Lontra felina - (Molina, 1782)

ANIMALIA - CHORDATA - MAMMALIA - CARNIVORA - MUSTELIDAE - *Lontra - felina*

Common Names: Marine Otter (English), Chichimen (Spanish; Castilian), Chinchimen (Spanish; Castilian), Chingungo (Spanish; Castilian), Chungungo (French), Gato Marino (Spanish; Castilian), Gato de Mar (Spanish; Castilian), Huallaca (Spanish; Castilian), Loutre de mer (French), Nutria de Mar (Spanish; Castilian), Sea Cat (English)
Synonyms: *Lutra felina* Molina, 1782

Taxonomic Note:
The use of *Lutra* for three of the New World otter species (*L. felina*, *L. canadiensis*, *L. longicaudis*) has been widespread in the past. Van Zyll de Jong (1972, 1987) separated this group into the genus *Lontra* based on morphological criteria, which was confirmed by Wozencraft (1993). Koepfli and Wayne (1998) and Koepfli *et al.* (2008) re-confirmed this classification based molecular data. Thus, nowadays the generic name *Lontra* should be accepted as valid for all New World otters (except *Pteronura*).

Red List Status
EN - Endangered, A2cd+3cde (IUCN version 3.1)

Red List Assessment

Assessment Information

Date of Assessment: 20/01/2019

Reviewed: 10/03/2020

Assessor(s): Valqui, J. & Rheingantz, M.L.

Reviewer(s): Hussain, S.A., Duplaix, N.

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Facilitators/Compilers: NA

Assessment Rationale

The Marine Otter is confirmed as Endangered on the basis of inferred future population decline due to habitat loss and exploitation. Historical records suggest that the species was abundant until the 19th century (Tschudi 1844, Darwin 1889), when there occurred a steep decline in population due to hunting for pelt trade. The species has a restricted distribution along the Pacific coast from northern Peru along the Chilean coast to Cape Horn and Isla de Los Estados in Argentina. It is patchily distributed from Peru to Tierra del Fuego. Its distribution north of 39°S latitude is becoming highly fragmented because of exploitation, pollution and increased human occupation along the seashores. Poaching is still present in many regions, especially south of 39°S latitude, where there is little or no enforcement of protective legislation. The greatest threats to its continuous existence are accelerating habitat destruction, degradation, and competition for prey, accidental kill in crab pots and poaching throughout the range. The original range of Marine Otter has decreased considerably because of excessive hunting (Redford and Eisenberg 1992), and the species has been nearly exterminated from the regions of Cape Horn and southern Tierra del Fuego (Brownell 1978) as well as from the northern extremities of its former range (Chehebar 1990).

Additionally, Marine Otters are persecuted and killed directly for alleged damage to local fish, bivalves, and shrimp populations (Miller *et al.* 1983, Redford and Eisenberg 1992, Apaza *et al.* 2004).) Illegal fishing techniques (e.g. dynamite fishing, accidental death by entanglement (bycatch) in fishing nets) are a frequent problem in several localities of the Peruvian coast, such as Huarmey (Valqui 2012) and Paracas (Apaza *et al.* 2004, Valqui 2012). Pollution of the Marine Otter's habitat comes from several centres of industrial fishing activity like Chimbote (probably the most important fishing port at the Peruvian coast) and mining cities Ite, Ilo and Marcona in Peru, where tailings have been spilled directly into the ocean for over 40 years, altering several kilometres of the littoral zone (Apaza *et al.* 2004).

A common denominator for all regions is that there is very lenient law enforcement regarding the Marine Otter´s conservation status and protection, as hunting or killings on fish farms do not implicate consequences to the offenders. Global natural factors like the El Niño Southern Oscillation (ENSO) also may considerably affect the marine otter population (Vianna *et al.* 2010), due to the more or less drastic climatic and oceanographic changes that cause the mortality of several marine communities from fish to mammals (Apaza and Figari 1999, Wang and Fiedler 2006).

Based on the records of historical decline in population due to extensive hunting for the pelt trade, the species can be categorised as Endangered under criteria A2cd, due to a suspected decline in population of ≥ 50% over the past three generations, or 30 years (Pacifici *et al.* 2013). The ongoing threats, such as poaching, habitat loss, retaliatory killings, and accidental mortalities, are suspected to result in future population reductions of ≥50%

over the next three generations (30 years Pacifici *et al.* 2013) unless conservation measures are strengthened. Therefore, the Marine Otter is listed under the category Endangered based on criteria A2cd+3cde.

