

Assessment of the Effects of Recreational
Trapping at Squaw Creek National Wildlife Refuge
September 1986

I. Introduction

Squaw Creek National Wildlife Refuge was founded August 23, 1935 by Executive Order 7156 of President Franklin D. Roosevelt. It was established "in order to effectuate further the purposes of the Migratory Bird Conservation Act" and lands were to be used "as a refuge and breeding ground for migratory birds and other wildlife". The Refuge currently encompasses 6,919 acres of which approximately 2,600 acres are wetlands.

The Refuge is situated along the eastern edge of the Missouri River floodplain and is in a major migration corridor for mallard ducks and snow geese. The Refuge also is host to the largest concentration of migrating bald eagles east of the Rocky Mountains with peaks of 200 to 300 eagles being normal.

Public use of the Refuge is currently restricted to wildlife observation along 13 miles of auto tour loop, hiking on several trails, fishing in designated areas, and mushroom hunting during the late spring. Approximately 60,000 visitors use the Refuge facilities each year with the bulk of the visits occurring during fall and spring waterfowl migrations when as many as 500,000 waterfowl may be present.

A deer hunt on the Refuge restricted to historic weapons is planned in the fall of 1987 to be jointly administered by the Fish and Wildlife Service and the Missouri Department of Conservation.

II. History of Trapping on the Refuge

The first Refuge trapping plan was approved in 1950 and was concerned primarily with muskrat, mink, and raccoon, with other species being taken less frequently. From 1950 through the late 1960's trappers were selected by the Refuge manager and their catch was divided based on species with muskrat being 60% permittee and 40% Refuge. Mink were 50% each, and all other species were 100% to the permittee. The early trappers took thousands of muskrats when water management involved maintaining a deep pool all year, a condition conducive to muskrat abundance.

By 1970 changes in Refuge management techniques were drastically changing the trapping situation. The continued dumping of silt laden water into the marsh had a detrimental effect on the habitat, plus modern marsh management practices which called for summer drawdowns and fall refilling were not compatible with muskrat needs.

In 1971 a major blow to the muskrat trapping program occurred when "shortstopping" of waterfowl here was alleged by representatives from southern states. This accusation resulted in a mandate calling draining pools in December to encourage waterfowl migration, a practice which practically eliminated a muskrat population worthwhile trapping. This decline, plus personnel changes ended muskrat trapping as a management program by 1973.

III. Fur Resources

Peak Population of Furbearers by Year

	1982	1983	1984	1985
Muskrat	1,500	1,700	850	800
Mink	75	75	50	50
Beaver	100	50	50	50
Raccoon	500	500	600	600
Coyote	10	15	15	15
Red Fox	20	10	10	10
Opossum	250	250	200	200
Skunk	25	15	10	10

In 1979 the Refuge South Pool was divided by a dike into Eagle Pool (900 acres) and Pelican Pool (600 acres) to facilitate management. With two large pools, one could be drawn down each summer to encourage growth of moist soil type annual grasses while the other was held high on a rotation basis. This type management provided muskrats and other semi-aquatic mammals with a means of survival by simply moving to the flooded pool when water became too shallow in the drained pool. The populations of mink, muskrats and beavers have consequently remained high and relatively stable in recent years. Other than marsh habitat, few changes have occurred that would affect terrestrial mammals. The high fur prices of the early 1980's reduced populations to some degree but did not affect the animals remaining on the Refuge.

The current management strategy of maintaining a great diversity of habitat for a great diversity of species has resulted in high populations of furbearers which occur either in the marsh or in the interface zones where different ecosystems converge.

It is anticipated that current management strategy will continue and populations will remain stable barring occurrence of disease or adverse weather conditions.

IV. Demand for Recreational Trapping

This Refuge is situated in a rural agricultural area of low population. The nearest town, Mound City, has a population of 1,447, and the entire county is less than 10,000 population. Although located within 150 miles of several major cities including Omaha, Nebraska and Kansas City, Missouri, it is apparent that demand for trapping would be from local citizens who would be near enough to operate a trapline on a daily basis as required by law.

Fur prices fluctuate greatly from year to year but recreational trappers would, in some cases, not be motivated by fur prices so much as by aesthetic reasons. There should be no lack of interest or participation in trapping on the Refuge.

