

**RESUMEN DE LAS ACTIVIDADES DE LOS MIEMBROS
RELACIONADAS CON EL CONTROL DEL ECOSISTEMA**

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Contenido

Las Tablas 1 al 4 muestran programas ya sea en progresión o en consideración, para el control o la investigación dirigida, con el fin de evaluar la utilidad de los parámetros potenciales de control. Las categorías bajo las cuales se dan las diferentes respuestas nacionales, son aquellas identificadas como lo más importante de la Reunión del Grupo de Trabajo para el Programa de Control del Ecosistema de CCRVMA (Anexo 6). Las categorías se muestran en el Anexo 6, Tabla 2 (depredadores), Tabla 6 (medio ambiente), Figura 2 (especies presa) y Tabla 3 (programas de investigación sobre depredadores). Los estudios sobre el control futuro y la investigación, tanto sobre especies presa como sobre el medio ambiente, eran similares a aquéllos identificados en la Tabla 1, y por lo tanto, no han sido reproducidos en las Tablas 2 al 4.

La Tabla 5 provee información sobre las fechas y áreas de operación proveniente de las embarcaciones de investigación, y de las actividades basadas en tierra.

Table 1 Monitoring Programs for the Current Season (1986/87)

Species and Parameters*	Arg	Aust	Brazil	Chile	France	FRG	GDR	Japan	Korea	NZ	Poland	S.Afr	USSR	UK	USA
<u>1. Predators</u>															
<u>Antarctic fur seal</u>															
Foraging/attendance cycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Pup growth and weaning weight	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Crabeater seal</u>															
Reproductive rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Age at sexual maturity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Cohort strength	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Body condition	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
<u>Penguins**</u>															
Arrival weight	-	-	-	AP(a)	X(a)	-	-	-	-	X(a)	-	X(m)	-	-	-
Population size	-	PB(a)	-	AP(a)	X(a)	-	-	X(a)	-	X(a)	-	X(m)	-	-	-
Survival	-	PB(a)	-	-	-	-	-	-	-	X(a)	-	X(m)	-	-	-
Incubation shift duration	-	-	-	-	X(a)	-	-	-	-	X(a)	-	X(m)	-	-	-
Breeding success	-	PB(a)	-	-	X(a)	-	-	-	-	X(a)	-	X(m)	-	-	AP(a,c)
Foraging trips	-	-	-	AP(a)	-	-	-	-	-	X(a)	-	X(m)	-	-	AP(a)
Fledging weights	-	PB(a)	-	-	X(a)	-	-	-	-	X(a)	-	X(m)	-	-	AP(a,c)
Adult weight at fledging	-	-	-	-	X(a)	-	-	-	-	X(a)	-	X(m)	-	-	AP(a,c)
Macaroni weight before moult	-	-	-	-	-	-	-	-	-	-	-	X(m)	-	-	-
<u>Minke whale</u>															
Reproductive rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Age at sexual maturity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cohort strength	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Table 1 continued)

	Arg	Aust	Brazil	Chile	France	FRG	GDR	Japan	Korea	NZ	Poland	S.Afr	USSR	UK	USA
2. Prey															
<u>Krill</u>															
- Population variables	-	-	AP	AP	-	-	-	-	SG	-	?	X	AP,PB,X	-	AP
- Relation to predators	-	PB	-	AP	-	-	-	-	SG	-	AP	X	-	-	AP
- Association with fishery	-	-	-	-	-	-	-	-	SG	-	?	-	-	-	-
- Advection	-	-	-	AP	-	-	-	-	SG	-	?	X(m)	-	-	AP
<u>Early Life History</u>															
<u>Stages of Fish</u>	-	PB	AP	-	X	-	SG	-	-	-	SG,AP	-	PB,X	SG	AP,SG
<u>Pleuragramma antarcticum</u>															
	-	PB	-	-	-	-	-	-	-	-	SG,AP	-	PB,X	-	-
3. Environment															
<u>Water</u>															
Movement	-	PB	AP	AP	-	-	-	X	SG	SG	-	AP	AP,PB,X	-	AP
Physical/chemical properties	-	PB	AP	AP	X	-	-	X	SG	-	AP	X	-	SG	AP
Primary production	-	PB	AP	AP	-	-	-	X	SG	-	AP	X	-	-	AP
Secondary production	-	-	-	-	-	-	P	X	SG	P	AP	X	-	-	AP
<u>Ice***</u>															
Sea Ice edge	-	PB(F,S)	-	AP	-	-	-	-	-	-	-	X	AP,X	-	-
Percent cover	-	PB(F,S)	-	AP	-	-	-	-	-	-	-	X	-	-	-
Floe size	-	PB(F)	-	AP	-	-	-	-	-	-	-	X	-	-	-
Snow cover	-	PB(F)	-	-	-	-	-	-	-	-	-	-	-	-	-

