Abundanz und Habitatnutzung
von Robben im Weddellmeer - Datenlage

Antarktische Pelzrobbe

Foto: J. v. Franeker, ALTERRA

Rossrobbe

Foto: J. v. Franeker, ALTERRA

Seeleopard

Foto: R. Steinmetz, AWI

Krabbenfresser

Foto: I. Zimmer, AWI

Weddellrobbe

Foto: J. Plötz, AWI

Südlicher Seeelefant

Foto: Joachim Plötz, AWI

Abundanz und Schutz

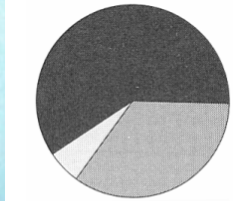
Deutscher Name	Abundanz	Trend	Schutzstatus	
			Madrid Protokoll App. A	CCAS
Antarktische Pelzrobbe	$10^6 – 10^7$	>	bis 2006	Kill & capture forbidden
Weddellrobbe	$10^5 – 10^6$	=	-	<5.000
Rossrobbe	$10^4 – 10^5$	?	gelistet	Kill & capture forbidden
Krabbenfresser	$7 \times 10^6 – 14 \times 10^6$	=	-	Catch <175.000
Seeleopard	$10^4 – 10^5$	=	-	Catch <12.000
Südlicher Seeelefant	$10^5 – 10^6$	<?	-	Kill & capture forbidden

Gesetzliche Grundlagen

international		national
„Madrid Protokoll": Agreed Measures for the Conservation of Antarctic Flora and Fauna, Appendix A, Specially Protected Species (1991)	→	Gesetz zum Umweltschutzprotokoll bzw. Umweltschutzprotokollausführungsgesetz (1998)
Convention for the Conservation of Antarctic Seals (1972)	→	Gesetz zum Übereinkommen zur Erhaltung der antarktischen Robben (1987)

Antarktische Pelzrobbe

- *Arctocephalus gazella*
- ♂ 1,80 m 130 kg
- ♀ 1,30 m 34 kg
- Bestand $7*10^6$-10^7



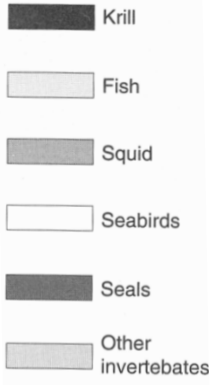
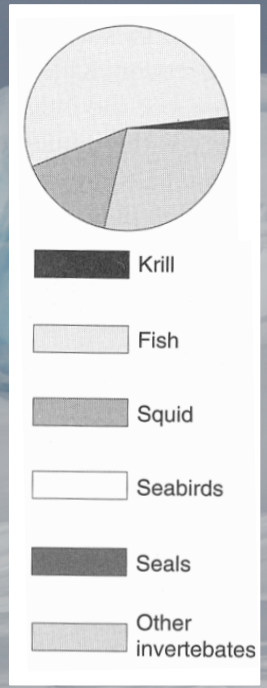


Foto: Horst Bornemann, AWI

Weddellrobbe



- *Leptonychotes weddellii*
- ♂ 2,50 m 390 kg
- ♀ 3,30 m 500 kg
- Bestand 10^5-10^6