V. Control of Nuisance Species

Several species would be considered to be detrimental to current Refuge objectives based on their good preferences or habits. Muskrats and beaver are both furrowing mammals with dikes providing handy areas for this objectional behavior. Mink and fox are predators on waterfowl while skunks and opossums are waterfowl egg eaters. These habits are not compatible with Refuge objectives and are addressed in several possible ways.

As stated before, muskrats are controlled by water level manipulation at present. Mink population levels seem to be tied to muskrat abundance, possibly due to their dependence on muskrats as a prey species in winter. Beaver numbers are normally low and nuisance animals are controlled by trapping or shooting by Refuge staff at the present time. Other species are not directly controlled on the Refuge as there is abundant food other than waterfowl and off-Refuge control seems to keep these wide-roaming terrestrial mammals in check.

VI. Discussion

The pelts of terrestrial furbearers are prime from about mid-November through the end of December. Semi-aquatic furbearers are prime from mid-November through mid-March. Furbearers trapped outside these dates would not provide income to cover expenses so a trapping program would, of necessity, be planned between mid-November and mid-March.

Missouri law restricts use of killer traps for land sets so the leg-hold trap is the only feasible set that could be used for capture of terrestrial furbearers. Semi-aquatic furbearers may easily be taken by both killer traps and leghold traps in drowning sets.

Based on productivity of semi-aquatic furbearers, it is estimated that 75% of a population could be removed each year without deterioration of the resource from year to year. The terrestrial furbearers are more difficult to trap and no limit on trapping would be appropriate to sustain a viable population from year to year.

State law requires trappers to check their sets daily and most trappers are employed in a regular full-time job. Therefore, they rise before daylight to run their trapline, reset sprung traps and move unproductive sets. In good muskrat habitat, traps are also run in the evening after work which is, for some, after dark.

VI. The Sting

As stated in the previous chapter, trapping season occurs from mid-November to mid-March. Trappers run their traps once and sometimes twice a day. Most muskrat and beaver sets are along dikes where they congregate.

Refuge records indicate that waterfowl numbers normally peak about mid-November when about $\frac{1}{2}$ million may be utilizing Refuge impoundments.

The spring migration is not nearly so spectacular but the peak occurs about mid-March. The spring waterfowl objective is 2.7 million use-days and the fall objective is 21.6 million use-days.

Bald eagles are a major consideration in any program initiated on the Refuge with an average peak of nearly 200 birds which occurs in early December. The spring peak occurs in late February. Bald eagle objectives are 1,900 use-days in spring and 6,900 use-days in the fall.

A properly managed trapping program would be no direct threat to either eagles or waterfowl because traps would either be unavailable or unattractive to these species which both feed by sight and feel rather than scent. But the indirect effects of disturbance to eagles and waterfowl by trappers moving about the Refuge to check their sets along dikes and other areas would constitute an insurmountable problem and each situation should be considered independently.

Muskrats are a nuisance due to their nature of burrowing into dikes. But their habit of constructing "lodges" from mud and vegetation throughout the marsh provides structure which is very beneficial for both waterfowl and eagles which use these lodges for loafing sites. They are also important to eagles as perches to hunt for prey and to feed on victims.

Waterfowl roost on the Refuge in large numbers and many are situated near dikes. When disturbed, they flush creating a wave effect that may affect hundreds of thousands of waterfowl. Each flush robs energy necessary for migration and nesting.

Bald Eagles roost in several areas, moving out at daylight to remote dikes where sick and injured waterfowl congregate. There they capture and kill their morning food and eat with little disturbance, a necessary condition for birds with very little tolerance of humans. The conflict is obvious.

Terrestrial furbearers may be trapped using leghold traps in areas away from both eagles and waterfowl. A restriction on trappers that would require them to check traps only during daylight hours would minimize disturbance to eagles and waterfowl, but the greatest influx of visitors occurs along with the peak numbers of waterfowl and eagles. Therefore, another conflict would be created between Refuge visitors and trappers.

VII. Conclusion and Recommendation

Furbearers are prime from mid-November through mid-March. Waterfowl, bald eagles and Refuge visitors all peak during these same dates creating conflicts.

It is concluded that at the present time, under present conditions, recreational trapping is not feasible at Squaw Creek National Wildlife Refuge. It is recommended that initiation of recreational trapping be delayed until conditions change, at which time reevaluation will be necessary.

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