* Areas : AP -- Antarctic Peninsula
 PB -- Prydz Bay
 SG -- South Georgia
 X -- Other Area

*** Method of Observation : S -- Satellite
 F -- Field

** Penguin Species : a -- Adelle
 c -- Chinstrap
 m -- Macaroni

Analysis of existing data

Table 2 Monitoring Programs Proposed for Future Seasons

Species and parameters*	Arg	Aust	Brazil	Chile	France	FRG	DDR	Japan	Korea	NZ	Poland	S.Afr	USSR	UK	USA
<u>Predators</u>															
<u>Antarctic fur seal</u>															
Foraging/attendance cycles	-	-	-	AP	-	-	-	-	-	-	-	-	-	SG	-
Pup growth and weaning weight	-	-	-	AP	-	-	-	-	-	-	-	-	-	SG	-
<u>Crabeater seal</u>															
Reproductive rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Age at sexual maturity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cohort strength	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Body condition	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Penguin**</u>															
Arrival weight	X(a)	-	AP(a)	AP(a,c)	X(a)	-	-	-	-	-	-	-	-	SG(m)	-
Population size	X(a)	PB(a)	AP(a)	AP(a,c)	X(a)	-	-	-	-	X(a)	-	-	-	SG(m)	-
Survival	X(a)	PB(a)	-	AP(a,c)	-	-	-	-	-	X(a)	-	-	-	-	-
Incubation shift duration	-	-	-	-	X(a)	-	-	-	-	X(a)	-	-	-	?	-
Breeding success	X(a)	PB(a)	-	-	X(a)	-	-	-	-	X(a)	-	-	-	SG(m)	-
Foraging trips	-	-	AP(a)	-	-	-	-	-	-	X(a)	-	-	-	?	-
Fledging weights	-	PB(a)	-	AP(a,c)	X(a)	-	-	-	-	X(a)	-	-	-	SG(m)	-
Adult weight at fledging	-	-	-	-	X(a)	-	-	-	-	X(a)	-	-	-	SG(m)	-
Macaroni weight before moult	-	-	-	-	-	-	-	-	-	-	-	-	-	SG(m)	-
<u>Minke whale</u>															
Reproductive rate	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-
Age at sexual maturity	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-
Cohort strength	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-

* Areas :
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** Penguin Species :
 a -- Adelle
 c -- Chinstrap
 m -- Macaroni

Table 3 Research Programs for the Current Season (1986/87)

Species and parameters*	Arg	Aust	Brazil	Chile	France	FRG	GDR	Japan	Korea	NZ	Poland	S.Afr	USSR	UK	USA
<u>Predators</u>															
<u>Antarctic fur seal</u>															
Indices of body condition	-	-	-	AP	-	-	-	-	-	-	-	-	-	SG	-
Juvenile tooth size	-	-	-	AP	-	-	-	-	-	-	-	-	-	?	-
Fine structure of teeth	-	-	-	-	-	-	-	-	-	-	-	-	-	?	AP
<u>Crabeater seal</u>															
Collection of material for further analysis of demographic variables	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Instantaneous growth rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Juvenile tooth size	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indices of body condition	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
Feeding areas and behaviour using satellite technology	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AP
<u>Antarctic petrel</u>															
Growth rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fledging success	-	?	AP	-	-	-	-	-	-	-	-	-	-	-	-
Diet	-	PB	AP	-	-	-	-	-	-	-	-	-	-	-	-
<u>Penguins**</u>															
<u>Feeding areas</u>															
(using satellite technology)	-	-	-	-	-	-	-	-	-	-	-	X(m)	-	-	-
Behaviour (" " ")	-	-	-	-	-	-	-	-	-	-	-	X(m)	-	-	-
Frequency (" " ")	-	-	-	AP(a)	-	-	-	-	-	-	-	X(m)	-	-	-
Meal Size	-	PB(a)	AP	AP(a,c)	X(a)	-	-	-	X(a)	-	-	X(m)	-	SG	AP
<u>Minke whale</u>															
<u>Surveys of abundance</u>															
using sightings (as by IDCR)	-	-	-	-	-	-	-	X ¹	-	-	-	-	-	-	-
<u>Diving behaviour</u>															
Analysis of existing data	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Stomach contents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Blubber thickness	-	-	-	-	-	-	-	PB	-	-	-	-	-	-	-
- Density and patchiness	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- School size	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Areas : AP -- Antarctic Peninsula
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1 IDCR (International Decade of Cetacean Research)
 Cruise Area II (0 - 60 W), 3 vessels from Japan