Foto: Horst Bornemann, AWI

Rossrobbe

- *Ommatophoca rossii*
- ♂ ♀ 2 m 180 kg
- Bestand 10^4 - 10^5

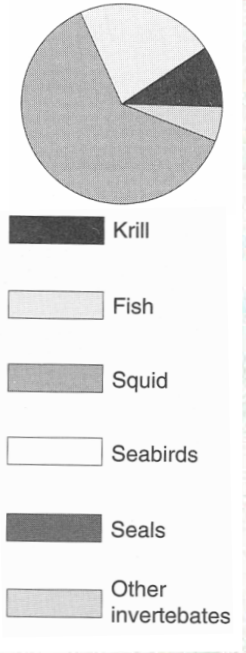


Foto: Jan van Franeker, ALTERRA

Krabbenfresser

- *Lobodon carcinophaga*
- ♂♀ 2,35 m 220 kg
- Bestand $7x10^6$-$14x10^6$

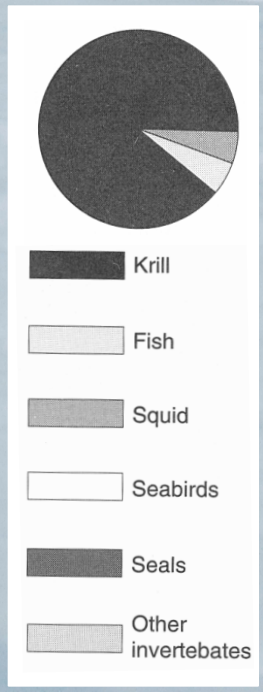


Foto: Ilka Zimmer, AWI

Seeleopard

- *Hydrurga leptonyx*
- ♂ 2,80 m 325 kg
- ♀ 3,00 m 370 kg
- Bestand 10^4-10^5

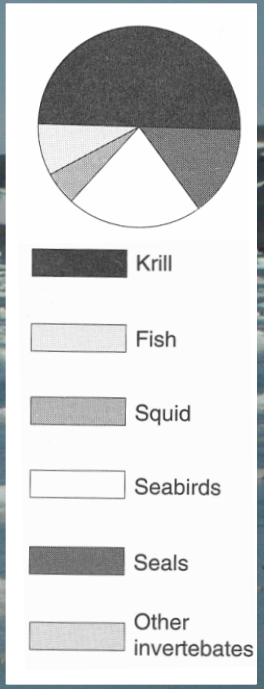


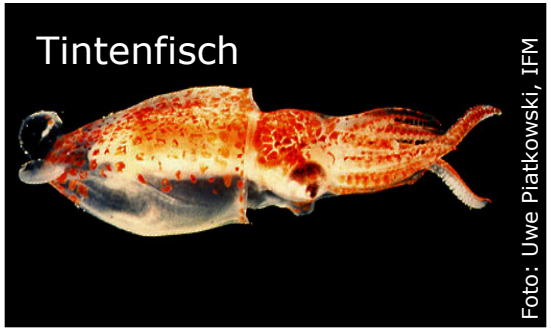
Foto: Richard Steinmetz, AWI

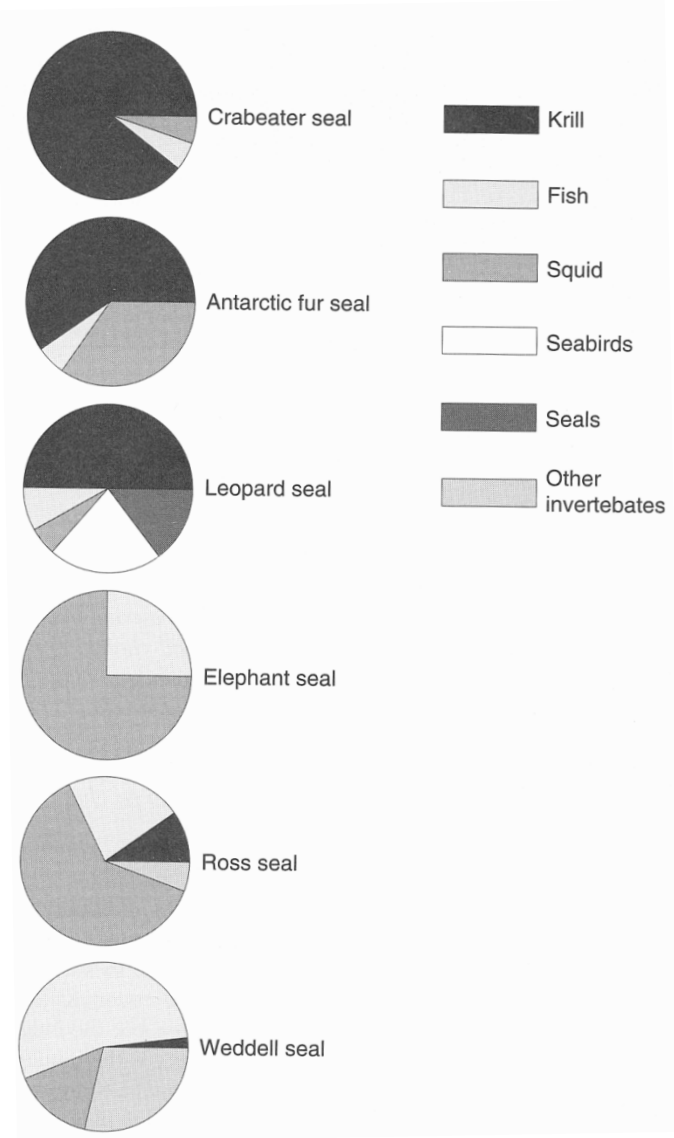
Südlicher Seeelefant

