# STATUS AND CONTROL OF NUTRIA IN CALIFORNIA

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ABSTRACT: Although feral nutria (Myocastor coypus) have been present in California since the mid-1940's, they are quite scarce and at present are causing little or no agricultural damage. Present state regulations and pest detection activities will probably prevent them from becoming a serious economic pest. Should control ever become necessary, studies in other areas indicate that shooting, trapping, and baiting with zinc phosphide should be effective.

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The nutria, native to South America, was introduced into the United States in 1899 for fur farming. Feral nutria are now found in many states and are common in the Gulf Coast region. There, the sale of their fur and meat is economically important; at the same time, however, they are classified as a pest, since they sometimes cause serious economic damage to agricultural crops.

If California were going to have a similar nutria problem, it should have occurred by now. Howard (1953) reported that feral nutria were established in Stanislaus County, California, in the mid-1940's, as a result of escapes from a farm near Oakdale; an ample period for them to build up large populations if conditions were favorable.

In Louisiana, nutria reproduce at 6 months of age, producing four to five young per litter, and probably two litters per year (Harris 1956). In a study of nutria population dynamics in Europe, Hillbricht and Ryszkowski (1961) released 445 nutria into a 474-acre fenced marsh in the spring of 1956 and removed 1832 individuals in the fall of 1957. In the spring of 1958, they released 1000 nutria into the area and removed 1800 that fall. With this reproductive potential, large populations could have developed quickly; yet, County Agricultural Commissioners have destroyed only 300 feral nutria in California since 1948 (D.O. Clark, pers. comm.). We are aware of no substantiated reports of feral nutria in the state in recent years. In 1971, there was one report of feral nutria in the San Joaquin River, near Fresno, but a search by State, County, and Federal personnel revealed no sign of nutria.

Since 1958, the Agricultural Code of the State of California has required a permit for possession of live nutria. In 1958, 324 permits were issued, but the number has declined steadily until only two were issued during fiscal year 1971. The Agricultural Code requires permit-holders to file an annual report with the County Agricultural Commissioner and to document how the nutria are disposed of. It also stipulates that "Every person that possesses any nutria shall provide for the care of such animal in a pen that shall preclude the escape of the nutria" (Calif. Ag. Code, C3, Art. 3, para. 11351). These regulations have undoubtedly been instrumental in preventing the establishment of large feral nutria populations in California. Some populations may exist, but if so, they are causing little or no damage to agricultural crops at the present time.

## NUTRIA DAMAGE AND CONTROL

If nutria should ever become an economic pest in California, how could they be recognized, what kind of damage would they cause, and how could they be dealt with? While we have not studied nutria in California, we and some of our co-workers conducted a research program in Louisiana and Texas from 1963 to 1969 to develop methods of controlling nutria damage. During the mid-1960's, nutria were so common in southern Louisiana that it was not unusual to see them along major highways, either basking in the sun or as road kills. In addition, they were causing serious damage to sugarcane and rice crops. However, population levels spontaneously declined sharply about 1967. Our annual nutria damage survey in sugarcane indicates there has been relatively little nutria damage to sugarcane over the last 4 years. Much of the information obtained in these and similar studies should be applicable to California nutria and is summarized here.

## Recognizing Nutria

It is quite difficult for an inexperienced individual to identify a nutria. During daylight, out of the water, they may be identified by their general "rodent" appearance and sheer size. In the water, nutria are difficult to distinguish from a muskrat or beaver. Nutria (7-12 lb) are larger than muskrats (1-4 lb) but not as large as beaver (40-70 lb); the largest feral nutria we trapped weighed approximately 22 lb. Color is a poor criterion, since fur farm nutria were bred for various color strains and feral nutria still display great variety. However, nutria may be easily differentiated by their round tails, with bristles; beaver have large flat tails; and muskrats have vertically flattened tails. Nutria droppings are also very characteristic; they are oblong, deeply grooved longitudinally, and 1-3 inches long. Where there is a large resident population, droppings will be very evident, especially on flat, firm surfaces of dams, pathways, and banks.

