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Lontra canadensis

This species is not complete.
January 7, 2014 by Amber Lankford
Author(s) Expertise: **3**
Print species as a PDF [1]

Sensitivity Factor	Sensitivity 1 - 7 (one being least sensitive, seven being most sensitive)	Confidence 1 - 5 (one being least sensitive, five being most sensitive)
Generalist/Specialist	5 High	2 Poor
Physiology	1 Low	2 Poor
Life History	5 High	3 Fair
Habitat	7 Extremely High	2 Poor
Dispersal Ability	2 Medium-Low	2 Poor
Disturbance Regimes	4 Medium-High	2 Poor
Ecology	4 Medium-High	3 Fair
Non-Climatic	5 High	3 Fair
Other (weight)		

Sensitivity Score : 57 Medium

Sensitivity Score

100 * [(0.5 *(Dispersal Distance + Dispersal Barriers) + Disturbance Regimes + (0.5 * Generalist/Specialist) + Physiology + (0.5 * Life History) + Sensitive Habitats + Ecology + Non-Climatic Stressors + (Other * Weight) / 49 + (7 * Weight)]

Note: if Sensitive Habitats are identified, this factor automatically gets a value of seven, otherwise it remains zero.

Confidence Score : 2 Poor

Confidence Score

The Confidence Score is an average of the Confidence column above.

Overall User Ranking: 5 High

Author Expertise:
3

Common Name:
Northern river otter

Is this Species completed:
No

Taxonomy

This is a description of the whole group

Scientific Name:
Lontra canadensis

Geography:
Idaho

Realm:
Terrestrial
Freshwater

Kingdom:
Animal

Phylum:
Chordata

Class:
Mammalia

Order:
Carnivora

Family:
Mustelidae

Genus:
Lontra

Global Rank:
G5 (1996)

Rounded Global Rank:
G5 - Secure

IUCN:
Least Concern ver 3.1 (2008)

Generalist/Specialist

Broadly, where does this species fall on the spectrum of generalist to specialist? :
5

Confidence in your assessment of the degree to which the species is a generalist or specialist:
2 Poor

Please specify which factors, if any, make the species more of a specialist:
foraging dependency

Please further describe the relationships that make the species more of a specialist:
River otters are largely picivorous, although they will consume small mammals and aquatic invertebrates.

Citations:
Melquist, W.E., P.J. Polechla Jr., and D. Toweill. 2003. River otter: Lontra canadensis. In: Wild Mammals of North America: Biology, Management, and Conservation. 2nd edition. Editors: Feldhamer, G.A., B.C. Thompson, and J.A. Chapman. Johns Hopkins University Press, Baltimore, Maryland.

Physiology

Species' physiological sensitivity:
1 low sensitivity

Confidence in how physiologically sensitive the species is to climate change:
2 Poor

Life History

Species' reproductive strategy:
5

Confidence in your assessment of the species' reprodcutive strategy:
3 Fair

Is the species polycyclic, iteroparous, or semelparous?:
Iteroparous (reproduces in successive cycles--characteristic of K-strategists)

Average length of time to reproductive maturity:
females 1 year, males ~2-5 years

How many surviving young can an individual produce during a single reproductive event under optimal conditions?:
1-3

How many reproductive events can an individual undergo in a single year under optimal conditions?:
1

Comments:
Males in more northern populations may not become successful breeders until they are around 5-7 years old. Females may skip years and breed every two years. River otters exhibit delayed implantation which may allow them to appropriately time high energy demand events around food resource abundance and availability.

Citations:
Lariviere, S., and L.R. Walton. 1998. Lontra canadensis. Mammalian Species, No. 587, Lontra canadensis, pp. 1-8. Melquist, W.E., P.J. Polechla Jr., and D. Toweill. 2003. River otter: Lontra canadensis. In: Wild Mammals of North America: Biology, Management, and Conservation. 2nd edition. Editors: Feldhamer, G.A., B.C. Thompson, and J.A. Chapman.

Sensitive Habitats

Depends on the following sensitive habitat types:
Coastal Lowlands/Marshes/Estuaries/Beaches
Wetlands/Vernal Pools
Ecotones (not including above)

Confidence in whether the species depends on the listed sensitive habitat types:
2 Poor

Comments:
Otter presence is strongly correlated with post beaver activity, suggesting that a facultative commensal relationship exists between otters and beavers. The water course modifications made by beavers improve the habitat of fish prey used by otters (in: Melquist et al. 2003). Melquist and Hornocker (1983) found that river otters in Idaho migrate seasonally from high elevation streams and lakes to valleys.

