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Thomas G. Moore
University of California - Davis

Desley A. Whisson
University of California - Davis

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POTENTIAL RISKS ASSOCIATED WITH THE LEGALIZATION OF EXOTIC PREDATORS SUCH AS THE FERRET (*MUSTELA PUTORIUS FURO*) IN CALIFORNIA

THOMAS G. MOORE, and **DESLEY A. WHISSON**, Department of Wildlife, Fish, and Conservation Biology, University of California, One Shields Avenue, Davis, California 95616.

ABSTRACT: The interest in possessing ferrets as pets has given rise to controversy between the "rights" of the individual to own the pet of their choice and the concerns for protection of wildlife in California. An overview of the legislative history in California illustrates the state's attempts at protecting native wildlife species from exotic wild birds and animals. Concerns as to the potential threats associated with the legalization of ferrets in California are warranted in light of the wildlife damage resulting from the deliberate introduction of ferrets in New Zealand and the non-native red fox in California. A framework to assess risks involved with introducing non-native species that may impact native wildlife is needed.

KEY WORDS: ferret, *Mustela putorius furo*, risk assessment, wildlife damage

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INTRODUCTION

There has been a long history of introduced species establishing in California through both accidental and deliberate introductions. Deliberate introductions have historically occurred with the assistance of acclimatization societies and persons involved in fishing, hunting, or trapping. The diverse topography found in California has contributed to the rich variety of native wildlife. However, greater than 20% of amphibian, reptile, bird, and mammal species are now federally and state listed endangered and threatened species. California's threatened, endangered and endemic species could be impacted by an unwise introduction of another exotic carnivore.

Over the last few years there has been a strong lobbying effort by ferret enthusiasts and the pet industry to legalize ownership of the ferret (*Mustela putorius furo*) in California. California and Hawaii are the only states that completely restrict the ownership of ferrets as pets. Numerous other states have legislated local prohibitions of ownership of the ferret. The desire to own a ferret as a pet has given rise to a controversy over whether an individual has a right to own the pet of their choice (California Domestic Ferret Association 1995; Lynch 1996) and the concerns for protection of wildlife, agricultural interests, and human safety in California. A decision to legalize an exotic species should be based on a scientific assessment of the potential risks. An overview of the legislative history aimed at protecting the integrity of the state's wildlife interests can assist in decisions affecting the legal status of the ferret. The authors' objective is to show that there is a potential risk associated with the legalization of ferrets in California and a need for a risk assessment. Secondly, an appraisal of the current process involved in the legalization of the ferret highlights the need for a framework for decisions regarding exotic introductions.

HISTORY

The popularization of the ferret as an exotic pet may have begun with the 1982 movie "The Beastmaster" in which the hero owned two ferrets (Hitchcock 1994). With little or no prohibition in 46 other states, the ferret increased in popularity as a pet. Ferret enthusiasts claimed that by 1991 there were approximately six million ferrets nationwide (Weisser 1991). Organized ferret groups began to lobby for removal of restrictions in the states that prohibited legal ownership.

In California, ferrets were originally prohibited by California Statutes of 1933 under Chapter 76, Section 1 which read, "It is unlawful to import or transport into this state, except as provided under Section 2, any wild bird or animal of the following species . . . weasel, *Mustela nivalis*: stoat, *Mustela erminae*: ferret, *Mustela furo* . . . and such other species of wild bird or animal which may be designated by the Fish and Game Commission when such species are proved to be undesirable and a menace to the native wildlife or to the agricultural interests of the state." Further, Section 7 states that "a 'wild bird or animal' as used in this act means any bird of the class aves or animal of the class mammalia or the phylum mollusca or of the class crustacea which is either not normally domesticated, or not normally native within the state." As rules and regulations governing importation of wild birds and animals were amended the definition of "wild animal" was altered. In 1974, the definition of "wild animal" was changed to be any animal . . . of the class Mammalia (mammals) . . . which is not normally domesticated in this state as determined by the commission (California Department of Fish and Game Code of Regulations, Title 14, Subdivision 3, Chapter 3, Section 671—Importation, Transportation and Possession of Wild Animals).

Despite these restrictions, private citizens could obtain permits to possess neutered male ferrets under a Fish and Game Commission exemption for neutered males of many wildlife species. The Commission eventually viewed the exemption as a loophole for the importation of illegal exotic wildlife into the state and a threat to the integrity of the state's wildlife and agricultural interests. Few agency employees were specialized enough to ascertain whether an animal had been neutered and biologists found that intact males were entering the state. These violations prompted a policy change by the Fish and Game

Commission. In 1986, males of all wild animal species including ferrets, lost their exemption status and all permits were denied (Weisser 1991). All neutered males previously owned legally in California were grandfathered in.

