Conservation assessment and ecology of the Magellanic Oystercatcher *Haematopus leucopodus*

G. Escudero[1], S. Ferrari[2], C. Albrieu[2], R. Matus[3], S. Imberti[4], P. Stoyanoff[5], A. Webb[5], M. Castro[6], M. Abril[5], L. Benegas[7] R.I.G. Morrison[8], R.K. Ross[9], P. Edelaar[10], H.P. Sitters[11], L.J. Niles[12] & A.D. Dey[13]

[1]Centro Nacional Patagonico, Puerto Madryn, Argentina; gescudero@cenpat.edu.ar
[2]UniversidadNacional de la Patagonia Austral, Rio Gallegos, Santa Cruz, Argentina
[3]Natura Patagonia, Chile
[4]Asociación Ambiente Sur
[5]Universidad Nacional de la Patagonia SJB, Comodoro Rivadavia, Argentina
[6]Centro de Investigación en Ecosistemas de la Patagonia, Coyhaique, Chile
[7]Museo Municipal de Rio Grande, Tierra del Fuego, Argentina
[8]Environment Canada, National Wildlife Research Centre, Ottawa, Ontario, Canada
[9]Environment Canada, Canadian Wildlife Service, Ontario Region, Ottawa, Ontario, Canada
[10]University Pablo de Olavide, Seville, Spain
[11]Centre for Research in Animal Behaviour, School of Psychology, University of Exeter, Exeter, UK
[12]Conserve Wildlife Foundation of New Jersey, 109 Market Lane, Greenwich, New Jersey 08323, USA
[13]New Jersey Division of Fish and Wildlife, Endangered and Nongame Species Program, Trenton, New Jersey, USA

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The Magellanic Oystercatcher *Haematopus leucopodus* is a monotypic species endemic to southern Patagonia. Breeding (from September to January–February), it occurs along the coast on the Falklands/Malvinas and to some extent on Tierra del Fuego, but most pairs in continental South America are found at moist inland sites. Little is known about its breeding biology, especially for the continental population. Outside the breeding season, from January–February to August, it occurs exclusively along the coast, and individuals form large non-breeding flocks on the continent of South America. Here birds use both soft and hard substrates where they feed on buried clams and polychaetes as well as mussels, limpets and snails. There is virtually no information on life-history parameters, but individuals seem to be site-faithful to their non-breeding areas, which will facilitate determining these parameters in the future. The species is not currently threatened and numbers seem stable. A relatively small number of coastal sites support a significant part of the non-breeding population, and most of these are under pressure from urban development, disturbance and pollution. Because these pressures are believed to be increasing, we recommend increasing knowledge on all aspects of the biology of the species, to identify breeding areas and habitat, to study its reproductive biology and life-history parameters, to survey non-breeding areas in order to estimate population size and trend, and to establish migratory connectivity between breeding and non-breeding areas. We suggest that simple measures, such as the closure of key feeding and roosting sites, and the enforcement of such measures, could improve its conservation status.

TAXONOMIC STATUS

The Magellanic Oystercatcher *Haematopus leucopodus* [Photo A] is a monotypic species, without any known geographic variation in plumage or size (Hayman *et al.* 1986, Hockey 1996a).

LIFE-HISTORY

Hardly any studies have addressed the life history of this species. There is no information on e.g. survival rates, age-at-first-breeding, intrinsic population growth rates and population viability, or breeding success. The only published information specifically on the species reports on its diet, seasonal distribution and reproductive habits and vocalizations (Humphrey *et al.* 1970, Jehl 1978, Miller & Baker 1980, Siegel-Causey 1991). There is also a limited amount of information on its biology in various guides and reports (Clark 1986, Albrieu *et al.* 2004, Ferrari *et al.* 2002). During exploratory surveys in the south of Santa Cruz Province, Argentina, from 2 October to 8 November 1999, 11 nests were found (Ferrari *et al.* 2001); all were located on swampy vegetated areas near small wetlands or depressions without drainage. The nest is a simple depression in the ground with small pebbles at the base. The average diameter of the nest was 18.7 cm (SD 2.6) (n=11), eight (73%) of the nests had two eggs and three (27%) had one egg. The mean length of the 19 eggs was 54.8 mm (SD 3.8) and average breadth was 39.6 mm (SD 3.2). Chicks were observed by mid-November. In the Falklands/Malvinas, breeding begins with the preparation of a simple scrape in open ground above