Reasons for Change

Reason(s) for Change in Red List Category from the Previous Assessment: NA

Distribution

Geographic Range

The Marine Otter is distributed along the southern Pacific Coast of South America from Chimbote (9°S) in northern Peru (Valqui 2012), to Isla Grevy (56°S) at the southern tip of Chile (Sielfeld 1997) and eastwards to the Isla de los Estados (54°S), in Argentina (Parera 1996). In 1964, Schweigger reported *Lontra felina* up to the Isla Lobos de Tierra (6° 26'S) in northern Peru. Studies of the last decades registered the northern range limit at Chimbote (9°S) (Brack 1978, Brownell 1978, Larivière 1998, Apaza *et al.* 2004, Sánchez and Ayala 2006, Valqui *et al.* 2010). Recent sightings in Huanchaco (8°S) suggest at least occasional events of recolonization north to the actual northern limit of distribution range, yet reasons for appearance or disappearance in these areas remain unclear (Alfaro-Shigueto *et al.* 2011). In the south the species´ presence is unclear in the XVth, Ist, XIth and XIIth regions and in the Tierra del Fuego region in Argentina (Cassini 2008).

Although Redford and Eisenberg (1992) stated that the original range of *Lontra felina* has decreased considerably because of excessive hunting in the past decades, the authors do not mention any specific regions or study cases. Brownell (1978) stated that the species has been nearly exterminated from the regions of Cape Horn and southern Tierra del Fuego but several works (Sielfeld 1989, 1990, 1992; Sielfeld and Castilla 1999) reported the species' presence between 49°S (Puerto Orella) and 55°S (Isla Grevy).

The Marine Otter´s habitat is naturally fragmented in a very heterogeneous alternation of suitable habitat (rocky shore patches with caves or, sometimes, docks, shipwrecks or abandoned fishing boats) and unsuitable habitat (sandy beaches or rocky shoreline without caves). Thus, Marine Otters may be absent in several hundreds of kilometres of coast throughout the species´ total distribution range (Redford and Eisenberg 1992, Vianna *et al.* 2010, Valqui 2012).

Area of Occupancy (AOO)

Estimated area of occupancy (AOO) - in km2: NA

Continuing decline in area of occupancy (AOO): NA

Extreme fluctuations in area of occupancy (AOO): NA

Extent of Occurrence (EOO)

Estimated extent of occurrence (EOO) - in km2: NA

Continuing decline in extent of occurrence (EOO): NA

Extreme fluctuations in extent of occurrence (EOO): NA

Locations Information

Number of Locations: NA

Continuing decline in number of locations: NA

Extreme fluctuations in the number of locations: NA

Very restricted AOO or number of locations (triggers VU D2)

Very restricted in area of occupancy (AOO) and/or # of locations: NA

Elevation / Depth / Depth Zones

Elevation Lower Limit (in metres above sea level): 0

Elevation Upper Limit (in metres above sea level): 10

Depth Lower Limit (in metres below sea level): 50

Depth Upper Limit (in metres below sea level): 0

Depth Zone: Shallow photic (0-50m)

Map Status

Map Status	How the map was created, including data sources/ methods used:	Please state reason for map not available:	Data Sensitive?	Justification	Geographic range this applies to:	Date restriction imposed:
Done	-	-	-	-	-	-

Biogeographic Realms

Biogeographic Realm: Neotropical

Occurrence

Countries of Occurrence

Country	Presence	Origin	Formerly Bred	Seasonality
Argentina	Extant	Native	-	Resident
Chile	Extant	Native	-	Resident
Peru	Extant	Native	-	Resident

FAO Area Occurrence

	Presence	Origin	Formerly Bred	Seasonality
41. Atlantic - southwest	Extant	Native	-	Resident
87. Pacific - southeast	Extant	Native	-	Resident

Population

The density estimates proposed by various authors are variable (from 0.04 to 10 individuals per kilometre, see Castilla and Bahamondes 1979, Castilla 1982, Cabello 1983, Rozzi and Torres-Mura 1990, Ebensperger and Castilla 1991, Sanchez 1992, Sielfeld 1992, Medina-Vogel 1995, Apaza *et al.* 2004, Mangel and Alfaro-Shigueto 2004, Medina-Vogel *et al.* 2006), therefore the reported numbers are to be taken with care. Survey numbers and abundance estimations are highly dependent on the methodology applied (Valqui 2012) and detecting individuals on the rocky shores is very difficult. The fact that the species is solitary or only present in very small groups (not larger than ten individuals) makes it difficult to determine if the species is abundant in one specific area. Nevertheless, a global population of about 800 to 2,000 individuals is proposed for the Peruvian coast (*ca* 150 km) by Valqui (2012).

