



Agreement on the Conservation of Albatrosses and Petrels

Third Meeting of the Seabird Bycatch Working Group

Mar del Plata, Argentina, 8 – 9 April 2010

Progress in seabird bycatch assessment and mitigation in Argentinean fisheries

Argentina

This paper is presented for consideration by ACAP and may contain unpublished data, analyses, and/or conclusions subject to change. Data in this paper shall not be cited or used for purposes other than the work of the ACAP Secretariat, ACAP Advisory Committee or their subsidiary Working Groups without the permission of the original data holders.

Progress in seabird bycatch assessment and mitigation in Argentinean fisheries

Argentina

The present document reviews the information currently available on seabird interaction and mortality associated to Argentinean fisheries, and provides an update on the latest development on conservation measures addressing seabird bycatch in Argentina and the National Plan of Action - seabirds. This information was in part extracted from a technical report for the development of the NPOA-S in Argentina (Favero & Gandini 2007) and the actual text of the Argentinean NPOA-S recently developed by Argentina and under the process for its adoption.

1. Longline fisheries

Argentina started to investigate the incidental mortality associated to longline fisheries during mid 90s when the first estimations of bycatch rates were conducted. Since then, and with a number of Governmental Organisations such as the Secretariat of Environment, the Under Secretariat of Fisheries, the Federal Fisheries Council, the National Fisheries Institute (INIDEP) and the Academia, significant progress has been achieved to have a comprehensive picture of the levels of mortality in the longline fishery, and the environmental and operational factors affect in it. The information gathered in about a decade on seabird-fisheries interaction and mortality (including albatrosses and petrels) is compiled in Table 1. The longline fishing effort was significantly decreasing during early 2000s and mortality rates estimated in different studies were generally around 0.03 to 0.04 birds /1000 hooks deployed. The most affected species were the Black-browed albatross and the White-chinned petrel.

In regards to the development of conservation measures, it should be noted that a process conducted by the National Government and triggered in the year 2001 by a Federal Fisheries Council Resolution (*Res. CFP 03/01*, www.cfp.gov.ar) to monitor seabird (along with marine mammals and sea turtles) mortality levels, finalised in the year 2008 with another Resolution for the compulsory use of mitigation measures in the entire Argentinean longline fleet (*Res. CFP 08/08*). This conservation measure was reglamented following the CCAMLR model (night setting, weighted regime and streamer lines) by the Under Secretariat of Fisheries and came into force in late 2009 (*Disposición SSPyA N° 127/09*). There is an ongoing programme for the monitoring of bycatch and levels of compliance.

2. Trawl fisheries

The first data on incidental mortality of seabirds associated to trawlers were reported in late 90s. Since then, studies conducted in different trawl fisheries had indicated that seabird mortality is generally present, including albatrosses and petrels. The information currently available is compiled in Table 2.

Most of the studies describe with different degree of detail the species affected, most important areas where mortality happens and a number of environmental and operational factors affecting both the number of seabirds attending vessels and captured during fishing operations. In spite that mortality rates in explored fisheries are low, the main concern deals with the high fishing effort (and the consequent number of albatrosses and petrels affected) plus the complex behavior

of the fleet. Detailed ongoing studies with the participation of the National Research Institute (CONICET) and the National Fisheries Institute (INIDEP), are aimed to (1) provide a comprehensive picture of the most critical areas where seabirds and different trawl fisheries operate, and (2) develop and test the effectiveness of mitigation measures in trawl fisheries. To that end, the Federal Fisheries Council authorized the work of seabird observers in this fishery in order to allow the proper spatio-temporal distribution of the sampling effort (*Acta CFP N° 38/2009*). These national initiatives are complementary to those conducted in recent years by BirdLife International.

3. Other fisheries

Among other fisheries where data on seabird interaction is available, it results relevant to mention the information coming from the jigging (squid) fishery. These data should be considered preliminary since it's primarily coming from interviews to observers (not specifically trained for seabird observation) conducted on land. However, it is worth to highlight that more than a quarter of interviewed observers noted the occurrence of seabirds interacting and being hooked by the fishing gear. The occurrence of large albatrosses (i.e. wanderers, royals) was confirmed, along with White-chinned petrels. One fifth of these reports accounted the release of these birds with injuries and in few cases (2%) the mortality of birds.