- *Mirounga leonina*
- ♂ 4,90 m 4000 kg
- ♀ 3,00 m 700 kg
- Bestand 10^5-10^6

Foto: Horst Bornemann, AWI

Beutespektrum





Boyd 2008

Eis

Antarktische Pelzrobbe

Foto: J. v. Franeker, ALTERRA

Rossrobbe

Foto: J. v. Franeker, ALTERRA

Seeleopard

Foto: R. Steinmetz, AWI

Krabbenfresser

Foto: I. Zimmer, AWI

Weddellrobbe

Foto: J. Plötz, AWI

Südlicher Seeelefant

Foto: Joachim Plötz, AWI

CAML, APIS & Co

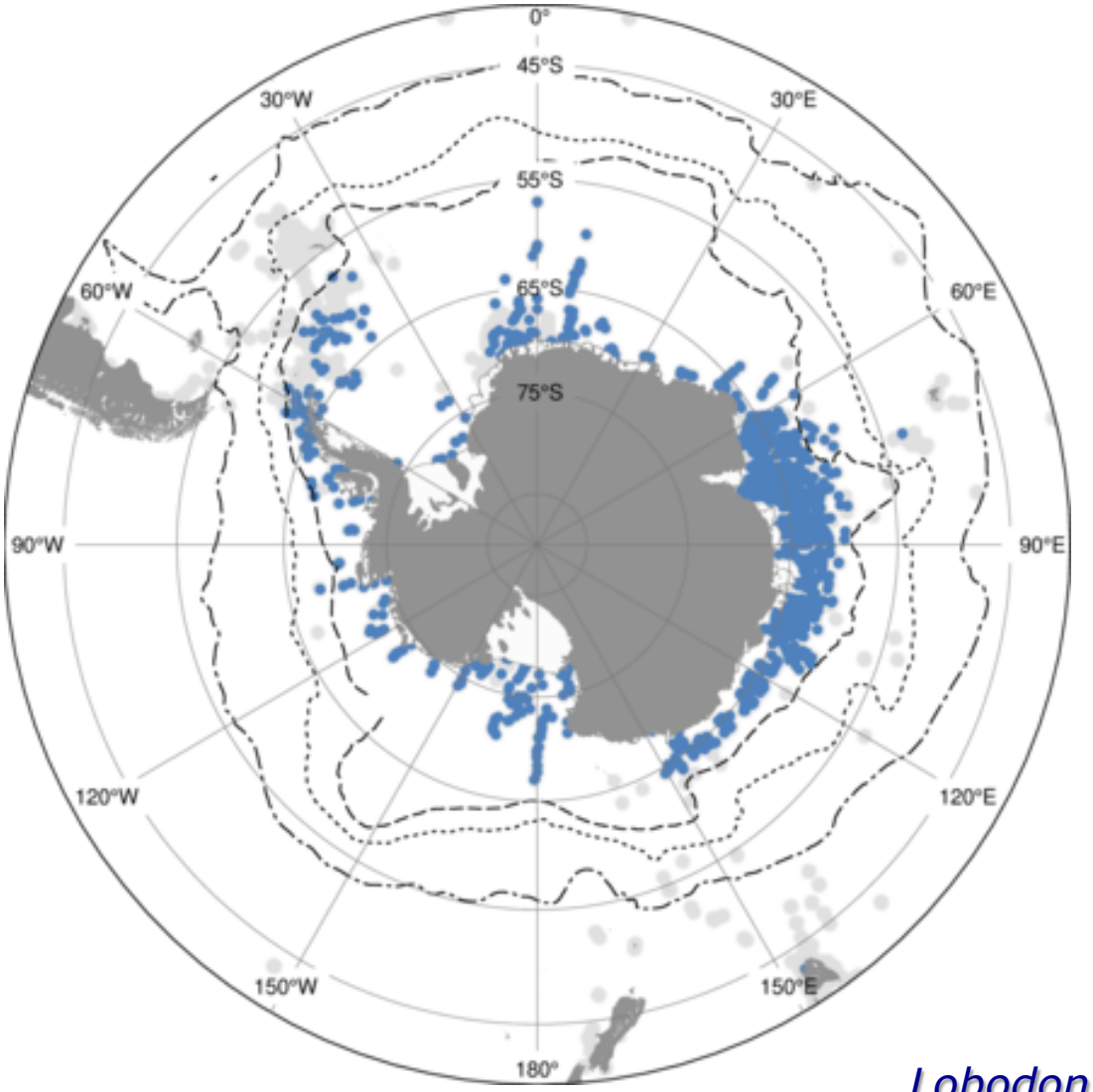
Datenlage

- Sichtungen - CAML-Atlas
- Zählungen - Erickson et al. surveys & APIS
  In situ – Tauchverhalten (APIS)
- *In situ* – Nahrung (APIS)