Photo A. Magellanic Oystercatchers in Rio Grande, Terra del Fuego, Argentina on 14 December 2009 (photo: Jan van de Kam).

the high water line. Two eggs were laid, mainly from late September to late October, with the latest clutches being laid in mid December (Woods & Woods 1997). Eggs hatch three to four weeks later. Chicks were constantly guarded by the adults, which were aggressive towards any human or other animal entering the territory. Far from trying to hide when approached, adults guarding eggs or young scurried alongside approaching humans issuing a harsh piping call. Smaller animals, such as birds of prey, were often attacked by adults using their long pointed bill as a weapon (extracted from *http://www.falklands.net/BirdGuidePiedOystercatcher.shtml*). Courtship behaviour of several pairs was observed during October/November on estancias of the Patagonian steppe in western Chubut Province close to Rio Percy (AW unpubl. data) and Rio Senguer (PS unpubl. data), so the timing of breeding seems to be similar in different parts of the range.

The combination of dates and locations of museum specimens indicated that breeding Magellanic Oystercatchers stayed on the inland nesting grounds from September to January/February, when they moved to the coast from February/March until August (Fig. 1). Non-breeding birds, probably mostly immatures, remained on the coast year-round, so all or at least a portion of immatures (one and two year old birds) did not move to the breeding grounds and hence did not breed. The timing of the seasonal movements from breeding to wintering grounds is confirmed by several catches at two sites on Isla Grande, Tierra del Fuego. In November 2004, immature birds predominated in a catch at Rio Grande, Argentina. Only one adult (with a damaged leg) was caught, 10 were one-year-olds and four were two-year-olds (Escudero *et al.* in prep.). Similarly 59 out of 82 birds caught at Bahia Lomas, Chile, on 7 December 2008 were immatures. Most of the birds captured during January and February at Bahía Lomas were adults; for example 70 out of 77 caught on 17 January 2008 (RM, HPS, LJN, ADD, unpubl. data). In the southern part of the range, flocks of a thousand or more can be seen after the adults return from the breeding grounds in late summer: for example surveys in January include 1,000 at Rio Grande, Tierra del Fuego, over 13,000 at Bahía Lomas, Tierra del Fuego, and 1,200 at Río Gallegos, Santa Cruz.

Of a catch of 27 birds at Rada Tilly, Chubut, Argentina, in August 2004 (20 adults and 7 one-year-olds), 23% of colour-ringed birds were re-sighted the following winter in the same area, in spite of confirmed ring loss. This shows that birds are at least fairly site-faithful to their wintering site (Escudero *et al.* in prep.).

Primary moult progresses outward and takes place from January to April in adults, and from October to February in immatures.

BIOMETRICS

Various data on Magellanic Oystercatcher biometrics are mentioned in the literature but some are of limited value. Museum specimens may have shrunk or been measured in a way that was inconsistent with modern field methods; in some cases the same data appear to be repeated by different authors; while often only the range or mean is given without sample size. Moreover recent studies show that bill-length is greatly affected by abrasion (probably related to feeding-method, see below), so because early data on bill-length are not generally accompanied by information on abrasion, they can be difficult to interpret. Similarly it is evident that there are considerable seasonal changes in mass, so some references to mass in the literature are of little value because there is no information on date. We have therefore limited our assessment of Magellanic Oystercatcher biometrics to data from recent field studies and museum specimens for which sex was determined (Table 1).

Museum specimens suggest that there is little difference between the sexes of Magellanic Oystercatchers with respect to wing length; however, all field measurements (of the maximum chord (Redfern & Clark 2001)) show longer wings (Table 1). Presumably this discrepancy can be attributed to the shrinkage of museum specimens and/or differences in the way in which the wings were measured.

The bill lengths of museum specimens suggest that females have longer bills (mean in the range 78–81 mm) than males (73–75 mm) (Table 1). However, though this conclusion is consistent with other oystercatcher species (Hockey *et al.* 1996), it should be treated with caution because there are no available data on bill abrasion for the museum specimens. The bill-lengths of unsexed birds caught at Bahía Lomas with non-abraded, round-tipped bills were on average 5.4 mm longer than those with blunt tipped bills (presumably caused by hammering shellfish) (Table 1). One of these birds, an immature that presumably changed its feeding method or diet, had a blunt bill 79.1 mm long when it was first caught on 17 January 2008 but a rounded bill 84.1 mm long when caught on 7 December of the same year, a difference of 5.0 mm.