Population Information

Current Population Trend: Decreasing

Number of mature individuals (=population size): NA

Extreme fluctuations? (in # of mature individuals): NA

Severely fragmented?	Justification
Yes	-

Continuing decline in mature individuals? NA

Continuing decline % in mature individuals within 1 generation or 3 years, whichever is longer (up to max. of 100 years in the future): NA

Continuing decline % in mature individuals within 2 generations or 5 years, whichever is longer (up to max. of 100 years in the future): NA

Continuing decline % in mature individuals within 3 generations or 10 years, whichever is longer (up to max. of 100 years in the future): NA

Extreme fluctuations in the number of subpopulations: NA

Continuing decline in number of subpopulations: NA

All individuals in one subpopulation: NA

Number of mature individuals in largest subpopulation: NA

Number of Subpopulations: NA

Population Reduction - Past

Percent Change in past: NA

Past Population Reduction Basis: NA

Causes of past reduction reversible? No.

Causes of past reduction understood? Yes.

Causes of past reduction ceased? No.

Population Reduction - Future

Percent Change in future	Reduction or Increase	Qualifier	Justification
50%	Reduction	Suspected	-

Basis?
c) a decline in area of occupancy, extent of occurrence and/or quality of habitat, d) actual or potential levels of exploitation, e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites)

Population Reduction - Ongoing

Both: Percent Change over any 10 year or 3 generation period, whichever is longer, and must include both past and future, future can't go beyond 100 years: NA

Both Population Reduction Basis: NA

Causes of both (past and future) reduction reversible? No.

Causes of both (past and future) reduction understood? Yes.

Causes of both (past and future) reduction ceased? No.

Quantitative Analysis

Probability of extinction in the wild within 3 generations or 10 years, whichever is longer, maximum 100 years: NA

Probability of extinction in the wild within 5 generations or 20 years, whichever is longer, maximum 100 years: NA

Probability of extinction in the wild within 100 years: NA

Habitats and Ecology

Lontra felina is the only species of the genus *Lontra* that is found exclusively in marine habitats. The species is more agile in water as compared to land. It uses coastlines with range extending approximately 30 m inland and 100-150 m of sea offshore (Castilla and Bahamondes 1979). The species inhabits marine areas exposed to heavy seas and strong wind (Cabello 1978, Ostfeld *et al.* 1989) and prefers rocky shores with caves that are above the water level at high tide, as well as areas with large algae communities offering an abundance and diversity of prey species (Castilla and Bahamondes 1979). Sandy beaches offer marginal habitat (Sielfeld 1989) and typically are used only for travel between dens and water (Ebensperger and Castilla 1992). Marine Otters are, for the most part, restricted to marine waters, but may occasionally travel up freshwater rivers in search of prey (Brownell 1978, Cabello 1978, Redford and Eisenberg 1992). Because not all coastlines are suitable, marine otters are found in disjunct populations throughout their distribution range (Redford and Eisenberg 1992).

The fact that Marine Otters are solitary or only gathering in small groups suggests high ecological requirements regarding space. The species' preference for coastal waters offering a wide abundance and diversity of prey species (Castilla and Bahamondes 1979) is in conflict with the increasing artisan and industrial fishing effort. Marine Otters are top predators with a high metabolic rate, thus pollution of their environments may affect them more than other species, as their position in the food chain leads to high bioaccumulation of heavy metals, pesticides and other toxic elements.