- Aktuelle regionale Erhebungen

Census of Antarctic Marine Life

Sichtungen

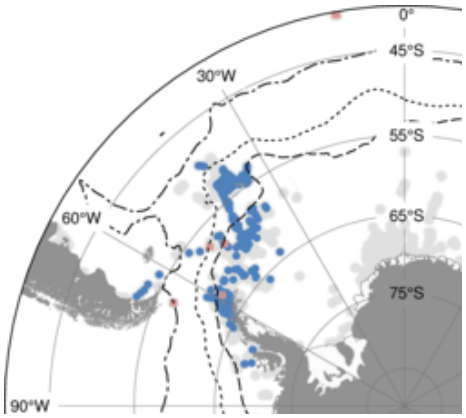


CAML-Atlas 2013

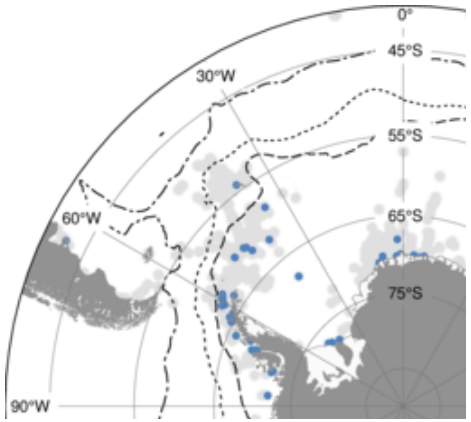
Lobodon carcinophaga

CAML

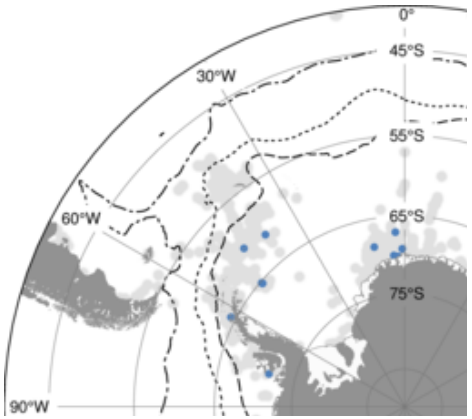
Sichtungen



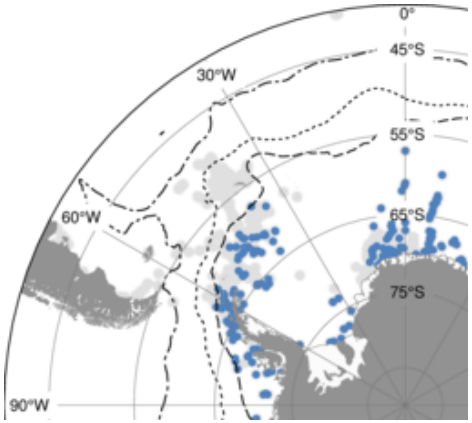
Arctocephalus spp.