The wing lengths of juveniles (i.e. with primaries that were fully grown at the time of fledging) were significantly shorter than birds which had completed their first primary moult; e.g. 27 one-year-olds caught at Bahía Lomas in December had a mean wing length of 255.9 mm (SD 5.7) and that of 24 adults was 264.4 mm (SD 5.9) ($t = 5.2$, $p<0.001$) (RM, HPS, LJN, ADD unpubl. data). The age by which young birds achieve full adult bill length is less clear. There was no significant difference between the bill-lengths of adults and subadults caught at Rada Tilly, Chubut, Argentina, in August (Escudero *et al.* in prep. ANOVA $p=0.38$), but in a catch at Bahía Lomas in December adult bill-lengths were on average 3.0 mm longer than those of subadults, controlling for bill-shape (GLM of bill-length against age and bill-tip shape, $p=0.003$ for age and $p<0.001$ for shape). However, this could arise from different sex-ratios among the age-classes, so no conclusion can be reached until data on sex can be included in the analysis.

Although available data on adult mass are sparse, they showed a large seasonal variation; means ranged from 548 g on 8 December to 575 g on 17 January and 679 g on 13 August (ANOVA $p<0.001$). However, there were differences between the circumstances of each catch which may mean that the data are not representative of the same population. The December catch at Bahía Lomas took place towards the end of the breeding season and adults were in a minority among a flock of mainly immatures; they were probably either young adults that had not yet started to breed or failed breeders that had returned to their non-breeding site early. The January catch, also at Bahía Lomas, took place when most or all of the adults had returned from the breeding areas and adults were in the majority. Similarly adults were in the majority in the August catch (at the end of the non-breeding season), but the catch site was at Rada Tilly which is 750 km to the north of Bahía Lomas. On the other hand, if the 104 g increase in mean mass between January and August is representative of a single population, it would be analogous to the 65 g increase in adult Eurasian Oystercatchers *H. ostralegus* between August and March in southwestern England (Goss-Custard *et al.* 1996). The fat resources stored by the adults in August would appear to be sufficient for migration distances of 1,700–2,600 km, much longer than previously thought and even longer than the 1,500 km of the total distribution range of the species (Escudero *et al.* in prep.).