Ferret proponents began to actively campaign for a change in the legal status of the ferret through the legislature, claiming ferrets were not a threat to wildlife and were a domestic species that should enjoy legal status in California. In 1994, a California Legislature Assembly bill (AB No. 2497) "Wild animals: domestic ferrets" was introduced by Assembly Member Goldsmith. The bill would allow domestic ferrets "to be owned as pets without a permit as long as the owner of the ferret maintains, and can produce documentation showing that the ferret has been vaccinated." The existing language of section 2118 would be changed to remove the phrase that the ferret was a "menace to native wildlife, the agricultural interests of the state, or the public health and safety . . ." The bill failed as did a similar Senate bill (SB 55) which was submitted at a later date by Senator Kopp. SB55 failed on two attempts to pass the Senate Committee on Natural Resources and Wildlife by January 9, 1996.

Early in 1997, Assemblyman Goldsmith, with a series of co-authors, introduced another bill AB 363. The bill was opposed by a coalition of California organizations comprised of the National Audubon Society, Sierra Club California, California League of Conservation Voters, Planning and Conservation League, California Waterfowl Association, and California Farm Bureau Federation. This coalition recommended a risk assessment be undertaken prior to legalization. The bill was amended to issue licenses to all ferrets currently in California. Ferret owners would have until June 30, 1998 to license their ferrets. Monies generated from licenses would fund a two-year study to assess the risk of legalization of ferrets on wildlife, public health, and agriculture. The bill would also authorize the Department of Fish and Game to eliminate feral ferret colonies when located (Legislative Counsel's Digest 1997). In July 1997, the Senate Natural Resources and Wildlife Committee voted 7-1 to pass the bill through the committee. A delay occurred shortly after the committee vote and the bill went "on call." The bill did not pass to the Senate floor in the required time.

In addition to their efforts to change legislation, ferret proponents have also appealed directly to the Fish and Game Commission to lift the restrictions on possession of ferrets in California. Their appeals were based on their opinion that ferrets were no threat to wildlife and, secondly, that ferrets were domestic animals that should be free from restrictions placed on introduced wild animals. All efforts to change the status of the ferret through these appeals to the commission were unsuccessful. Consequently, in December 1996, Marshall Farms, USA, Inc. filed a lawsuit in Superior Court in San Diego County against the California State Fish and Game Commission. The lawsuit sought to command the Commission to "fulfill its mandatory statutory duty to determine whether the ferret is an animal that is 'normally domesticated' in the State of California." A recent decision in Superior Court in San Diego County found on behalf of Marshall Farms (R. Christenson, pers comm). The court has instructed the Fish and Game Commission to adopt new regulations for the ferret. An appeal process is underway, and action by the Fish and Game Commission is unlikely until such time as an appeal process is complete.

RISK ASSESSMENT

There is considerable uncertainty regarding potential risks to native wildlife associated with the legalization of the ferret in California. Ferret proponents claim that escaped or released ferrets would be unable to survive in the wild. Several factors including a high risk of predation and the condition of hyperestrogenism in the female have been cited (California Domestic Ferret Association 1995; Lynch 1996). However, there are many documented incidences of ferrets surviving or establishing populations in the wild, and negatively impacting wildlife. Ferrets survive in the presence of other mammalian predators like the red fox in England where escaped ferrets have become well established in the northern portions of the country (Macdonald 1995). Feral ferret populations have become established in the wild on the Scottish islands of Arran and Bute, on the Isle of Man in the Irish Sea, and on the Isle of Anglesey off the Coast of north Wales, as well as in Renfrewshire and parts of Yorkshire (Walton 1977). An isolated population of ferrets was reported existing to the south of Launceston in Tasmania, Australia, but it is uncertain if the population persists today (Bomford 1991; Wilson et al. 1992). Ferrets also have been documented from the 1970s into the early 1980s on San Juan Island in Washington State (Weisbrod et al. 1976; Stevens 1975, 1982,). Healthy ferrets have been trapped on Revillagigedo Island and Joe Island from 1985 to 1986 off the Southern coast of Alaska (Alaska Department of Fish and Game, pers. comm.).

The largest feral population of ferrets occurs in New Zealand (Lavers and Clapperton 1990). The large number of wild ferrets there resulted from numerous deliberate releases of ferrets, European polecats (*Mustela putorius putorius*) and stoats (*Mustela erminae*) that were brought to New Zealand to control the European rabbit in the 1880s (Druett 1983; Lavers and Clapperton 1990). Ferrets were originally released into pasture land of New Zealand, spread into forested areas and were regarded as pests by 1900 (Druett 1983; Lavers and Clapperton 1990). Together with feral cats and rats, predation by these introduced mammals has been the major cause of declines in threatened and endangered species including black stilts (*Himantopus novaezelandiae*) (Murray 1992), yellow-eyed penguins (*Megadyptes antipodes*) (Darby and Seddon 1990), and the royal albatross (*Diomedea epomophora*) (Lavers and Clapperton 1990). Although ferrets prey largely on lagomorphs, diet analysis indicates that ferrets are "opportunistic generalist predators" (Smith et al. 1995). Even when rabbits constituted the largest contribution by weight in the ferrets' diet, there were 18 different bird species including both ground and arboreal nesting birds, identified in gut contents (Smith et al. 1995). In a grassland surrounding a yellow-eyed penguin colony along the southeastern coast of the South Island of New Zealand, birds were identified in 50% of ferret guts and lagomorphs were found 42% of the time (Alterio and Moller 1997). The primary bird species eaten were sooty

shearwaters (*Puffinus griseus*) and little blue penguins (*Eudyptula minor*).