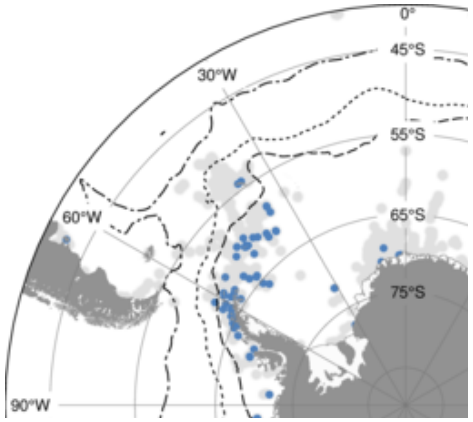
L. weddellii



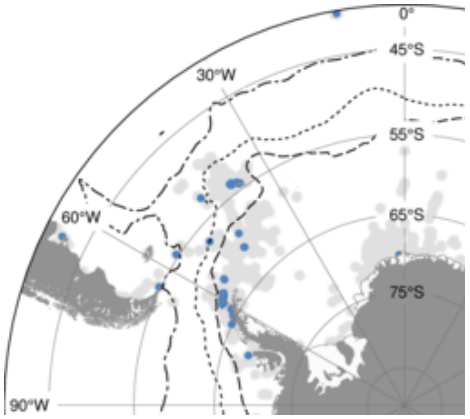
O. rossii



L. carcinophaga



H. leptonyx

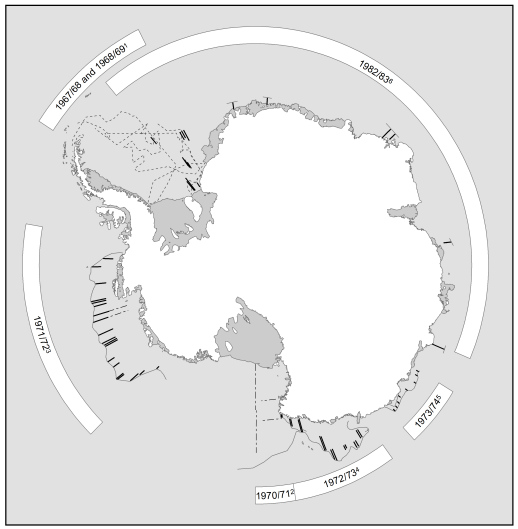


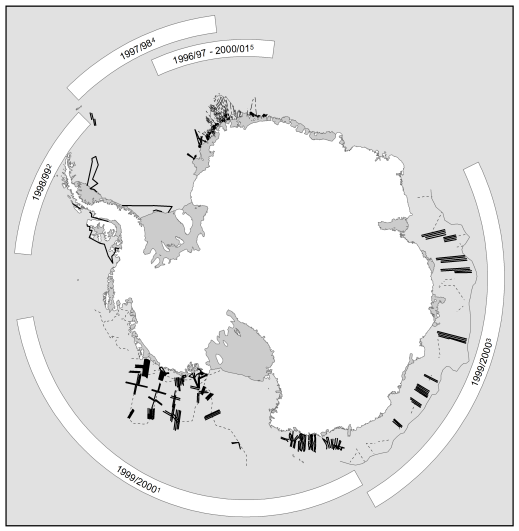
M. leonina

CAML-Atlas 2013

(Zirkum)Polare Robbenzensus

Zählungen





1968-‘74 - 30 x 10^6

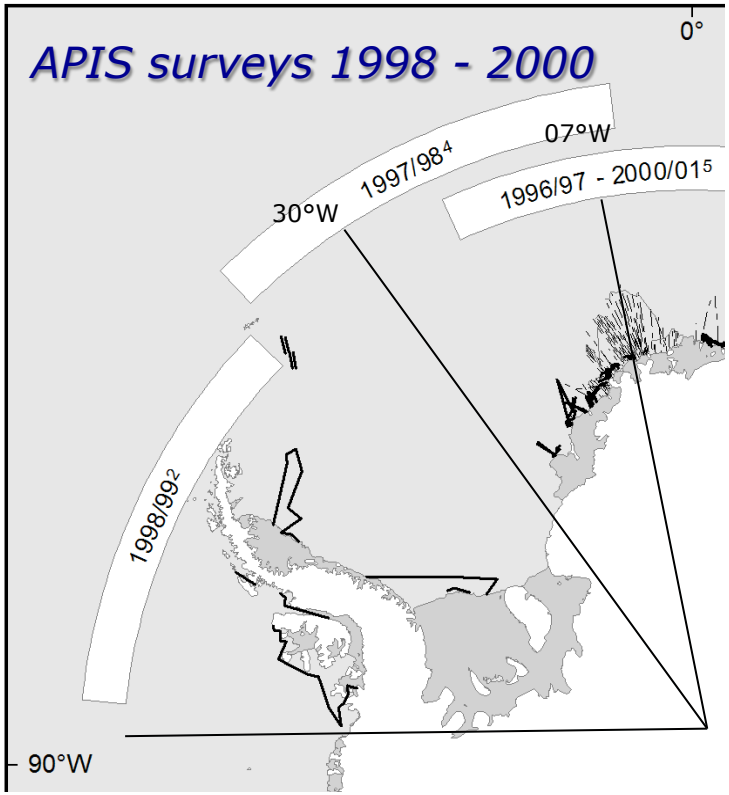
1983-‘83 - 12 x 10^6

1995-‘00 - 09 x 10^6

Southwell et al. 2012

Antarctic Pack Ice Seals

Zählungen



Krabbenfresser 90°W bis 30°W
3.187.000 (1.754.000–4.748.000)
3.564.000 *26°W bis 7°W*