The Marine Otter diet is composed mostly of invertebrates, including crustaceans (decapods, shrimps, and crabs) and molluscs (bivalves and gastropods), and vertebrate prey, including fish belonging to the families Blennidae, Cheilodactylidae, Gobiesocidae, and Pomacentridae, and occasionally birds and small mammals (Cabello 1978, Castilla and Bahamondes 1979, Ostfeld *et al.* 1989, Sielfeld 1990). Along the Valdivian coast in the south of Chile the diet of marine otter consisted of 25 species; 52% (13/25) of the species identified were crustaceans, 40% (10/25) were fish, and 8% (2/25) were molluscs. Crustaceans were found in 78% of 475 spraints, 100% of 929 prey remains, and 90.8% of prey determined by direct observation, fish in 20% of spraints and 9.0% of prey determined by direct observation, and molluscs in 2% of spraints and 0.2% of prey determined by direct observation. Observed seasonal variation in prey availability was reflected in the otter diet. Fourteen prey species were trapped; 43% (6/14) crustaceans and 57% (8/14) fish. Crustaceans were 93% of 566 trapped individuals, fish 7%. *L. felina* showed opportunistic feeding behaviour, selecting prey seasonally according to their availability rather than to their energy input (Medina-Vogel *et al.* 2004).

Some studies have found that fruits (*Greigia sphacelata*, *Fascicularia bicolor*) may also be consumed occasionally (Brownell 1978, Cabello 1978, Medina 1995). Marine Otters may compete with gulls (*Larus*) and the South American Sea Lion (*Otaria flavescens*) for similar species of prey fish (Cabello 1978). The most important natural predator of the Marine Otter is the Killer Whale (*Orcinus orca*; Cabello 1978), but adults also may be killed by sharks (Parera 1996) and birds of prey may capture juveniles when on land (Cabello 1983).

The Marine Otter is most likely a monogamous species. Mating typically occurs during December or January (Cabello 1978) with gestation of 60-65 days (Housse 1953, Sielfield 1989). Parturition usually occurs from January to March. It takes place in a den or on shore between rocky outcroppings and vegetation. The litter size varies from two to four young, with two being observed most frequently. Young Marine Otters remain with their parents for approximately ten months. Adults transport their young by carrying them in their mouths or resting the young on their bellies as they swim on their backs. Both adults in the monogamous pair bring prey back to the den to feed their young (Parera 1996). During non-breeding season, Marine Otters are mostly solitary. The group size is seldom more than two to three individuals. Its activity pattern is generally diurnal, with peaks of activity noted in early morning, mid-afternoon, and evenings.

IUCN Habitats Classification Scheme

Habitat	Season	Suitability	Major Importance?
9.2. Marine Neritic -> Marine Neritic - Subtidal Rock and Rocky Reefs	Resident	Suitable	Yes
9.10. Marine Neritic -> Marine Neritic - Estuaries	-	Unknown	-
10.1. Marine Oceanic -> Marine Oceanic - Epipelagic (0-200m)	Resident	Suitable	Yes
12.1. Marine Intertidal -> Marine Intertidal - Rocky Shoreline	Resident	Suitable	Yes
12.2. Marine Intertidal -> Marine Intertidal - Sandy Shoreline and/ or Beaches, Sand Bars, Spits, Etc	Resident	Marginal	-
13.1. Marine Coastal/Supratidal -> Marine Coastal/Supratidal - Sea Cliffs and Rocky Offshore Islands	Resident	Marginal	-
13.2. Marine Coastal/Supratidal -> Marine Coastal/supratidal - Coastal Caves/Karst	Resident	Suitable	Yes
13.4. Marine Coastal/Supratidal -> Marine Coastal/Supratidal - Coastal Brackish/Saline Lagoons/Marine Lakes	Resident	Unknown	-
13.5. Marine Coastal/Supratidal -> Marine Coastal/Supratidal - Coastal Freshwater Lakes	Resident	Unknown	-

Continuing Decline in Habitat

Continuing decline in area, extent and/or quality of habitat?	Qualifier	Justification
Yes	Inferred	-

Life History

Generation Length	Justification	Data Quality
10	Based on Pacifici et al. 2013	good

Movement Patterns

Movement Patterns: Not a Migrant

Congregatory: NA

Systems

System: Terrestrial, Freshwater (=Inland waters), Marine

Use and Trade

General Use and Trade Information

Species not utilized: False

No use/trade information for this species: False

For Use and Trade information see under Threats.

Subsistence:	Rationale:	Local Commercial:	Further detail including information on economic value if available:
Yes	-	-	-

National Commercial Value: Yes

International Commercial Value: No

End Use	Subsistence	National	International	Other (please specify)
10. Wearing apparel, accessories	true	true	-	-

Is there harvest from captive/cultivated sources of this species? No

Trend in level of total offtake from wild sources: Increasing

Trend in level of total offtake from domesticated sources: Not domesticated

Harvest Trend Comments: NA

Non- Consumptive Use

Non-consumptive use of the species? True

Explanation of non-consumptive use: Tourism. As apex predators, the species can serve as a bioindicator for wetland ecosystems, and also as a flagship species for wetland conservation.