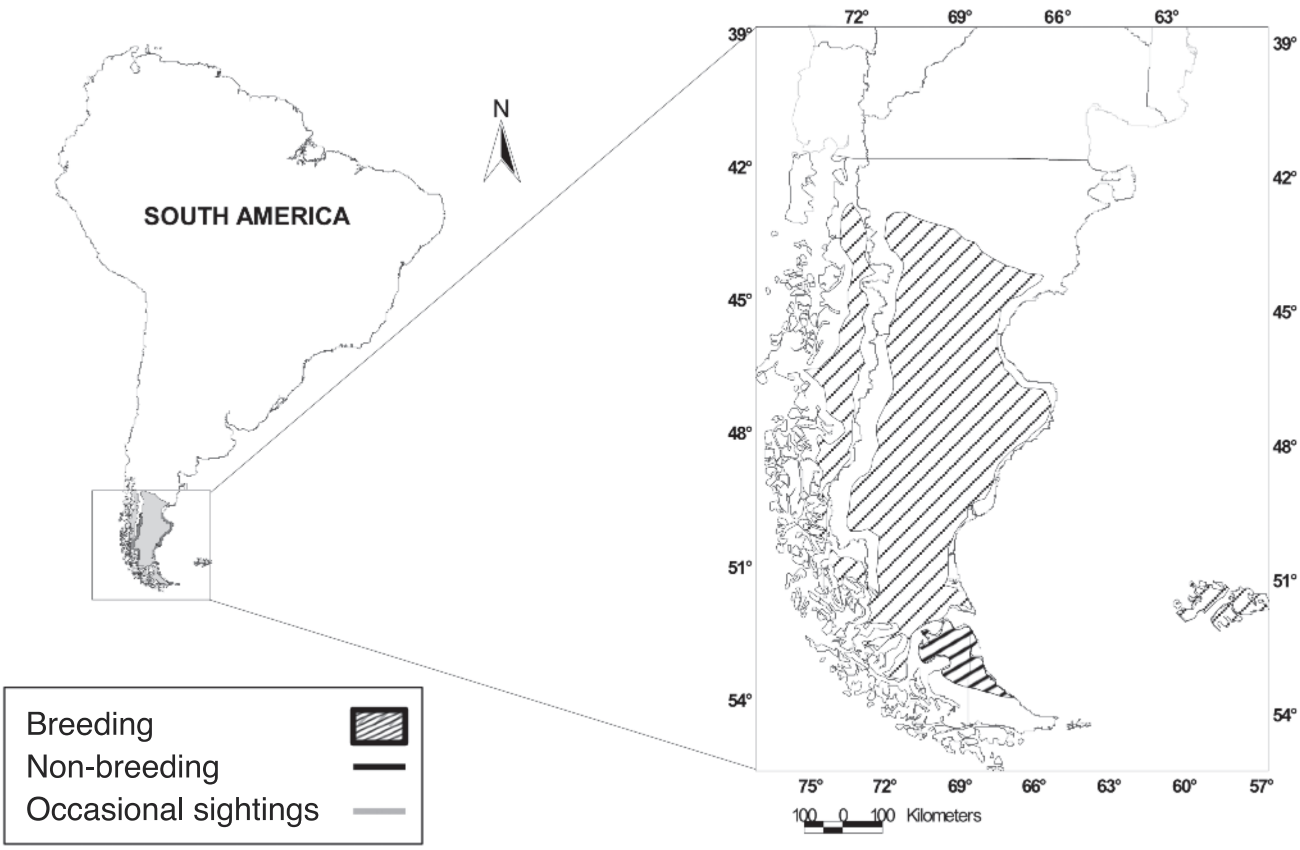

Fig. 1. Map of breeding and non-breeding areas of Magellanic Oystercatchers. Breeding area indicated with diagonal lines, non-breeding shoreline in black and occasional sightings as grey line.

Table 1. Comparative biometrics of adult Magellanic Oystercatchers from various sources (Key to penultimate column (N): F = Female, M = Male, U = Unsexed, R = birds with unabraded / round tipped bills, B = birds with abraded / blunt tipped bills).

Mass				Wing length (mm)		Bill length		n (sex : bill tip)	Source
Mean (SD)	Range	Date	Location	Mean (SD)	Range	Mean (SD)	Range		
				251.9	237–259	73.2	68–76	? (M)	Blake 1977[4]
				251.5	244–260	79	72–85	? (F)	Blake 1977[4]
				257.1	253–263	78.2	73.5–84.8	8 (F)	Jehl 1978[4]
				261	251–273	80.7	73.9–85.3	4 (F)	MACN[1,4]
				250	243–258	74.7	71.2–80.9	4 (M)	MACN[1,4]
679 (37)	595–745	13 Aug 2004	Rada Tilly, Chubut, Argentina[3]	268 (7.5)	255–284	79.1 (4.4)	71.3–87.0	20 (U)	Escudero *et al. unpubl. data*
				265.4 (5.8)	254–280	79.5 (4.8)	71.2–93.2	67 (U)	RM, LJN, ADD, HPS unpubl. data
						82.9 (5.1)[2]	75.0–93.2 2	24 (U : R)[2]	RM, LJN, ADD, HPS unpubl. data
						77.5 (3.3)[2]	71.2–86.6 2	43 (U : B)[2]	RM, LJN, ADD, HPS unpubl. data
575 (33)	502–648	17 Jan 2008	Bahía Lomas, Tierra del Fuego, Chile[3]					43 (U)	RM, LJN, ADD, HPS unpubl. data
548 (41)	458–621	8 Dec 2008	Bahía Lomas, Tierra del Fuego, Chile[3]					24 (U)	RM, LJN, ADD, HPS unpubl. data

[1] Museo Argentino de Ciencias Naturales, Buenos Aires
[2] These data are the same as the previous sample where n=67, but divided between birds with non-abraded round-tipped bills and abraded/blunt tipped bills; the difference between the mean bill lengths of these two samples is significant ($t = 5.25$, $p<0.001$, $df = 65$).
[3] Rada Tilly, which is on the coast of Chubut Province, Argentina, is 750 km north of Bahía Lomas, Tierra del Fuego.
[4] Museum specimens (the remainder are field data).

