, Zebulon Pike "killed one goose flying just south of present day LaCrosse in the spring. Later in the past century, political sage Ignatius Donnelly told of a hunter on the Minnesota side of the Mississippi who "brought down forty-two ducks with a single charge of his shotgun." It is not quite that easy any more.

The modern day duck hunter finds himself much less isolated than Pike was. During an average fall, pools 7, 8 and 9 will record more than 35,000 visits by duck hunters. These three pools receive more than half of the hunting pressure recorded for the entire Upper Mississippi Refuge. The La-Crosse District of the refuge (pools 7 and 8) is clearly the most widely hunted portion of the upper Mississippi River.

Pools 7, 8 and 9 clearly attract a large number of duck hunters. In order to find out who they are and where they come from, a field survey of duck hunters was conducted by the author on November 11-12, 1978. Questionnaires were placed on vehicles while the hunters were on the river. A 60 percent return rate yielded responses from eighty-seven individual duck hunters.

A question pertaining to the hunter's home town revealed that more than half were either hunting within ten miles of home (22 percent) or over 100 miles away from home (30 percent). All the hunters lived in the three states of the region with one exception, a hunter from Louisiana.

LaCrosse was listed as home more than any other place. Together with neighboring Onalaska, LaCrosse accounted for more than 24 percent of the hunters checked. This is not surprising given its population size and position in the middle of the region. A large number of hunters also were reported from Rochester (12 percent) and the Madison-Milwaukee (9 percent) area. This suggests the importance of the interstate highway and reveals a tendency for hunters to head to the river along an east-west axis. Only a small number of respondents (4 percent) came from the Minneapolis-St. Paul area.

Other demographic information about hunters and their habits was revealed in the survey. Most duck hunting trips in the area were of a short duration, 54 percent lasting less than a day and only 10 percent extending longer than a weekend. At least three fourths of the hunters (76 percent) were between the ages of 21 and 65. Noteworthy in the occupational breakdown of the hunters was the low number of farmers (3 percent), possibly because farmers like to hunt on their own property, rather than on public lands.

Most respondents were veterans in their attachment to the river for duck hunting. About 50 percent had hunted on the Mississippi for more than 10 years and more than 60 percent had hunted on the river four or more times during the season.

River duck hunting is conducted largely in marshes from blinds, with shooting over decoys and dogs to retrieve being most popular. Most hunters work in pairs, and have hunted together for many years.

Political considerations play a role in the geography of duck hunting in pools 7, 8 and 9. The interstate boundary between Wisconsin and Minnesota-Iowa runs through the Mississippi River. A person licensed in one state can legally hunt only the portion of the river within the jurisdiction of that same state. Minnesota and Iowa hunters are therefore on the western part of the floodplain, whereas Wisconsin hunters are on the eastern side. Higher cost for non-resident duck licenses generally discourages holding more than one from the home state. Observations of river access points during the duck hunting season revealed only resident license plates on cars in the park, but exceptions to this general rule were noted near bridges.

The state boundaries and different statutes affect the type of shotguns and ammunition used by hunters. Regulations in 1977 made steel shot mandatory in 12 gauge shotguns on the Wisconsin side of the river, while Minnesota and Iowa had different rules. Studies during that season revealed that use of 12 gauge shotguns declined sharply along the Mississippi in Wisconsin while 20 gauge shotguns were used much more than before (Nicklaus, 1978). Minnesota and Iowa did not experience this shift until later.

The typical upper Mississippi River duck hunter is either a river person or a city person. The life of the river person hunter is oriented towards the Mississippi in other respects,

too. The family probably lived near the river and depended upon the river for a livelihood for at least two generations as trapper or commercial fisherman and now hunts almost every day of the season.

The city person duck hunter lives and works in an urban community and hunts on the Mississippi River on the weekends mainly for recreation. These are a vast majority of the duck hunters now found on the upper Mississippi.

The psychology of duck hunters centers on hunter ethics and satisfaction. A Wisconsin waterfowl hunter survey indicated that 9 percent expressed excellent satisfaction with their hunt, whereas 46 percent felt their hunt was poor. Items of high satisfaction included exercise, appreciation of nature, seeing game, utilizing hunting skills, companionship, and escape (Jackson et al., 1977).

The same Wisconsin waterfowl hunter study indicated a great incidence of game law violations along the Mississippi River. The violation rate for 1976 was above 30 percent. This rate was greater along the Mississippi River than in other parts of that state.

The Mississippi River between the Black and Wisconsin Rivers provides an ideal setting, but it is hard to forecast the future of duck hunting in this area because variability has been common in the past and is likely to remain. Effective land and wildlife management is necessary if the resource is to be maintained. People management will affect the future, too.

ACKNOWLEDGEMENTS

Much of the data for this study is from unpublished sources. The author would like to thank the staff of the U.S. Fish and Wildlife Service, and especially Dr. William E. Green of Winona and Dr. Robert Jackson of the University of Wisconsin-LaCrosse for contributing data. Mike McElroy, Molly Womack and Karen Bosch provided assistance with observations in the field. Additionally, the guidance of Dr. Cotton Mather from the University of Minnesota geography department is greatly appreciated.

REFERENCES

- BUREAU OF SPORTS FISHERIES AND WILDLIFE. Upper Mississippi River Wilderness Study Summary. (n.p., n.d.).
- GREAT RIVER ENVIRONMENTAL ACTION TEAM. 1978. Interim Status Report, Upper Mississippi River. (n.p.).
- GREEN, W.E. 1963. Waterfowl Utilizations and Hunting Kill, 1946-1960: Upper Mississippi River Wildlife and Fish Refuge and Mark Twain National Wildlife Refuge. U.S. Fish and Wildlife Service Special Report-Wildlife No. 71, Washington, D.C.
- JACKSON, R. and NORTON, R. 1977. Preliminary Report of Behavior, Characteristics, and Attitude of Wisconsin Waterfowl Hunters. Paper delivered at the 1977 N.R.A. Hunter Safety Coordinators Workshop Cincinnati, Ohio.
- JACKSON, R., NORTON, R. and ANDERSON, R. 1979. Improving Ethical Behavior in Hunters. Paper delivered at the North American Wildlife Conference, Toronto.
- NICKLAUS, R.H. 1978. A Summary of 1977 Waterfowl Harvest Parameters on Mississippi River Portions. Wisconsin Department of Natural Resources, LaCrosse.
- U.S. DEPARTMENT OF INTERIOR, 1964. Waterfowl Tomorrow, Washington, D.C.