Threats

Hunting was the major threat on the Marine Otter in the 20th Century (Sielfeld and Castilla 1999). 38,000 otter pelts were exported from Chile between 1910 and 1954 (Iriarte and Jaksic 1986). Although two otter species (*L. provocax* and *L. felina*) were subsumed as “otters” and no hunting estimate of each species can be inferred from this data, these numbers show the magnitude of the pelt industry in the 20th Century. Today, the lack of demand in the pelt market and fur trade prohibitions, have diminished this threat considerably. Nonetheless, illegal hunting for fur and trophies still occur in some areas as Samanco, (Sánchez and Ayala 2006), La Libertad (15°29'S) and Morro Sama (18°00'S) (Apaza *et al.* 2004), Peru and south of 39°S latitude in Chile.

In the last decades, the major threats derive from an intensive urbanization of western South America, where the immense anthropogenic pressure on the coastal ecosystem accelerates habitat degradation and increases its fragmentation (Brownell 1978, Eisenberg and Redford 1989, Sielfield and Castilla 1999, Medina-Vogel *et al.* 2008, Vianna *et al.* 2010). It is not yet clear at what point these fragmentation forces will cause isolation to result in local extinction events due to lack of gene flow (Valqui 2012). In any case, these global changes will trigger much more localized threats in different regions. In and around human settlements, big dens with terrestrial entrances may be occupied by dogs, cats and rats, displacing the Marine Otter from its reproduction, feeding and resting areas (Apaza *et al.* 2003, Valqui 2012). Dog attacks are increasingly reported in several locations of the distribution (Medina-Vogel *et al.* 2008, Mangel *et al.* 2010, Vianna *et al.* 2010).

Industrial and artisan fishing ports have been established along the Pacific coast, affecting structure and productivity of marine life communities. Although *Lontra felina* shows certain capacity to coexist with humans, for example in fishing ports (Valqui 2004, Ruiz 2009, Medina-Vogel *et al.* 2007), fishing has intensified global natural declines in the abundance of many forage fishes, leading to reduced reproductive success and reduced abundance of birds and marine mammals (Majluf *et al.* 2002). The human-otter coexistence implies competition for resources that humans exploit for food, commerce and housing (Moreno *et al.* 1984; Ostfeld *et al.* 1989; Moreno 2001; Medina-Vogel *et al.* 2004, 2007, 2008), as it is the case of mariculture (crabs and molluscs (Apaza *et al.* 2004). Additionally, the species may be persecuted and killed directly for alleged damage to local fish, bivalves, and shrimp populations, which are of consumptive value (Miller *et al.* 1983, Redford and Eisenberg 1992, Apaza *et al.* 2004).). Illegal fishing techniques (e.g. dynamite fishing) are a frequent problem in several localities of the Peruvian coast, such as Huarmey (Valqui 2012) and Paracas (Apaza *et al.* 2004, Valqui 2012). Industrial ships have frequently been observed fishing closer to the coast than allowed by law (Apaza *et al.* 2004), perturbing the coastal habitat on a broader scale. Another threat for Marine Otters is accidental death by entanglement (bycatch) in fishing nets (Brownell 1978, Mangel and Alfaro-Shigueto 2004, Pizarro 2008) and in crab pots (Medina-Vogel *et al.* 2004), although the dimension of these mortality cases is unknown.

Pollution of the Marine Otter´s habitat comes from several centres of industrial fishing activity like Chimbote (probably the most important fishing port at the Peruvian coast) and mining cities Ite, Ilo and Marcona in Peru, where tailings have been spilled directly into the ocean for over 40 years, altering several kilometres of the littoral (Apaza *et al.* 2004).

Additionally, spills of domestic effluents reach the ocean directly or indirectly, through rivers (Hinrichsen 1998, Thorne-Miller 1999). Thus, heavy metals and other toxic substances can be diffused through currents and progressively transmitted through the food chain at least in a regional level (Valqui 2004, Apaza *et al.* 2004). Oil spillage and extreme noise affect the species in areas near beach resorts in the vicinity of big cities (Valqui 2004).

