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Wildlife Values Versus Human Recreation: Ruby Lake National Wildlife Refuge

Stephen H. Bouffard

*U.S. Fish and Wildlife Service,
Ruby Lake National Wildlife Refuge,
Ruby Valley, Nevada*

Expanding human populations are making increased recreational demands on National Wildlife Refuges (NWR). The U.S. Fish and Wildlife Service (FWS) is trying to accommodate these demands whenever possible. An important, but not primary objective of NWRs is to provide for various public uses, including recreation (U.S. Fish and Wildlife Service 1976a). The Refuge Recreation Act of 1962 (16 U.S.C. 460K-460K-4) authorizes the FWS to allow recreational uses on NWRs, National Fish Hatcheries and similar lands. This act specifies that all recreational uses must be secondary to the primary purpose of the refuge. While most refuge recreation programs do not conflict with the primary refuge purpose, some conflicts have occurred. Some recreation programs were started before conflicts with wildlife became apparent. Others were not in conflict with wildlife while public visits were low, but later came into conflict after public use increased. Conflicts of this type become very difficult to change because the public has come to expect and demand these recreation opportunities. This paper will discuss FWS attempts to manage such a recreational program at Ruby Lake NWR where recreational boating had grown from low use and little wildlife conflicts to heavy use and substantial conflicts with nesting waterfowl.

Ruby Lake NWR was established in 1938 by Presidential Order No. 7923 as a migratory bird breeding area. The 37,630 acre (15,236 ha) refuge lies in a high (6,000 feet, 1,829 m) closed basin in northeastern Nevada. The South Sump is the largest marsh unit on the refuge and contains 7,000 (2,835 ha) of the 12,000 acres (4,680 ha) of wetlands on the refuge. This unit has interspersed open water, uplands and emergent vegetation, a habitat mixture that attracts large numbers of nesting waterfowl, particularly diving ducks. About 85 percent of the canvasbacks (*Aythya valisineria*) and redheads (*A. americana*) on the Refuge nest in this unit. Various other waterfowl and wading birds nest on the Refuge including trumpeter swans (*Olor buccinator*) and sandhill cranes (*Grus canadensis*). Nearly eighty percent of the fishing and all of the recreational boating on the Refuge occur on the South Sump (Green 1981).

Ruby Lake NWR is the major canvasback breeding area in the western United States. No other single refuge in the lower 48 states regularly produces as many canvasbacks (1,200–3,500 ducklings fledged each year). About 400 pairs of canvasbacks and 430 pairs of redheads nest on the refuge annually. Averaged over the entire refuge, two-thirds of which is dry uplands, this represents a breeding population of 13.6 canvasbacks per square mile (5.2/km²) as compared to 10 or more per square mile (>3.8/km²) in the best prairie pothole area near Minnedosa, Manitoba (Bellrose 1980:303).

Ruby Lake NWR is one of the few remaining major wetlands of Nevada. Surprisingly, Nevada once had large areas of wetlands, but because of water demands many areas have been lost. In western Nevada nearly 30,000 acres (12,000

ha) of wetlands remain in wet years where there were once over 123,000 acres (50,000 ha) (Nevada Chapter, The Wildlife Society 1980). The scarcity of wetlands in Nevada makes each remaining area more valuable to wildlife. It also tends to concentrate water based recreation on these same areas, leading to conflicts with wildlife.

The boating-wildlife conflict had its origin before the Refuge was established. In the early 1930s, largemouth bass (*Micropterus salmoides*) were stocked in the marsh. They were not seen again until 1941; fishing began in 1942 (Trelease 1948). Because the first fishermen were relatively few in number and fished mostly from shore (Green 1980), they caused little disturbance. The number of public visits (Table 1), the number of boats, and motor size increased over the years. Currently about 90 percent of the visits involve fishing and 65 percent of the visits involve fishing from boats (U.S. Fish and Wildlife Service 1981). Public visits were not evenly distributed throughout the year, but were concentrated from May through early September. Heaviest public use coincided with the waterfowl breeding season. In 1976 a survey of over 100 boats owned locally and used primarily on the Refuge indicated that the average motor size on these boats was over 90 horsepower (hp); several motors exceeded 250 hp (U.S. Fish and Wildlife Service 1976b). Sometime during the 1950s waterskiing began on one pond about 30 acres (12 ha) in size.

