

KODIAK RIVER OTTER

Lutra canadensis kodiakensis Goldman, 1935
(Mustelidae)

Global rank G5T4 (18Nov1996)

State rank S4 (5May1997)

State rank reasons

Insular mammal, endemic to Alaska. Does not inhabit areas adjacent to clearcut areas, regardless of presence of good foraging sites nearby (logging occurs on islands the otter inhabits). Not very fragile; trend and abundance information unknown. Additional threat information may change rank.

Taxonomy

Although subspecific distinction was disputed by Rausch (1969), *L. c. kodiakensis* has since been accepted by van Zyll de Jong (1972) and is listed as one of 7 subspecies of northern river otters in North America by Hall (1981). This subspecies is distinguished by its slightly smaller size than most other subspecies and characteristics of its skull shape and dentition (Fagen 1986).

Van Zyll de Jong (1987) used the generic name *Lontra* for New World otters; acceptance has been mixed, however, and other taxonomic guides use *Lutra* (Rice 1998). Patterns of genetic variation do not concur with current subspecific designations and numerous translocations have crossed subspecies' range boundaries; therefore, the use of subspecific names is not actually meaningful in many cases (Serfass et al. 1998).

General description

This mustelid has a long, streamlined body and short, powerful legs with nonretractile claws and interdigital webbing. Hind feet heel pads each have 4 small, rough proturbances for increased traction on slippery surfaces, and the tail is flattened and tapered. Pelt consists of short, dense underfur protected by longer, stiff, glossy guard hairs, and is a rich dark brown to black color dorsally and light brown to gray color ventrally. Air trapped in the fur acts as insulation when the otter is submerged, and frequent grooming retains the waterproof and insulative qualities of the fur (Melquist and Dronkert 1987). Males are larger than females (approximately 17% heavier on average; Melquist and Hornocker 1983).

Length (cm) 130

Weight (kg) 13



Reproduction

Breeding in *Lutra canadensis* occurs in late winter or early spring, and implantation of fertilized ova is delayed 8 months or more; gestation, including delayed implantation, lasts 9-12 months (Toweill and Tabor 1982). Births peak in late winter-early spring; parturition dates may not be closely synchronized within a given population. Litter size is 1-6 (average 2-4); 1 litter per year. Young may first enter water at about 7 weeks, are weaned at about 3 months, and stay with their mother for about a year. Male may rejoin family after young leave the den. Females breed for the first time at 2 years. Males become sexually mature at 2 years, but may not breed successfully until 5-7 years old (Toweill and Tabor 1982, Melquist and Dronkert 1987).

Ecology

Lutra canadensis' home range is typically linear; 20-30 miles for a pair or male; less for females with young (Jackson 1961). May hunt throughout as much as 80-100 km of stream during the course of one year. In coastal Alaska, summer home range size averaged around 20 km of shoreline in males, 10 km in females, with ranges twice as large in oil spill areas (Bowyer et al. 1995). Population density of 1 otter/2.2 miles has been recorded in Michigan (Baker 1983). In Idaho, density was one family group and 1-3 subadults or nonbreeding adults per 15 km of waterway, plus one breeding adult male for each 20-30 km of waterway (Melquist and Hornocker 1979 in Toweill and Tabor 1982). Density in coastal areas of the Gulf of Alaska was 0.30-0.85 otters/km of shoreline (Testa et al. 1994, Bowyer et al. 1995).

Harvested for fur. From 1970-1976, U.S. annual harvest ranged from 11,000-19,000; Canadian harvest was about 15,000-18,000 for the same period (Toweill and Tabor 1982). U.S. harvest was highest in Louisiana (about 7,500 pelts annually) in the 1970s and early 1980s (Shirley et al. 1988). Besides humans, river otters have few

natural predators; bobcats (*Felis rufus*), coyotes (*Canis latrans*), foxes, and wolves (*Canis lupus*) have been reported to kill otters rarely and Bald Eagles (*Haliaeetus leucocephalus*), salmon sharks (*Lamna ditropis*) and killer whales (*Orcinus orca*) are also possible predators (Toweill and Tabor 1982, Melquist and Dronkert 1987, Blundell 2001).

Food

Lutra canadensis feeds opportunistically on aquatic animals, particularly fishes (usually in proportion to the availability of fish species, and especially slow-moving, mid-size species) including suckers (*Catostomus* spp.), redhorses (*Moxostoma* spp.), squawfishes (*Ptychocheilus* spp.) and also trout (*Salmo* spp.) and salmon (*Oncorhynchus* spp.; Toweill and Tabor 1982). Frogs, crayfish, mussels, insects, birds and small mammals are also included in the river otter's diet. In coastal waters eats marine species (Bowyer et al. 1995). Commonly preys on nesting seabirds in some areas (e.g., Alaska islands).

Phenology

Active in winter, even in deep fresh snow. May be active at any time of day. In Idaho, most active from dawn to midmorning and in the evening (see Toweill and Tabor 1982).

Habitat

River otters living in inland North America may utilize any freshwater lake, pond, river or creek containing food items, as well as associated riparian zones. Coastal river otters such as *L. c. kodiacensis*, however, have been shown to utilize a narrow zone of timbered habitat adjacent to the coast, moving inland only occasionally (Kruuk and Hewson 1978, Larsen 1983, Woolington 1984). Coastal areas are highly productive habitat for northern river otters due to the wide variety and high abundance of potential food items, predominantly fish and other aquatic animals (Larsen 1984).

Reid et al. (1994) found that river otters in boreal Alberta exhibited strong annual and seasonal habitat selection based on shoreline morphology and substrate. In southeastern Alaska, river otters avoided clearcuts of 5-20 years in age, and preferred habitats located adjacent to beaches with convex shorelines, short intertidal lengths and bedrock substrate (Larsen 1983). Home (1982) reported that 3 of 4 family groups observed in Glacier Bay were associated with old-growth forest at least 180 years old, and 9 of 12

family groups used old-growth hemlock (*Tsuga* spp.) stands.