We have mass data for three juveniles within two months of fledging. All were caught at Bahía Lomas in the first week of February and were 457 g, 404 g and 403 g respectively (mean 421 g, RM, HPS, LJN, ADD unpubl. data), which is almost 25% less than adults in January (Table 1). Seven juveniles caught at Rada Tilly on 17 August had a mean mass of 543 g (range 490–590 g, Escudero *et al.* in prep.) which is 20% less than that of adults at the same time of year (which were about to depart for the breeding grounds and had probably laid down fat reserves) but within 1% of adult weights at the end on the breeding season in December/January (Table 1). In December and January, there was no significant difference between the mass of adults and one-year-old birds (RM, HPS, LJN, ADD unpubl. data). Therefore, as with other oystercatcher species, juveniles fledge at about 100 g less than adult mass; they make up this deficit in the first six months of their lives.

HABITAT AND FOOD

Breeding occurs inland in open landscapes or, in the southern part of the range, close to the shore. The non-breeding season is spent along the shore where the birds feed on both rocky ("restinga") and soft substrates (sand, mud). On the Falklands/Malvinas, breeding is restricted to coastal areas, with all nests located no more than 100 m inland from the high tide mark. Here nests are found mainly on sand beaches backed by low grassy slopes, on sand, short grass or dead seaweeds, and may be partially sheltered amongst diddle-dee or sea cabbage plants (Woods & Woods 1997). On Isla Grande, Tierra del Fuego, some breeding pairs are also observed at the shore on pebble beaches; however, most of the nests have been observed inland. Usually these are associated with wetlands (LB unpubl. data), but not exclusively (R. Matus in prep.). On the continent of South America, Magellanic Oystercatchers commonly breed around freshwater wetlands and marshes of the Humid Magellanic Steppe in southern Santa Cruz Province, Argentina, up to an altitude of 1000 m, but the species also uses brackish marshes near the sea (Ferrari *et al.* 2001). They have never been recorded breeding in *Nothofagus* forest, although they do breed in transitional areas.

Diet in the breeding areas has not been documented, but probably consists of in-soil invertebrates such as earthworms and larvae of various groups. The principal prey species are mussels *Perumytilus purpuratus*, *Mytilus edulis platensis* and *Aulacomya atra atra*, limpets *Crepipatella dilatata*, *Siphonaria lessoni*, *Patinigera magellanica* and snails *Trophon geversianus*, all common species of the Patagonian rocky intertidal zone (Stoyanoff *et al.* in prep., Lizarralde 2004). Magellanic Oystercatchers can also be observed foraging on soft sediment beaches, where they feed on clams *Darina solenoides* and polychaetes. *H. leucopodus* appears to be able to switch diet and feeding techniques according to availability of prey, e.g. due to tidal movements. On the other hand, the shape of the bill tip varies among individuals from rounded (non-abraded) to blunt (abraded by hammering shellfish) (cf. Swennen *et al.* 1983), suggesting that some individuals specialise on hard-shelled prey versus soft-bodied burrowing prey (Edelaar *et al.* 2005). In catches at Bahía Lomas in December and January, birds with blunt bills outnumbered birds with round bills by two to one. These birds included an immature which had a blunt bill in January that was retrapped the following December with a round bill 5 mm longer indicating that it had switched diet and/or feeding method (RM, HPS, LJN, ADD unpubl. data). Overall, the Magellanic Oystercatcher seems well-equipped to feed effectively on various species of invertebrates (PS unpubl. data).

It is notable that among over 200 Magellanic Oystercatchers which were caught at Bahía Lomas, Rada Tilly and Rio Grande none were found to have the characteristic, thin-tipped bills of stabbers. Stabbing a gaping bivalve would seem to be the easiest method of gaining access to the flesh so it is a surprising that no Magellanic Oystercatchers apparently do this. In contrast, everyone of 10 American Oystercatchers *H. palliatus* caught on Chiloe Island, Chile, within the wintering range of *H. leucopodus*, had stabber bills (HPS & J.A. Johnson unpubl. data). Studies of *H. ostralegus* show that stabbers have generally lower diurnal instantaneous intake rates than hammerers and this has led to discussion of why stabbing persists (Goss-Custard & Durell 1988). Possibly therefore it has already died out in *leucopodus* but not in *ostralegus*. However, discovery that stabbers benefit from higher nocturnal intake rates in winter (Sitters 2000) suggests that stabbing may have more fitness advantages than previously supposed.