Table 4 Research Programs Proposed for Future Seasons

Species and parameters*	Arg	Aust	Brazil	Chile	France	FRG	GDR	Japan	Korea	NZ	Poland	S.Afr	USSR	UK	USA
<u>Predators</u>															
<u>Antarctic fur seal</u>															
Indices of body condition	-	-	-	AP	-	-	-	-	-	-	-	-	-	SG	-
Juvenile tooth size	-	-	-	AP	-	-	-	-	-	-	-	-	-	?	-
Fine structure of teeth	-	-	-	-	-	-	-	-	-	-	-	-	-	?	-
<u>Crabeater seal</u>															
Collection of material for further analysis of demographic variables	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Instantaneous growth rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Juvenile tooth size	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indices of body condition	-	PB	-	-	-	-	-	-	-	-	-	-	-	-	-
Feeding areas and behaviour using satellite technology	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Antarctic petrel</u>															
Growth rate	-	PB	-	-	-	-	-	-	-	-	-	-	-	-	-
Fledging success	-	PB	AP	-	-	-	-	-	-	-	-	-	-	-	-
Diet	-	PB	-	-	-	-	-	-	-	-	-	X	-	-	-
<u>Penguins**</u>															
<u>Feeding areas</u>															
(using satellite technology)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Behaviour (" " ")	-	PB	-	-	-	-	-	-	-	-	-	-	-	-	-
Frequency (" " ")	-	PB	-	-	-	-	-	-	-	-	-	-	-	-	-
Meal Size	-	PB	AP	AP(a,c)	X(a)	-	-	-	-	X(a)	-	-	-	-	SG
<u>Minke whale</u>															
<u>Surveys of abundance</u>															
using sightings (as by IDCR)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diving behaviour	-	-	-	-	-	-	-	PB,X	-	-	-	X	-	-	-
<u>Analysis of existing data</u>															
- Stomach contents	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-
- Blubber thickness	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-
- Density and patchiness	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-
- School size	-	-	-	-	-	-	-	PB,X	-	-	-	-	-	-	-

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** Penguin Species :
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Table 5 Dates and Areas of Operation for Research Cruises and Shore-based Activities

Member	Ship/Station/Region	Proposed Time	Species/Notes
Argentina	Jubany Station, Orcadas Station	Oct-Feb 87/88	Adelle penguin
Australia	M/V <u>Nella Dan</u> Davis Station Scullen Monolith	Jan-Feb 87 Oct-Nov 87 Oct-March 87 Dec-Jan 86/87	Fish, krill, hydrology Crabeater seal Adelle penguin Antarctic petrel
Brazil	R/V <u>Barao de Teffe</u> Comandante Ferraz Elephant, Nelson, King George Islands	Dec-March 86/87	Adelle penguin
Chile	King George Island	On-going	Adelle penguin
EEC	No programs		
France	Dumont D'urville, Kerguelen	On-going	Adelle penguin, Macaroni penguin
FRG	R/V <u>Polar Stern</u>	Oct-Dec 87	Krill, hydrology
Japan	Syowa Station, 3 vessels	Oct-Dec 86	Adelle penguin, IDCR cruise 0°-60°W
New Zealand	Ross Sea region	Oct-Dec, on-going	Adelle penguin
Poland/USA	R/V <u>Prof. Siedlecki</u>	Dec 86	Early life history stages of fish (ANI, SSI, NOG*) distribution, abundance, growth rate and diet
South Africa	Marion Island Western Lazarev Sea	On-going 1987/88	Macaroni penguin Krill, fish, predators
UK	HMS <u>John Biscoe</u>	Jan 87	Early life history stages of fish (ANI, SSI, NOG*) distribution, abundance, growth rate and diet
USA	R/V <u>Polar Duke</u> USCGC <u>Glacier</u>	Nov 86 Dec-Jan 86/87	Crabeater seal Antarctic fur seal, Crabeater seal
USA/Poland	R/V <u>Prof. Siedlecki</u>	Jan-Feb 87	Antarctic fur seal, Chinstrap penguin
USA	Elephant Island James Ross Island Palmer Station Admiralty Bay South Shetland Islands	Dec-Feb 86/87 Jan 87 Dec-Jan 86/87 Dec-Feb 86/87 Dec-Feb 86/87	Antarctic fur seal Crabeater seal Adelle penguin Adelle penguin, Chinstrap penguin Antarctic fur seal

* FAO Species Codes : ANI - Champscephalus gunnari, SSI - Chaenocephalus aceratus, NOG - Notothenia gibberifrons