Boating and waterskiing were, for the most part, uncontrolled and were allowed in the prime diving duck nesting habitat during the nesting season. This uncontrolled use of boats created several conflicts with waterfowl production. Disturbance to breeding diving ducks was considerable. Courting canvasback and red-head pairs flushed an average of nearly 300 yards (271 m) from any boat regardless of motor size (Howard 1978). Noise from outboard motors flushed canvasbacks and redheads off their nests at an average of about 38 yards (35 m), and some flushed over 110 yards (100 m) away (Bouffard 1980). Few females covered their nest when flushed, exposing the eggs to chilling, overheating, or predation by ravens (*Corvus corax*), the major egg predator on the Refuge (Bouffard 1980). Repeated flushing of birds and anchoring of boats near nests led to nest desertion. Boats dispersed broods and forced them into less desirable habitat.

In addition to disrupting breeding waterfowl, boats also caused habitat damage.

Table 1. Public visits for selected years at Ruby Lake National Wildlife Refuge. Data was taken from Refuge files and Public Use Reports.

Calendar Year	Boating and Waterskiing ^a	Fishing	Total Refuge Visits
1955		700	1,500
1960		8,000	18,249
1965	4,030	15,000	20,100
1970	1,700	31,450	34,205
1975	2,945	41,575	45,680
1980		57,698	65,568

^aRecords of visits for boating and waterskiing were not maintained separately until 1963. Boating refers to recreation boating only. Boating associated with fishing is recorded under fishing, the primary activity.

The cutting action of the propellers totally removed the aquatic vegetation in some channels and changed the species composition of the vegetation in other areas. Areas with heaviest boat use had less submergent vegetation (10.7 tons/acre) than non-use areas (45.9 tons/acre) (U.S. Fish and Wildlife Service 1976c.). Loss of vegetation followed by wakes from larger boats caused bank erosion and siltation in some areas. This erosion was most common in the pond where waterskiing was practiced.

By the late 1960s, public use had increased to the point where conflicts with wildlife became apparent. The FWS began a study in 1969 to document the effects of recreational boating on waterfowl production. The boating regulations and study areas changed each year, so the study ended in 1971 with no conclusive results. Only in 1971 was there a difference in redhead nest success between the public use area (61.1 percent) and the control area (93.6 percent) (Napier 1972). Because of pressure from the boating public and the lack of conclusive information from Napier's research, boating regulations were relaxed further in 1972, allowing motorboating throughout the South Sump after 1 July (Appendix 1).

A renewed effort to control boating began in 1974 with a literature review and compilation of data leading to the completion of an environmental impact assessment (EIA) published in 1976. The EIA reviewed the literature on disturbance to breeding waterfowl from recreational boating and documented some effects of boating on waterfowl production at Ruby Lake NWR (U.S. Fish and Wildlife Service 1976c.). Four public hearings were held throughout Nevada; reaction to the conclusions of the EIA was very negative. After considering several alternatives, the FWS proposed regulations to begin in 1978 allowing motorless boats or boats with electric motors year round in designated areas. Outboard motors (10 hp or less) would be allowed in the South Sump after 31 July; waterskiing would be prohibited. Public reaction to this proposal was also very negative and prompted the Assistant Secretary of the Interior to tour the Refuge in June 1977. In April 1978, the following regulations were issued: Motor size restrictions were dropped in favor of speed limits, and the South Sump was divided into four zones: One was open year round for motorless boats only and the other three opened to motorboats on 1 July, 15 July and 1 August. (See Appendix 1 for review of boating regulations). FWS felt that these regulations would adequately reduce conflicts between recreation and wildlife and be more agreeable to the boaters.

Local boaters were not the only group interested in the Refuge. The Defenders of Wildlife (DOW) contended that the altered regulations violated the Refuge Recreation Act and threatened to sue to stop the use of large boats. On 29 June 1978, two days before outboard motors could be used, the DOW obtained a temporary restraining order against the FWS, prohibiting the use of outboard motors on Ruby Lake NWR pending the outcome of their lawsuit. Public reaction to the order was negative and the opponents of the order organized a civil disobedience in response to the ruling. There were threats and heated words, but no injuries, arrests or property damage. The DOW won the court case. On 11 July, the judge declared the regulations unlawful and ordered the FWS to issue new regulations. On 25 July, the FWS issued regulations that allowed outboard motors with a 10 hp restriction through 31 July and allowed waterskiing and motorboating with no motor size restrictions after 31 July. The DOW did not concur with these revised regulations and obtained another temporary restraining order prohibiting

outboard motors larger than 10 hp and won the second suit. The court again directed the FWS to issue new regulations. The new regulations were issued 7 September, allowing outboard motors 10 hp or less until 31 December. Waterskiing was prohibited. On 23 April 1979 the following regulations were published: Motorless boats and boats with electric motors were allowed on the South Sump from 15 June through 31 December, boats with outboard motors no larger than 10 hp were allowed 1 August through 31 December. Wildlife disturbance under these regulations has been greatly reduced. These regulations, with minor changes are still in effect today.