River otters do not dig their own burrows, instead making use of existing burrow systems dug by other semi-aquatic mammals such as beaver (*Castor canadensis*; Liers 1951, Toweill and Tabor 1982), or cavities under live trees or snags (Larsen 1983). Larsen (1983) found that cavities under snags were used as burrows more than any other structure by river otters studied in southeastern Alaska, with the highest density of burrows located in old-growth forest.

Winter habitat availability may be a key factor in determining the annual carrying capacity for river otters in a given area, because ice cover and low temperatures may severely limit foraging opportunities and abundance of adequate shelter (Reid et al. 1994).

Although coastal river otters usually confine their activity to within 100 ft of the shoreline for most of the year, female river otters may move inland to locate natal denning sites from May through July, generally not moving more than 0.5 mile from water (Larsen 1983, Woolington 1984). In old growth habitats natal dens occurred on well-drained sites near streams, which were used as corridors for travel between the den site and foraging areas on the coastline.

State range

Restricted to the Kodiak Islands group, located in the Gulf of Alaska south of the Kenai Peninsula. The archipelago consists of 13 islands and many islets, with a total area of about 5,000 square miles. Kodiak Island, the largest of the group, has an area of 3,588 square miles. *L. c. kodiacensis* has been observed throughout the Kodiak Island group (Klinkhart and Driskell 1976).

State abundance

Abundance and trends are unknown for the Kodiak river otter, although river otters in general are relatively abundant across most of Canada and Alaska (Toweill and Tabor 1982). Clark (1958) stated that *L. c. kodiacensis* was "often seen in salt water and is found in every part of the [Kodiak] island group" and appeared to "maintain its numbers with little difficulty" despite trapping. Feuer (1958) noted the Kodiak river otter in the Karluk River on Kodiak Island and stated that the otters were seen "from time to time in the river and in one of its small tributaries." Densities of river otters in coastal southeastern Alaska have

been estimated at 1 otter/1.28 mi of coastline (Home 1982), 1 otter/1.24 mi (Larsen 1983), 1 otter/0.73 mi (Woolington 1984), and 1 otter/0.62 mi (Noll 1988), yielding an average of 1 otter/0.97 mi of coastal shoreline (Suring and Larsen 1991).

State trend

Populations of river otters have been characterized as stable or increasing in Alaska (Endangered Species Scientific Authority 1978), but population trends specifically for the Kodiak river otter are unknown. River otters have declined over the last centuries in North America, with a reduction over about two-thirds of the U.S. (Jenkins 1983).

State protection

Trapping river otter in Alaska requires a trapping license; there is no bag limit within the open season, but pelts must be sealed within 30 days of capture in the unit where they were taken (ADFG 2004). No specific protection for this subspecies is in place.

State threats

Threats to the Kodiak river otter include habitat loss/change due to timber harvest, development and pollution, as well as trapping by humans.

Logging: Larsen (1983) found that river otters living in coastal areas of southeastern Alaska did not use habitat adjacent to clearcut areas regardless of the presence of good foraging areas. Land management scenarios under which large amounts of coastal fringe timber are harvested may adversely impact coastal river otters.

Trapping: Harvest of river otters for their pelts is one of the primary causes of mortality throughout their North American range (Toweill and Tabor 1982). Trapping and shooting were found to be the primary cause of mortality in a southeastern Alaska coastal river otter population (Larsen 1983), with an estimated man-related mortality rate of 9-32% of the population annually. Harvest data from 1978-79 showed the state-wide river otter harvest in Alaska to be the 4th highest in the United States, at 1,900 animals (Jenkins 1983). Data specific to the Kodiak river otter is not known; however, hunting and trapping are not believed to pose a serious threat to river otter populations in Alaska.

Habitat destruction / pollutants: The impact of water pollution and bioaccumulation of toxins in

river otters is poorly known, although these factors are believed to have contributed to the decline of otter populations in parts of inland North America and Sweden (Jenkins 1983). Habitat destruction was the primary cause in the extirpation of northern river otters in nine U.S. states and one Canadian province (Deems and Pursley 1978 cited in Toweill and Tabor 1982). Habitat may be lost through increased acidity of groundwater, development of waterways, declines in water quality or destruction of riparian habitat (Toweill and Tabor 1982). The impact of pollutants on coastal populations of river otters is not known. Contamination from oil spills is a real threat in Alaskan coastal waters, where river otters frequently forage in marine as well as fresh waters.

State research needs

Studies are needed to better understand habitat use and preference by Kodiak river otters, as well as to quantify the possible threat posed by habitat loss, oil pollution and trapper harvest to this population limited to a small area. A better understanding is needed of population dynamics and how factors such as social structure or sex-biased dispersal influences genetic variation and gene flow between populations on Kodiak Island and elsewhere in Alaska (Blundell 2001).

State inventory needs

Surveys are needed to determine population size and trends in the Kodiak Island group.

State conservation and management needs

Determination of the degree of threats to the Kodiak river otter population will help resource managers make future conservation decisions, such as to limit trapper harvest or limit timber harvest in riparian and coastal areas of the Kodiak islands.

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Acknowledgements

State Conservation Status, Element Ecology & Life History

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Reviewer(s):

Life history and global level information were obtained from the on-line database, NatureServe Explorer (www.natureserve.org/explorer). In many cases, life history and global information were updated for this species account by Alaska Natural Heritage Program zoologist, Tracey Gotthardt. All global level modifications will be sent to NatureServe to update the on-line version.