DISTRIBUTION

The global distribution is restricted to the southern part of Patagonia (southern South America), and covers about 210,000 km² (BirdLife International 2004). The species is a year-round resident on the Falklands/Malvinas. On the mainland, it can be found breeding in Argentina in the north of Tierra del Fuego, most of Santa Cruz, and the west of Chubut, and in Chile in Regions XII, XI and the south of Region X. The non-breeding range is along the Atlantic Ocean coast from Península Valdés (Chubut) in the north (with sightings further north as far as Buenos Aires province) south to Tierra del Fuego. Along the Pacific coast the non-breeding range is from Tierra del Fuego north to Chiloe Island and Llanquihue, Chile (Clark 1986; Hockey 1996a), reaching Valdivia (40º S) in winter (Martínez & Gonzalez 2004). There are no known changes in either the breeding or non-breeding distributions.

POPULATIONS: SIZES AND TRENDS

The global population is estimated at 46,000–139,000 individuals (Wetlands International 2006), with 25,000–100,000 on the continent and 21,000–39,000 on the Falklands/ Malvinas. The 1% Ramsar Convention threshold for identification of internationally important areas is thus 250–1000 individuals for the continent of South America, and 210–390 individuals for the Falklands/Malvinas. There are no studies at the metapopulation level, and monitoring of local populations has occurred only recently in a few areas. Thus, global population trends have not been quantified, but the general consensus (based only on observation of local populations) is that there are no recent changes. Nineteenth century explorers of the Falklands/Malvinas regarded the species as common on the coast and breeding (Woods & Woods 1997), which is still the case. In Table 2 we list estimated wintering numbers for a number of key coastal non-breeding sites. On the Falklands/Malvinas, the formation of large non-breeding flocks does not seem to occur, with a largest flock size ever recorded of only 146 individuals.

Numbers of oystercatchers counted by RIGM and RKR during aerial surveys of the coast of Argentina and the Chilean sectors of Tierra del Fuego in the years 2000–2010 are shown in Table 3. Birds found in Tierra del Fuego are likely to be mostly Magellanic Oystercatchers. However, no distinction was made between Magellanic and American Oystercatchers *H. palliatus* during the surveys, so these likely include both species, though *H. palliatus* is scarce in the southern sites. Overall totals for Tierra del Fuego (which are likely to be almost wholly *H. leucopodus*) varied between about 6,100 and 15,500. Numbers given for Bahía Lomas include the bay itself, the Atlantic Ocean coast south to the border with Argentina, as well as the coast of Bahía Posesion on the north of the strait. Strait of Magellan includes the continental coastline from the narrows at Punta Delgada to Punta Arenas as well as the east shoreline of Seno Otway. Numbers at the larger individual sites in the area tended to be significantly related to survey date, with greater numbers occurring later in the months of January and February, suggesting much of the variation in numbers may have been caused by breeding individuals and their young returning to the shoreline following nesting.

DEMOGRAPHIC AND MECHANISTIC CAUSES OF POPULATION CHANGE

There are no indications that local populations are changing, but potential causes of future changes are listed under Threats.

CONSERVATION STATUS

The species has the status of Least Concern (Birdlife International 2009). Some of the key sites mentioned in Table 2 are protected, the Reserva Costa Atlántica de Tierra del Fuego is a Ramsar site, an Hemispheric Reserve of the Western Hemisphere Shorebird Reserve Network (WHSRN), and Natural Provincial Reserve; Bahía Lomas is a Ramsar site and Hemispheric Reserve of the WHSRN; Río Gallegos is an International Site of the WHSRN and Municipal Protected Area; Bahía Bustamante is included in the Parque Interjurisdiccional Marino Costero Patagonia Austral.

THREATS

Cattle and sheep grazing, desertification, and oil exploitation are perceived to be potential major threats on the inland breeding grounds. Desertification, and the consequential loss of breeding habitat, is increasing in Patagonia. The main cause of this degradation is overgrazing. Additionally, livestock drinking sites, principally for sheep, are often the same as those used by oystercatchers for breeding, causing disturbances and trampling of nests, eggs, and chicks. There might be a negative effect from the development of infrastructure for oil and gas exploitation, such as road building, excavations, and construction of new oil and gas pipes, because they may add to desertification and destruction of the habitat. Many new prospective drilling operations are occurring for gas in the Magallanes area and for oil in the continental area. These operations include seismic exploration (involving underground explosions) and the driving of heavy machinery across steppe habitats, both of which may affect breeding pairs. There is also a direct potential risk to the birds from oil spills.