Rossrobben *90°W bis 30°W*
Keine Schätzung (nur eine Sichtung)

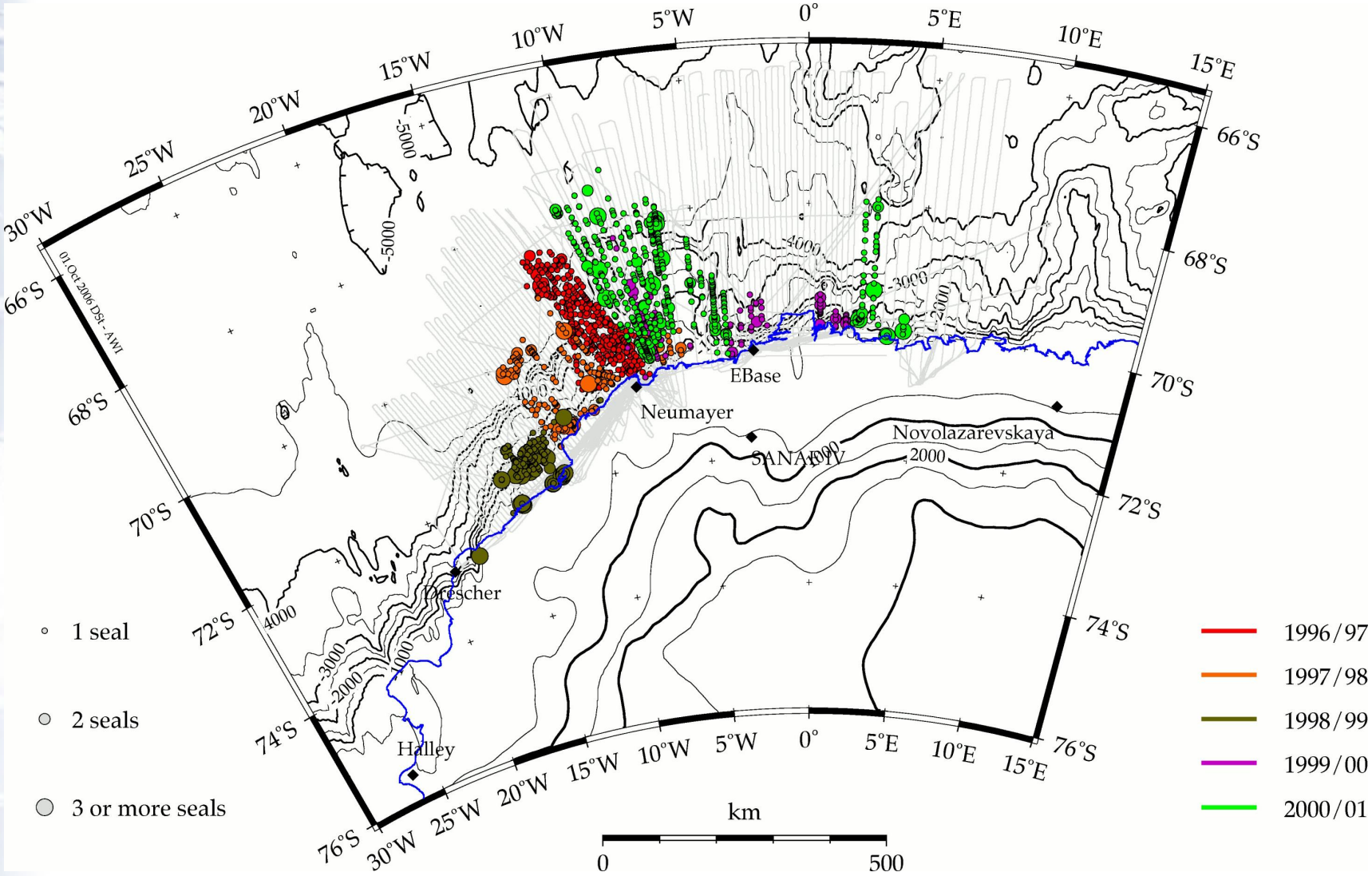
Seeleoparden *90°W bis 30°W*
13.200 (3.700–23.100)