## Nutria Damage

Nutria are semi-aquatic and tend to feed intensively in relatively small areas; they generally do the most damage near water (Hillbricht and Ryszkowski 1961; Evans 1970). In our annual nutria damage survey, we examined edges of sugarcane fields adjacent to marshes, bayous, and drainage ditches in southern Louisiana. Plots were checked in the fall, just prior to harvest. During the past 4 years, an average of 30 percent of the plots were damaged annually, with 11 percent of the total area surveyed damaged. Because this study was designed to measure damage in the most susceptible areas, the level of damage is not representative of all sugarcane in the area, but rather provides a base for determining trends in nutria damage to sugarcane.

In California, the most serious damage is likely to result from their burrowing activity in ditch banks and levee systems. Nutria may enlarge other animals' burrows or construct extensive burrow systems of their own. Neighboring burrows are often connected, and the end of the burrow system may be 30 ft or more from the bank entrance. With surface traffic or rains, these systems could cave in and cause depressions and washouts leading to loss of water, erosion, and siltation.

In crops with tall stalks, such as corn or sugarcane, nutria clip stalks near the base, killing the plants or causing the stalks to lodge. They generally kill or injure far more plants in this way than they eat. In low-growing crops, such as alfalfa, rice, ryegrass, or other pasture grasses, nutria will graze plants to the ground. In this case, damage is similar in appearance to jackrabbit damage. However, jackrabbits usually feed where crops border drier unfarmed areas, whereas nutria usually feed along waterways.

If nutria are suspected because of damage in an area, baiting may be used to determine their presence. A 4 x 4-ft plywood raft with styrofoam floats, anchored in slow-moving water and baited with fresh carrots, makes a good census device (Evans 1970). Nutria attracted to the raft will sit on it to eat the carrots, and may thus be observed. They will also defecate on the raft, leaving a readily identified sign. Unfortunately, there are many instances in California where rafts cannot be used because of fast-moving water or temporary waterways. In these cases, bait stations may simply be cleared areas located along waterways or beside damaged crop areas.

## Control

In good nutria habitat (marsh or swamp) with high populations, control may be difficult and costly. Ryszkowski (1966) pointed out that when individuals are removed from an area, their places are soon taken by individuals from outside the controlled area.

Talbert (1962) described what are probably the best methods for nutria control in California--trapping and shooting. He suggests using a No. 3 trap, but Evans (1970) pointed out that a less expensive No. 2 will do the job, and that trap success is increased by prebaiting an area several nights before trapping. In fact, prebaiting is a must for any kind of nutria control. Once animals are conditioned to using the bait stations, they may be trapped, shot, or poisoned. Trapping may be done with either steel traps or live traps. Steel traps may be placed an inch or two underwater on the edge of regular feeding areas, at burrow entrances, near surface nesting sites, and in runs along the bank. Live traps may be set in similar locations, and trapping success may be enhanced by baiting with carrots. Live traps measuring 9 x 9 x 32 inches are quite effective for nutria; the double-door traps are probably the best, especially for trapping in runs.

Trapping is useful for small populations but may not be feasible if large populations should develop. Norris (1967) described a British campaign to reduce nutria by live-trapping in a 2645-square-mile area of Norfolk and Suffolk Counties. Three years' trapping, totaling 601,294 trap nights, resulted in the capture of 40,294 nutria at a cost equivalent to about $197,000, or $4.90 per animal. In addition to the trapped animals, 80 to 90 percent of the total nutria population in this area died as a result of a severe winter in 1963. Yet, even with this population reduction, Norris concluded that a system of regular patrolling and trapping would still be necessary to prevent appreciable increases.

Thus, if large-scale control measures are needed, toxicants may be the only economical means available. Zinc phosphide is very effective, and relatively safe, and is registered for control of nutria. Evans (1970) gives a complete description of an effective zinc phosphide baiting technique. In brief, the bait consists of fresh cut carrots (approximately 2-inch lengths) coated with 0.5 percent corn oil and 0.75 percent zinc phosphide (by weight). If a color additive is desired, 0.1 percent lampblack may be added. As we have already pointed out, prebaiting with fresh carrots is important. If possible, floating rafts should be used, for effectiveness and safety to other species. If rafts are impractical, baits should be placed along active nutria runs, around den sites, near surface nesting sites, or on the borders of damaged crops.

## CONCLUSIONS

To sum up, there is no evidence that sizable populations of feral nutria occur in California. The Agricultural Code's permit system, along with the pest detection operations of the California Department of Agriculture, will probably continue to keep populations low. However, if nutria should ever increase to pest proportions, several methods of controlling them are available.

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