On the coastal breeding and non-breeding grounds, urbanization, oil exploitation and transport activities, feral cats and dogs and pollution affect the habitat of the species. Many cities are located on estuaries, which are also the sites holding the largest concentrations of birds. These cities tend to expand towards the sea, and the filling in of the intertidal zone with construction material ("reclamation") is a commonly used strategy along the Atlantic Ocean. Urbanization of Rio Gallegos in the last 60 years destroyed almost 40% of the salt-marsh surrounding the city (Ferrari *et al.* 2007), and similar cases can be observed in Comodoro Rivadavia and other cities. These activities result in the loss of roosting and feeding areas. As cities grow, recreational activities, littering, and an increasing number of unleashed dogs became common over the entire range of the species near urban areas, causing disturbance of roosting and feeding flocks. Oil spills and pollution are a potential risk that might cause direct mortality as well as indirect mortality by affecting quantity and quality of food resources on the shoreline. For instance, Morrison & Harrington (1992) reported that 15% of Red Knots *Calidris canutus* observed at one coastal location near Commodoro Rivadavia in 1979 were visibly oiled. Information on the occurrence of oiled oystercatchers

Table 2. Estimated non-breeding numbers of Magellanic Oystercatchers based on ground observations at a number of key sites.

Site	Esitmate of non-breeding population	Year
Costa Atlántica Tierra del Fuego[1]	8,000–10,000	2000–2006
Bahía Lomas[1]	3,500–5,000	2005–2006
Río Gallegos	3,000–4,000	2004
Río Coyle Estuary	500–1,000	1998–2004
Desembocadura Río Santa Cruz	700–1,200	1999–2000
Bahía San Julián	400–600	1999–2000
Rada Tilly – Comodoro Rivadavia	1,500	2002
Bahía Bustamante	700	1999
Falklands/Malvinas (resident population)	21,000–39,000	1997

[1] On Tierra del Fuego non-breeding numbers are greater in late summer (January–February) that in winter (May–September), suggesting that most migrate northwards; e.g. in winter there are only about 3,000 at Rio Grande and 2,000 at Bahía Lomas.

or other shorebirds in other parts of the coast in recent years is not available.

Short-term observations in the northern part of Isla Grande, Tierra del Fuego, in early December 2008 indicated that many pairs of oystercatchers had failed to breed successfully (HPS unpubl. data). At this time they should have been looking after young, but none were seen and neither was there any evidence of active nests. The adults were simply standing around or feeding in pairs. A possible explanation is that the oystercatchers on Isla Grande are not breeding successfully because of predation by the grey or chilla fox *Pseudalopex griseus*. This species is natural to the mainland of Patagonia but not to Isla Grande to which it was introduced in the 1950s in an effort to control rabbits. Predation by grey foxes is thought to be the main reason why Ruddy-headed Geese *Chloephaga rubidiceps* fail to breed successfully on Isla Grande (Madsen *et al.* 2003). If grey foxes are the problem, however, it is puzzling that they should have a serious impact on the island and not apparently on the mainland. This is a subject that merits further investigation.

RECOMMENDATIONS FOR CONSERVATION RESEARCH

1. The general recommendation is to increase knowledge on all aspects of the biology of the species (including its reproductive biology and life history parameters), because the available data are too sparse to establish priorities for conservation.

2. Surveys of non-breeding areas to estimate population size and trend are a priority. Coordination of surveys covering the entire non-breeding range is required as well as assessment of the limits of the non-breeding distribution. Identification of areas with important concentrations of Magellanic Oystercatchers on the Pacific and the Atlantic coasts is needed, as well as an assessment of actual and potential threats at these sites. [Photo B.]

3. Periodic monitoring at different key non-breeding sites is required to update population trends regularly. Research on habitat use, diet and foraging behaviour, physiology, and other aspects of oystercatcher biology are necessary to explain and account for changes in population parameters and to set up protected areas along the coast for feeding and roosting flocks.

4. Migratory connectivity between breeding and non-breeding areas needs to be determined, potential breeding areas need to be assessed, breeding habitat preferences need to be evaluated, and actual and potential threats at these sites need to be assessed.

RECOMMENDATIONS FOR MANAGEMENT

1. Reinforce cooperation and communication between researchers, technicians and decision makers within the distribution of the species, in order to facilitate information exchange and for the establishment of effective conservation actions.