A common denominator for all regions is that there is very law enforcement regarding the Marine Otter´s conservation status and protection, as hunting or killings on fish farms do not implicate consequences to the offenders.

Global natural factors like the El Niño Southern Oscillation (ENSO) also may considerably affect the Marine Otter population (Vianna *et al.* 2010), due to the more or less drastic climatic and oceanographic changes that cause the mortality of several marine communities from fish to mammals (Apaza and Figari 1999, Wang and Fiedler 2006).

Threats Classification Scheme

No past, ongoing, or future threats exist to this species. False

The threats to this species are unknown. False

Threat	Timing	Timing score	Scope	Severity	Impact Score	Impact category
1.1. Residential & commercial development -> Housing & urban areas	Ongoing	3	3	3	9	High
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
1.2. Residential & commercial development -> Commercial & industrial areas	Ongoing	3	3	3	9	High
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
1.3. Residential & commercial development -> Tourism & recreation areas	Ongoing	3	2	2	7	Medium

Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
3.2. Energy production & mining -> Mining & quarrying	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
5.1.1. Biological resource use -> Hunting & trapping terrestrial animals -> Intentional use (species is the target)	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species stresses -> 2.1. Species mortality					
5.3.5. Biological resource use -> Logging & wood harvesting -> Motivation Unknown/ Unrecorded	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species stresses -> 2.1. Species mortality					
5.4.4. Biological resource use -> Fishing & harvesting aquatic resources -> Unintentional effects: (large scale) [harvest]	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species stresses -> 2.1. Species mortality 2. Species stresses -> 2.3. Indirect species effects -> 2.3.2. Competition					
5.4.5. Biological resource use -> Fishing & harvesting aquatic resources -> Persecution/ control	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species stresses -> 2.1. Species mortality 2. Species stresses -> 2.3. Indirect species effects -> 2.3.2. Competition					
6.1. Human intrusions & disturbance -> Recreational activities	Future	1	2	2	7	Medium
Stresses:	1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species stresses -> 2.2. Species disturbance					
6.3. Human intrusions & disturbance -> Work & other activities	Ongoing	3	2	2	7	Medium
Stresses:	1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species stresses -> 2.2. Species disturbance					
9.1.3. Pollution -> Domestic & urban waste water -> Type Unknown/Unrecorded	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
9.2.1. Pollution -> Industrial & military effluents -> Oil spills	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species stresses -> 2.1. Species mortality					
9.2.3. Pollution -> Industrial & military effluents -> Type Unknown/Unrecorded	Ongoing	3	2	2	7	Medium

Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects					
9.4. Pollution -> Garbage & solid waste	Ongoing	3	2	3	8	High
Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species stresses -> 2.1. Species mortality					

Conservation

The Marine Otter is protected in Argentina, Chile, and Peru. It is listed in Appendix I of CITES (Nowak 1991) and in Appendix I of the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals [CMS]).

Conservation Actions In- Place

Action Recovery Plan: NA

Systematic monitoring scheme	Note
Yes	-

Conservation sites identified: NA

Occur in at least one PA	Note
Yes	-

Percentage of population protected by PAs (0-100): NA

Area based regional management plan: NA

Invasive species control or prevention: NA

Harvest management plan: NA

Successfully reintroduced or introduced benignly: NA

Subject to ex-situ conservation: NA

Subject to recent education and awareness programmes: NA

Included in international legislation	Note
Yes	CITES Appendix I CMS Appendix I

Subject to any international management/trade controls	Note
Yes	CITES Appendix I

Important Conservation Actions Needed

Conservation Actions	Note
1.1. Land/water protection -> Site/area protection	-
1.2. Land/water protection -> Resource & habitat protection	-
2.1. Land/water management -> Site/area management	-
3.2. Species management -> Species recovery	-

4.1. Education & awareness -> Formal education	-
4.2. Education & awareness -> Training	-
4.3. Education & awareness -> Awareness & communications	-
5.1.3. Law & policy -> Legislation -> Sub-national level	-
5.4.2. Law & policy -> Compliance and enforcement -> National level	-
5.4.3. Law & policy -> Compliance and enforcement -> Sub-national level	-

Research Needed

Research	Note
1.1. Research -> Taxonomy	-
1.3. Research -> Life history and Ecology	-
2.1. Conservation planning -> Species action/Recovery plan	-
2.2. Conservation planning -> Area-based management plan	-
3.1. Monitoring -> Population trends	-

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