Citations:
Lariviere, S., and L.R. Walton. 1998. Lontra canadensis. Mammalian Species, No. 587, Lontra canadensis, pp. 1-8. Melquist, W.E., P.J. Polechla Jr., and D. Toweill. 2003. River otter: Lontra canadensis. In: Wild Mammals of North America: Biology, Management, and Conservation. 2nd edition. Editors: Feldhamer, G.A., B.C. Thompson, and J.A. Chapman.
Melquist, W.E., and M.G. Hornocker. 1983. Ecology of river otters in west central Idaho. Wildlife Monographs 83:1-60.

Dispersal Ability

Maximum annual dispersal distance:
>100 km

Confidence in maximum annual dispersal distance:
3 Fair

Within the context of dispersal distance above, do barriers to dispersal exist?:
3

Confidence in barriers to dispersal exists:
2 Poor

Please select the types of barriers relevant to dispersal:
Industrial or Urban Development
Mountains
Arid lands

Citations:
Melquist, W.E., and M.G. Hornocker. 1983. Ecology of river otters in west central Idaho. Wildlife Monographs 83:1-60. Serfass, T.L., R.P. Brooks, J.M. Novak, P.E. Johns, and O.E. Rhodes Jr. 1998. Genetic variation among populations of river otters in North America: Considerations for reintroduction projects. Journal of Mammalogy 79:736-746.

Disturbance Regimes

How sensitive is this species to one or more disturbance regimes:
4 moderately sensitive

Confidence in how sensitive is this species on one or more disturbance regimes:
2 Poor

Please check all disturbance regimes upon which the species is sensitive:
Fire
Flooding
Drought
Pollution
Urbanization

Please describe the disturbance regimes upon which the species is sensitive (frequency, timing, severity, duration):
As one of the top predators in river systems, river otters are particularly susceptible to the accumulation of heavy metals such as lead and mercury (Basu et al. 2005)). As with other species in this position, there is concern over how the accumulation of heavy metals might affect memory and learning, among other mental and physical functions. Fire poses a risk to habitat. Loss of vegetative cover could affect both cover for otters as well as in-stream cover for their prey. Flooding also poses a risk as it may remove or alter habitat or make hunting for prey difficult. Drought presents the opposite problem where by loss of water could affect in-stream flow, thereby affecting the habitat that the aquatic prey depend upon. Finally, otters tend to avoid areas with increased human activity, so urbanization may limit habitat availability in the future.

Comments:

Citations:
Basu, N., A. Scheuhammer, N. Grochowina, K. Klenavic, D. Evans, M. O'Brien, and H.M. Chan. 2005. Effects of mercury on neurochemical receptors in wild river otters (Lontra canadensis). Environmental Science and Technology 39:3585-3591. Melquist, W.E., P.J. Polechla Jr., and D. Toweill. 2003. River otter: Lontra canadensis. In: Wild Mammals of North America: Biology, Management, and Conservation. 2nd edition. Editors: Feldhamer, G.A., B.C. Thompson, and J.A. Chapman. John Hopkins University Press, Baltimore, Maryland.

Ecological Relationships

Please specify which of the following (if any) are sensitive to climate change for this species:
forage
habitat

Confidence in how sensitive the species is to other effects of climate change on its ecology:
3 Fair

Which types of climate and climate-driven changes in the environment affect these aspects of the species' ecology?:
temperature
precipitation

How sensitive is this species? ecological relationships to the effects of climate change?:
4

Comments:
Increasing stream temperatures could impact the composition and/or abundance of fish species and populations throughout river otter habitat. Similarly, changes in the hydrologic/precipitation regime could affect both otter habitat and prey base depending upon the season and degree of change from normal.

Interacting non-climatic stressors

To what degree do other, non-climate-related threats, to the species make it more sensitive to climate change?:
5

Confidence in the degree to which non-climate-related threats affect the species' sensitivity to climate change:
3 Fair

Please check all of the stressors that make the species more sensitive to climate change:
habitat loss or degradation
other interspecific interactions
direct human conflict (including harvesting)
pollution

Overall User Ranking

In your opinion, how would you rank the overall sensitivity of this species to climate change?:
5

[1] http://climatechangesensitivity.org/printpdf/898