Northern sea otter, Southwest Alaska DPS

Class: Mammalia
Order: Carnivora

Enhydra lutris kenyoni

Note: Only one subspecies, E. l. kenyoni, occurs in Alaska. Individuals are classified into three Distinct Population Segments (DPS). This assessment focuses on the Southwest Alaska DPS only.

Review Status: Peer-reviewed **Version Date:** 05 April 2018

Conservation Status

NatureServe:	*Agency:*		
G Rank: G4T2T3	ADF&G: Species of Greatest Conservation Need	IUCN: Endangered	Audubon AK:
S Rank: S3	USFWS: Listed Threatened	BLM: Sensitive	

Final Rank

Conservation category: **IX. Blue**

low status and low biological vulnerability and action need

Category	Range	Score
Status	-20 to 20	4
Biological	-50 to 50	-30
Action	-40 to 40	-12

Higher numerical scores denote greater concern

Status - variables measure the trend in a taxon's population status or distribution. Higher status scores denote taxa with known declining trends. Status scores range from -20 (increasing) to 20 (decreasing). **Score**

Population Trend in Alaska (-10 to 10) 2

From the mid 18th to the early 20th century, northern sea otters were nearly extirpated due to overhunting (Muto et al. 2019). After protection measures were put in place, the population recovered somewhat. However, the southwest Alaska DPS has been decreasing since at least the mid-1980s (Doroff et al. 2003; Estes et al. 2005; Federal Register 2005; USFWS 2013b). The population is now considered stable, though it has not recovered yet (Muto et al. 2019).

Distribution Trend in Alaska (-10 to 10) 2

By the early 20th century, northern sea otters were nearly extirpated from Alaska as a result of overharvest (Muto et al. 2019). Sea otters have not recolonized all former habitats, though their current distribution is considered stable (USFWS 2013b; Ballachey and Bodkin 2015).

Status Total: 4

Biological - variables measure aspects of a taxon's distribution, abundance and life history. Higher biological scores suggest greater vulnerability to extirpation. Biological scores range from -50 (least vulnerable) to 50 (most vulnerable). **Score**

Population Size in Alaska (-10 to 10) -10

>25,000. The most recent assessment estimates a population size of 54,771 individuals, with a minimum population size of 45,064 (Muto et al. 2019).

Range Size in Alaska (-10 to 10) -8

Ranges from Attu Island east to the Kodiak Archipelago and the Barrren Islands, and north to the Pribilof Islands (Gorbics and Bodkin 2001). The northernmost extent is variable and dependent on sea ice extent (USFWS 2013b). Range extent is >100,000 sq. km. but <400,000 sq. km, estimated in GIS.

Population Concentration in Alaska (-10 to 10) -10

Does not concentrate. Population is distributed throughout coastal waters in southwest Alaska and no aggregation sites have been reported (USFWS 2013b).

Reproductive Potential in Alaska

Age of First Reproduction (-5 to 5) -1

Age at sexual maturity is density-dependent, but averages between 3 to 5 years (Bodkin et al. 1993; von Biela et al. 2009; Doroff and Burdin 2015). In southcentral Alaska, only 30% of two-year old females were sexually mature, 73% were mature at ages 3 and 4, and 100% of 5-year old females were reproductive (Bodkin et al. 1993).

Number of Young (-5 to 5) 3

Reproductive females usually have one pup per year (Monson et al. 2000; Doroff and Burdin 2015). Age-specific reproductive rates for northern sea otters in southcentral Alaska ranged from 0.22 to 0.88 (Bodkin et al. 1993).

Ecological Specialization in Alaska

Dietary (-5 to 5) -5

Northern sea otters are opportunistic predators that consume a variety of taxa dependent on availability, intraspecific competition, and personal preference (Estes et al. 1982; Tinker et al. 2012; USFWS 2013b; Newsome et al. 2015). Important prey items for the southwest Alaska DPS includes clams, mussels, sea urchins, and fish (Estes et al. 1982; Doroff and DeGange 1994; reviewed in USFWS 2013b).

Habitat (-5 to 5) 1

Because sea otters feed predominantly on benthic organisms, they are largely restricted to coastal waters <100 m deep, though they can travel over deeper waters (Bodkin et al. 2004; Gilkinson et al. 2011; USFWS 2013b). Within coastal habitats, otters forage along a variety of substrate types (e.g. sand, rock, mixed substrate, kelp forests) and wave exposure levels (Estes et al. 1978; Gilkinson et al. 2011; USFWS 2013b).

Biological Total: -30

Action - variables measure current state of knowledge or extent of conservation efforts directed toward a given taxon. Higher action scores denote greater information needs due of lack of knowledge or conservation action. Action scores range from -40 (lower needs) to 40 (greater needs). **Score**

Management Plans and Regulations in Alaska (-10 to 10) -10

Protected by the North Pacific Fur Seal Convention of 1911, the Marine Mammal Protection Act, and the Endangered Species Act (Federal Register 2005). A recovery plan is in place for this DPS (USFWS 2013b). Subsistence harvest is permitted (USFWS 2013b).

Knowledge of Distribution and Habitat in Alaska (-10 to 10) -10

Distribution is well-known and habitat associations have been studied (e.g. Gorbics and Bodkin 2001; Doroff et al. 2004; Stewart et al. 2014; reviewed in Riedman and Estes 1990 and USFWS 2013b).

Knowledge of Population Trends in Alaska (-10 to 10) -2

Surveys are conducted at several sites across the population's range (Muto et al. 2019). While these surveys do not occur every year, they are considered adequate for estimating population trends (USFWS 2013b; Muto et al. 2019).

Knowledge of Factors Limiting Populations in Alaska (-10 to 10) 10

The factors that led to this population's decline and that are impeding its recovery are currently unknown. Several factors have been proposed and are reviewed in the Recovery Plan (USFWS 2013b). Potential factors include declining food availability, predation by killer whales (reviewed in DeMaster et al. 2006; Wade et al. 2007; Kuker and Barrett-Lennard 2010), disease, environmental contamination, and mortality from fishing nets. There is a lack of evidence for most of these factors, including the food limitation hypothesis (e.g. Laidre et al. 2006; reviewed in USFWS 2013b). The prevalence of disease and parasites is low in southwest Alaska, but the Streptococcus bovis virus may be preventing recovery (USFWS 2013b). Subsistence harvest, collisions with boats, and entanglement in fishing nets are not considered major threats, but reliable data are lacking for many of these factors (Muto et al. 2019). While the Exxon Valdez oil spill caused important mortalities along the Gulf of Alaska (DeGange et al. 1994), the risk of oil spills in southwest Alaska is low (Muto et al. 2019).

Action Total: -12

Supplemental Information - variables do not receive numerical scores. Instead, they are used to sort taxa to answer specific biological or management questions.

Harvest:	Not substantial
Seasonal Occurrence:	Year-round
Taxonomic Significance:	Population
% Global Range in Alaska:	>10%
% Global Population in Alaska:	≥75%
Peripheral:	No

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