Table 1. Review of data on seabird mortality associated to the Argentinean longline fleet

Fishery	Target species	Capture rate (birds/1.000 hooks deployed)	Birds annually captured	Captured species	References
Demersal longline (Spanish system)	Toothfish, kingclip, hubbsi hake		2,400-8,400 1,100-3,900		(Schiavini et al. 1997)
Demersal longline (mainly autoline)	Toothfish, kingclip, skates	0.04-0.4 (max. 0.2±0.3)	1,160 (max. 7,000)	55% BBA, 20% WCP, <5%: WA, SRA, GHA, LMA, SGP, CAP, SSH, GPT	(Favero et al. 2003)
Artisanal longline	Hubbsi hake	0	0		(Gandini et al. 2004)
Demersal longline (Spanish system)	Toothfish, kingclip	0.034-0.009	343	55% BBA, 45% WCP	(Gandini y Frere 2006)
Demersal longline (mainly autoline)	Toothfish, kingclip, skates	0.03-0.39	900	BBA	(Gómez Laich et al. 2006)

Fishery	Target species	Capture rate (birds/1.000 hooks deployed)	Birds annually captured	Captured species	References
Demersal longline (mainly autoline)	Toothfish, kingclip, skates	0.014-0.09		WCP	(Gómez Laich y Favero 2007)
Demersal longline (autoline)	Kingclip	0.071 (0.034-1.53)		76% WCP, 24% BBA	(Seco Pon et al. 2007)

GHA: Grey-headed albatross, BBA: Black-browed albatross, WA: Wandering albatross, SRA: Southern Royal albatross, LMA: Light-mantled albatross, RYA: Royal albatross, WCP: White-chinned petrel, GPT: Grey petrel, CAP: Cape petrel, SGP: Southern Giant petrel, SSH: Sooty Shearwater

Table 2. Review of data on seabird mortality associated to the Argentinean trawl fleet

Fishery	Target	Capture rate	Birds annually captured	Captured species	References
Coastal trawlers	HH, AS	2 birds/394 setting		MP, IC	(Yorio & Caille 1999)
shrimp trawlers	AS	26 MP/120 days in summer 2 SSH, 1 IC, 1 BBA/ 80 days in fall	642±225 MP per summer	MP, SSH, IC, BBA	(Gandini et al. 1999)
Coastal trawlers		0,04 (birds/ set)	560 GSH per year	GSH	(Tamini et al. 2005)
Ice coastal trawlers (freshies)	HH	1,2 (birds/ set)	2.254 GSH, 1.233 IC and 35 MP in 3 months	IC, MP, GSH	(González Zevallos & Yorio 2006)
Ice coastal trawlers (freshies)	PG	0,9 (nets) - 0,14 (warp cables) (birds/ set)	51 BBA and 255 KG in 5 months	KG, BBA, IC, MP, GSH, SSH	(González Zevallos et al. 2007)
Ice trawlers (freshies)	PG, HH	0,03 - 0,18 (birds/ h)	1,219 - 2,813	SRA, BBA, SGP, NGP, WCP	(Favero et al. 2010)
Demersal ice trawlers	(PG, KC, among others)	0, 27 birds/ set in nets 0,0016 birds/ h in cables		WCP, GSH, BBA	Rabuffetti & Tamini Preliminary data, 19 fishing days

Fishery	Target	Capture rate	Birds annually captured	Captured species	References
Demersal freezer trawlers	(HH; PG, AH, KC, among others)	0, 014 birds/ set in nets 0,10 (birds/ set in cables, birds released) 0,57 (birds/ h in cables)		BBA, SGP, CAP, NGP, WCP	Rabuffetti, Tamini & Chaves. Preliminary data, 78 fishing days

GHA: Grey-headed albatross, BBA: Black-browed albatross, WA: Wandering albatross, SRA: Southern Royal albatross, LMA: Light-mantled albatross, RYA: Royal albatross, WCP: White-chinned petrel, GPT: Grey petrel, CAP: Cape petrel, SGP: Southern Giant petrel, SSH: Sooty Shearwater, GSH: Greater shearwater, MP: Magellanic penguin, KG: Kelp gull, IC: Imperial Cormorant.