A more detailed account of damage caused by ferrets to native wildlife in New Zealand has come from recent studies assessing impacts that rabbit predators may have on threatened species following control of rabbits (Smith et al. 1995; Norbury and Murphy 1996; Norbury and McGlinchy 1996; Alterio and Moller 1996; Norbury et al. 1998). Movement studies indicate that ferrets may expand their home range from 85 ha to 230 ha, or disperse up to 4.3 km from the center of their range when 99% of rabbits are removed from an area (Norbury et al. 1998). The overall effect on prey switching is unknown, but early indications are that in semi-arid tussock grasslands ferrets would shift to increase predation on lizards and invertebrates and in semi-improved pastures, ferrets would increase their predation on birds (Norbury and Murphy 1996).

Concern about threats from new introductions of exotic animals in California originates from wildlife damage resulting from the introduction of other exotic animals like the non-native red fox. The introduction of the non-native red fox into California during the late 1900s (Grinnel et al. 1937) has had negative impacts on several threatened and endangered bird species (Department of Fish and Game 1994). The non-native red fox were escapees or deliberately released from fur farms located in the Central Valley. They spread across the Central Valley and became established in much of the coastal areas in the last two decades from the San Francisco Bay south to San Diego (Burkett and Lewis 1992). It was not until the 1970s that biologists became aware of the damage the non-native red fox was inflicting on the ground nesting birds along the coast (Burkett and Lewis 1992). Non-native red fox have been implicated in population declines of shorebird, marsh bird, mammal, reptile and amphibians in several areas like the El Segundo Dunes, San Francisco Bay National Wildlife Area, Monterey Bay, Seal Beach National Wildlife Refuge and the Ballona Wetlands (Department of Fish and Game 1994).

The red fox has devastated populations of federally listed species such as the light-footed clapper rail (*Rallus longirostris levipes*), California clapper rail (*Rallus longirostris obsoletus*), California Least tern (*Sterna antillarum browni*), and snowy plover (*Charadrius alexandrinus*) (Theylander 1994). These birds are threatened by non-native predators mostly because they nest in close proximity to urban and suburban areas. Many of these areas are devoid of large predators, like the coyote. Just as the non-native red fox can survive in parks, golf courses, coastal marshes and beach areas that are surrounded by urban areas (Burkett and Lewis 1992; Golightly et al. 1994), unwanted or escaped ferrets could potentially survive in these areas and pose additional threats to California's threatened and endangered species. Similarly, offshore islands supporting a diversity of native wildlife could potentially provide habitat for ferrets.

There is a tremendous need for a legislative framework for making decisions in the legalization of exotic species. Protocols should be established to evaluate the cost and benefits each introduction may have on society. In light of the difficulty in assessing costs and benefits from a species introduction, a conservative approach is warranted (Bomford 1991). The damage to wildlife caused by ferrets in New Zealand and the non-native red fox in California should be an alert to the possibility that released ferrets have the potential to threaten endemic species (listed or otherwise) in California. The perceived values of any introduction depends on the interest group that may benefit from such an introduction. Many species of exotic pets continue to be imported, with few regulations in most countries, even though introductions of exotic species have had disastrous impacts (Brown 1989).

Deliberate and accidental introductions are occurring around the globe as a part of human population growth, development and commerce. Future introductions of exotic animals should be based on several criteria (Sjoberg and Hokkanen 1996):

1. It should carry a substantial economic or social benefit to the community.
2. It should not be harmful to humans.
3. The species
   a) is not likely to become established in the wild, or
   b) should not have an adverse ecological impact, or
   c) should be possible to eradicate.
4. If the species does not cause some adverse impact, its benefits should outweigh its actual and potential costs.

Legalization of the ferret in California continues to be a controversial issue with strong emotional arguments for legalization. However, legislation should be based on scientific rather than emotional arguments. There should be some framework with which legislators can make a sound decision on legalization of exotic animals. California legislatures might follow the example of Australia (Bomford 1991) and develop a risk assessment procedure to evaluate the risks and benefits of planned introductions of exotic species. If California is to maintain the largest number of endemic species in the country, it would be prudent to complete such a risk assessment on ferrets prior to their legalization.

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