The Refuge Recreation Act was the basis of the lawsuits by the DOW against the FWS. The following were the major points made in the court's decision of 14 July. The Secretary of the Interior must determine "that such use is incidental to, compatible with and does not interfere with the primary purpose of the refuge" (U.S. District Court, District of Columbia 1978:9). Allowing a recreational use and afterward determining whether that use is harmful to wildlife cannot be allowed. The determination must be made first. Secondly, "the Refuge Recreation Act does not permit the Secretary to weigh or balance economic, political, or recreational interests against the primary purpose of the refuge" (U.S. District Court, District of Columbia. 1978:9) Finally, past use has no bearing on current decisions for recreational use.

Neither poor administration of the refuge in the past, nor prior interferences with its primary purposes, nor past recreational uses, nor deterioration of its wildlife resource since its establishment, nor administrative custom nor tradition alters the statutory standard. The Refuge Recreation Act permits recreational use only when it will not interfere with the primary purpose for which the refuge 'was established.' The prior operation of the refuge in a manner inconsistent with that purpose does not change the base point for applying the statute's standard. Past recreation use is irrelevant to the statutory standard except insofar as deterioration of the wildlife resource from prior recreational uses serves to increase the need to protect, enhance and preserve the resource (U.S. District Court, District of Columbia. 1978:10).

The first test of the Refuge Recreation Act set some important precedents for lands managed by the FWS for wildlife. The Act and court decision provided some very strong protection for wildlife from incompatible recreational pressures on NWRs.

The FWS will continue to accommodate recreational use on NWRs when compatible with wildlife objectives. As at Ruby Lake NWR, the Refuge Recreation Act will continue to be used to protect wildlife objectives should recreational programs conflict with these objectives.

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Appendix I—Summary of Boating Regulations at Ruby Lake NWR

1981 Motorless boats and boats with electric motors were permitted from 15 June to through 31 December on the entire South Sump. Boats propelled by 10 **1979** horsepower motors or less were allowed on the marsh from 1 August through 31 December. Internal combustion generators prohibited in 1981.

1978 I. Original Regulations

- A. Zone 1—Open year round to boats without motors.
- B. Zone 2—Open to powerboats with no horsepower restrictions from 1 July to 31 December on the east side, 15 July to 31 December on the west side.
- C. Zone 3—Open to powerboats with no horsepower restrictions 1 August to 31 December.

II. Second Set of Regulations

On 29 June the Service was served an order prohibiting the use of motors larger than 10 horsepower. The judge ruled in favor of the plaintiffs and the Service issued regulations. There were no changes in the zoning and motorboats with no horsepower restrictions could be used beginning 1 August. Prior to 1 August motors were restricted to 10 horsepower. These regulations went into effect on 25 July.

III. Third Set of Regulations

On 21 July the Service received another order prohibiting the use of motors larger than 10 horsepower. Again the judge found in favor of the plaintiffs and the Service issued new regulations on 7 September. The zoning was abolished and the whole South Sump was opened to powerboats with motors no larger than 10 horsepower.

- 1977** Boats without motors were allowed throughout the South Sump year round.
to Power boating with no horsepower restrictions was allowed year round in
- 1972** designated areas. Power boating with no horsepower restrictions was allowed through the remainder of the South Sump 1 July through 31 December.
- 1971** Boats without motors were allowed throughout the South Sump year round. Power boating with no horsepower restrictions was allowed year round in designated areas. Power boating with no horsepower restrictions was allowed through the remainder of the South Sump 24 July through 31 December.
- 1970** Boats without motors permitted year round on the entire South Sump. Powerboats with no horsepower restrictions were allowed on the entire South Sump 13 June through 31 December.
- 1969** Boats without motors permitted year round on the entire South Sump. Power boats with no horsepower restrictions were allowed on the entire South Sump 14 June through 31 December.
- 1968** Boats without motors were allowed year round in the South Sump. Power boats with no horsepower restrictions were permitted in the South Sump 15 June through 31 December. Boats without motors were allowed in the dike units 15 June through 31 October.
- 1967** I was unable to locate any records of boating regulations prior to 1968. Some of the earlier regulations may have been tied to fishing seasons.