Weddellrobben *90°W bis 30°W*
302.000 (77.000–576.000)

Southwell et al. 2012

APIS & AWI

Zählungen



APIS

Tauchverhalten

Species	Sector	Summer	Autumn	Winter	Spring	References
Weddell	70°W-30°E					12, 26, 27, 28
Ross	70°W-30°E					7, 8
Crabeater	70°W-30°E					1, 2, 3, 4, 5
Leopard	70°W-30°E					10, 11
Elephant	70°W-30°E					29, 30, 31

Modified after Southwell et al. 2012

The grey bars represent sectors and seasons where studies occurred; light grey represents diving depths of 0-100 m, dark grey > 100 m

Sources: [1] Bengston & Stewart (1992); [2] Hoffmann *et al*. (2002); [3] Burns *et al*. (2004); [4] Burns *et al*. (2008); [5] Nordøy *et al*. (1995); [7] Bengston & Stewart (1997); [8] Blix & Nordøy (2007); [10] Kuhn *et al*. (2006); [11] Nordøy & Blix (2009); [12] Plötz *et al*. (2001); [25] Fuiman *et al*. (2007); [26] Nichols *et al*. (2008); [27] Årthun *et al*. (2012); [28] McIntyre *et al*. (2012); [29] Tosh *et al*. (2009); [30] Biuw *et al*. (2010); [31] McIntyre *et al*. (submitted 2013)

Southwell et al. 2012

APIS

Nahrung

Species	Sector	Prey item	Summer	Autumn	Winter	Spring	References
Weddell	70°W-30°E	Fish	33-94	94	53	53-96	22, 23, 24, 25, 26, 27, 28
		Cephalopods	6-66	6	11	4-11	
		Crustaceans	1	×	1	1	
Ross	70°W-30°E	Fish	×	x	22	22	1, 9, 10, 11
		Cephalopods	×	x	64	64	
		Crustaceans			9	9	
Crabeater	70°W-30°E	Fish		×	3	3	1, 2, 3, 4, 5, 6
		Cephalopods			2	2	
		Crustaceans	×	×	94	94	
Leopard	70°W-30°E	Fish	3	3	13	53	1, 3, 12, 13, 14, 15, 16, 17, 18
		Cephalopods	1	1	1-11	11	
		Crustaceans	83	83	37	1	
		Birds	13	13-46	35	35	
		Seals	×	53	53	x	
Elephant	70°W-30°E	Fish	95				35
		Cephalopods					
		Crustaceans					

Modified after Southwell et al. 2012

Data obtained from analyses of scat (Sc), stomach contents (Sa), ratios of stable isotope in tissue (Is) and dive behaviour (D). Note × indicates the presence of a prey item where no proportion was given. Grey represents not yet compiled data.