Target species: HH: hubbsi hake, PG: Patagonian grenadier, AH: austral hake, AS: argentine (Pleoticus) shrimp, CS: cornalito silverside, SBW: southern blue whiting, BC: bacalao criollo, KC: kingclip, LS: Loligo squid, CM: Chub mackerel

References

- Favero, M.; Khatchikian, C.; Arias, A.; Silva Rodríguez, M. P.; Cañete, G. & Mariano-Jelicich, R. 2003. Seabird by-catch along the Patagonian Shelf by Argentine Longline Fishing Vessels: estimations based on data from the Observers National Program, period 1999 - 2001. *Bird Conservation International* 13:273-281.
- Favero, M. & Gandini, P. 2007. Plan Nacional de Acción para la reducción de la mortalidad incidental de aves en pesquerías. Documento técnico.
- Favero, M, G Blanco, G García, S Copello, JP Seco Pon, E Frere, F Quintana, P Yorio, F Rabuffetti, G Cañete & P Gandini. 2010. Seabird mortality associated with ice trawlers in the Patagonian Shelf: effect of discards on the occurrence of interactions with fishing gear. Submitted
- Gandini, P. & Frere, E. 2006. Spatial and temporal patterns of seabirds by-catch in the Argentinean Longline Fishery. *Fishery Bulletin* 104:482-485.
- Gandini, P.; Frere, E.; Pettovello, A. D. & Cedrola, P. V. 1999. Interaction between Magellanic penguins and shrimp fisheries in Patagonia, Argentina. *The Condor* 101:783-789.
- Gandini, P.; Rabuffetti, F.; Crujeiras, J.; Nieto, G.; & Cesar, G. 2004. Status and trends in the Argentinean longline fisheries, evaluation of mitigation measures and its efficiency. FAO. Fishery report N° 751. 5-6 pp.
- Gómez Laich, A. & Favero, M. 2007. Spatio-temporal variation in mortality rates of White-chinned Petrels *Procellaria aequinoctialis* interacting with longliners in the south-west Atlantic. *Bird Conservation International*, 17:359-366. Cambridge University Press.
- Gómez Laich, A.; Favero, M.; Mariano-Jelicich, R.; Blanco, G.; Cañete, G.; Arias, A.; Silva Rodríguez, M. P. & Branchetta, H. 2006. Environmental and operacional variability affecting the mortality of Black-browed Albatrosses associated with long-liners in Argentina. *Emu* 106: 21-28.
- González Zevallos, D. & Yorio, P. 2006. Seabird use of discards and incidental captures at the Argentine hake trawl fishery in Golfo San Jorge, Argentina. *Marine Ecology Progress Series* 316:175-183.

- González Zevallos, D.; Yorio, P. & Caille, G. 2007. Seabird mortality at trawler warp cables and a proposed mitigation measure: a case of study in Golfo San Jorge, Patagonia, Argentina. *Biological Conservation* 136:108-116.
- Schiavini, A.; Frere, E.; Gandini, P.; García, N. & Crespo, E. A., editores. 1997. Albatross-fisheries interactions in Patagonian shelf waters. Surrey Beatty & Sons Pty Limited.
- Seco Pon, J.; Gandini, P. & Favero, M. 2007. Effect of longline configuration on seabird mortality in the Argentine demersal Kingclip *Genypterus blacodes* fishery. *Fisheries Research*. 85: 101-105
- Tamini, L. L.; Coconier, E. G.; Sidders, M.; Perez, J. E.; Barreira, A. & Dellacasa, R. 2005. Abundancia relativa, variación estacional y captura incidental de tres especies de pardelas (*Puffinus sp.*) asociadas a operaciones pesqueras en el Sur de la Provincia de Buenos Aires, Argentina. Páginas 165. En XI Reunión Argentina de Ornitología, Buenos Aires.
- Yorio, P. & Caille, G. 1999. Seabird interactions with coastal fisheries in northern Patagonia: use of discards and incidental captures in nets. *Waterbirds* 22:201-216.