Table 3. Numbers of oystercatchers counted during aerial surveys in Argentina and Chile by RIGM and RKR during the austral summer 2000–2010. Blank cells indicate that the site was not surveyed.

Year	Julian date	Peninsula Valdes[1]	Golfo San Jorge[1]	Rio Gallegos[1]	Tierra del Fuego: Atlantic coast[2]	Bahía Lomas[3]	Strait of Magellan[4]	All Tierra del Fuego: (BL+Atl)	Total
2000	34				5,910	6,512	597	12,422	13,019
2001	34					13,725			
2002	34	364	5,867	5,580	3,210	6,078	268	9,288	9,556
2003	26	391	6,099	4,471	3,803	9,074	34	12,877	12,911
2004	23	298	10,483	3,480	3,226	7,174	897	10,400	11,297
2005	27				4,370	10,962	182	15,332	15,514
2006	17				2,085	3,755	286	5,840	6,126
2007	26				5,244	6,275	125	11,519	11,644
2008	13				2,089	5,031	300	7,120	7,420
2009	23				2,163	5,953	475	8,116	8,591
2010	20				1,755	4,904	193	6,659	6,852

[1] Peninsula Valdes, Golfo San Jorge, and Rio Gallegos are eco-units from Morrison & Ross (1989).
[2] Tierra del Fuego: Atlantic coast comprises the Argentinian coastline of Tierra del Fuego from Bahia San Sebastian to Estancia Viamonte (Morrison & Ross 1989 sectors 119–125).
[3] Bahía Lomas includes the bay itself, the adjacent Atlantic coast to the border with Argentina, and the coast of the mainland of east and north of Punta Delgada at the mouth of the Strait of Magellan, i.e. Bahía Posesion (sectors 3, 13, 12 and 11 in Morrison & Ross 1989).
[4] Strait of Magellan includes selected stretches of the shores of the Strait of Magellan between Punta Delgada and Punta Arenas.

Photo B. A flock of Magellanic Oystercatchers in flight in Bahia Lomas, Chile, on 14 December 2009 (photo: Jan van de Kam).

2. Develop strategies for the conservation or restoration of important wintering and breeding areas.

3. Implement population outreach and educational campaigns at important areas for the species. Increase general awareness of the presence of oystercatchers to the inhabitants at the wintering sites and landowners at the breeding sites, and suggest simple measures that make a difference for the future conservation of the birds.

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APPENDIX 1. KEY SITES FOR THE CONSERVATION OF MAGELLANIC OYSTERCATCHERS

No key breeding sites have been identified. However, the separate and resident population on the Falkland Islands is of major importance. Significant breeding areas need to be assessed; breeding habitat preferences need to be evaluated.

The following non-breeding sites support >1% of the total population:

- ❑ Bahía Lomas and the Strait of Magellan
- ❑ Reserva Costa Atlántica Tierra del Fuego
- ❑ Rio Gallegos
- ❑ Estuario Río Coyle
- ❑ Estuario Rio Santa Cruz
- ❑ Rada Tilly
- ❑ Bahía Bustamante

Because the species tends to concentrate in large flocks, there may be more important areas still unidentified (e.g. along the coast of the Pacific Ocean).

APPENDIX 2. CONSERVATION STATUS OF SOME KEY SITES

Tierra del Fuego

The area around Río Grande is a Provincial Natural Reserve, a Hemispheric site in the Western Hemisphere Shorebird Reserve Network, a Ramsar Site and designated as one of the Important Bird Areas by Birdlife International. Bahía Lomas is a Ramsar site and a Hemispheric site in the Western Hemisphere Shorebird Reserve Network.

Santa Cruz

The habitat of the Rio Gallegos estuary is protected partially as a Reserva Costera Urbana de la ciudad de Río Gallegos and a Reserva Provincial de Aves Playeras. Río Chico constitutes both a Hemispheric site in the Western Hemisphere Shorebird Reserve Network and an Important Bird Area.

Chubut

The area of Rada Tilly and Comodoro Rivadavia was designated as an Important Bird Area.

Breeding areas

Except for Parque Nacional Torres del Paine and Parque Nacional Pali Aike, Chile and Parque Nacional Los Glaciares, Argentina which all support small numbers of breeding Magellanic Oystercatchers (Imberti 2005) the reproductive area of the species on the South American mainland lack any protection.