Southwell et al. 2012

APIS

Nahrung

Modified after Southwell et al. 2012

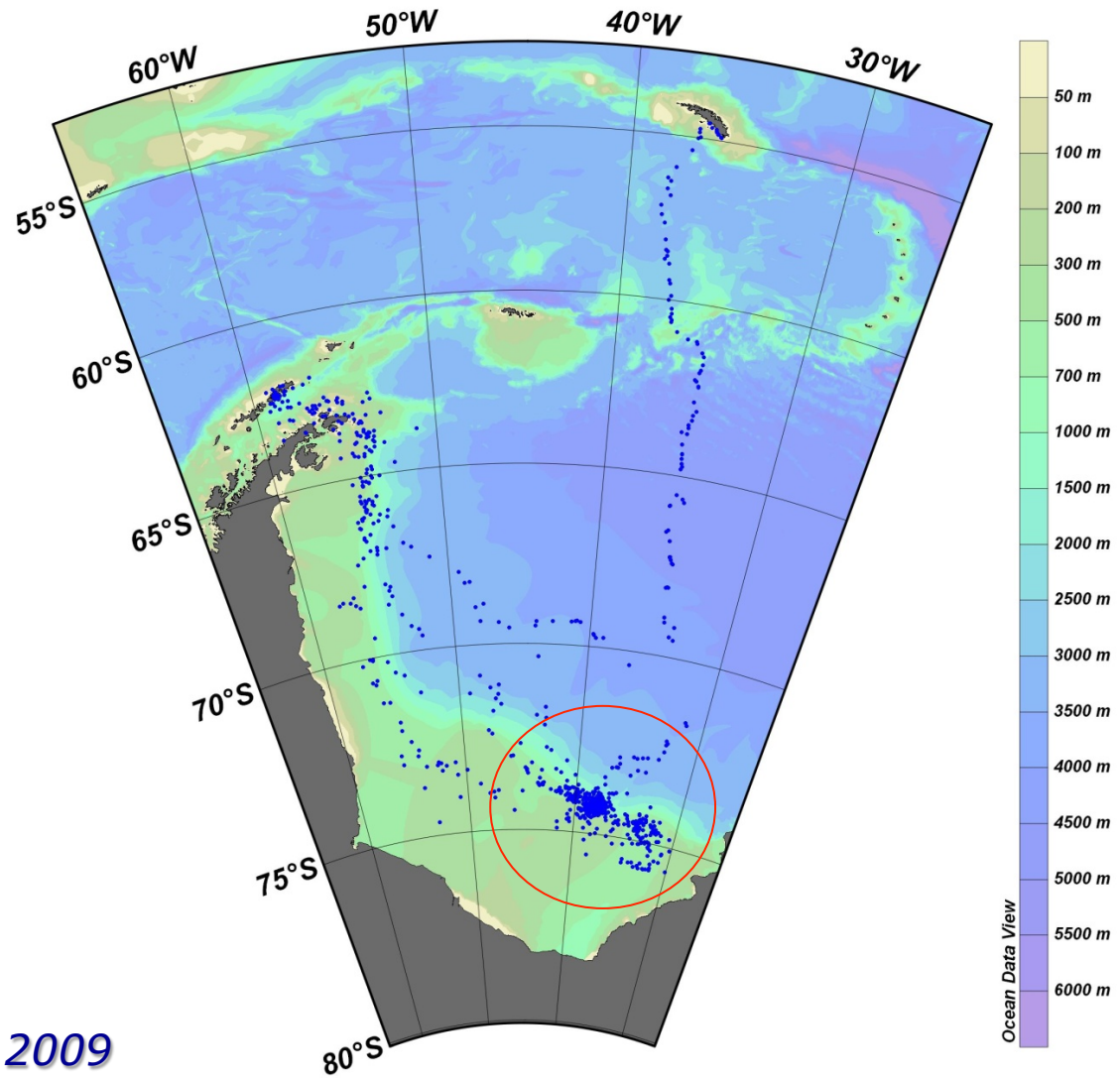
Data obtained from analyses of scat (Sc), stomach contents (Sa), ratios of stable isotope in tissue (Is) and dive behaviour (D). Note × indicates the presence of a prey item where no proportion was given. Grey represents not yet compiled data.

[1] Ørit sland (1977) (St, Sc); [2] Bengston (1982) (St); [3] Lowry et al. (1988) (St); [4] Burns et al. (2004) (Sc, D); [5] Burns et al. (2008) (Sc, D); [6] Nordøy et al. (1995) (D); [9] Bengston & Stewart (1997) (D); [10] Skinner & Klages (1994) (St); [11] Blix & Nordøy (2007) (D); [12] Hunt (1973) (O); [13] Stone & Meier (1981) (St); [14] Siniff & Stone (1985) (St); [15] Walker et al. (1998) (Sc); [16] Kuhn et al. (2006) (D); [17] Casaux et al. (2009) (Sc); [18] Nordøy & Blix (2009) (D); [22] Weiner (1981) (St); [23] Lipinski & Woyciechowski (1981) (St); [24] Clarke & McLeod (1982) (St); [25] Plötz (1986) (St); [26] Casaux et al. (1997) (Sc); [27] Casaux et al. (2006) (Sc); [28] Plötz (1991) (St).

Not yet compiled South Georgia: Laws 1956 (St); Rodhouse et al. 1992 (St); Brown et al. 1999 (St). South Orkneys: Clarke and MacLeod 1982 (St). King George Island, South Shetlands: Daneri et al. 2000 (St), [35] Daneri & Carlini 2002 (St).

Southwell et al. 2012

Regionale Daten nach APIS



Expeditionen 2013/14

Polarstern ANT XXIX/9

HOTFOS

SODFOS

BATFOS

SEAFOS

Dallmann ANT Land

Tosh et al. 2009
McIntyre et al. 2013