
WG-EMM-2019/05

Overview of the Weddell Sea MPA data layers stored in PANGAEA

Katharina Teschke, Hendrik Pehlke & Thomas Brey

CCAMLR EMM
June 24 - July 5, 2019 - Concarneau, France

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1. Pehlke, Hendrik; Brey, Thomas; Teschke, Katharina (2019): Spatial distribution of a **flying seabird** (Antarctic petrel) and **penguins** (Adélie penguin, Emperor penguin) in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.899520>
 2. Teschke, Katharina; Pehlke, Hendrik; Brey, Thomas (2019): Spatial distribution of **demersal and pelagic fishes** in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.899591>
 3. Pehlke, Hendrik; Teschke, Katharina (2019): **Pelagic regionalisation approach** in the wider Weddell Sea (Antarctica) with link to ArcGIS map package. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.899595>

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4. Pehlke, Hendrik; Brey, Thomas; Teschke, Katharina (2019): Spatial distribution of **seals** in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. PANGAEA, <https://doi.org/10.1594/PANGAEA.899619>
 5. Teschke, Katharina; Pehlke, Hendrik; Brey, Thomas (2019): Spatial distribution of **zoobenthos** (sponges, echinoderms) in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. PANGAEA, <https://doi.org/10.1594/PANGAEA.899645>
 6. Teschke, Katharina; Pehlke, Hendrik; Brey, Thomas (2019): Spatial distribution of **zooplankton** (Antarctic krill, ice krill) in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. PANGAEA, <https://doi.org/10.1594/PANGAEA.899667>



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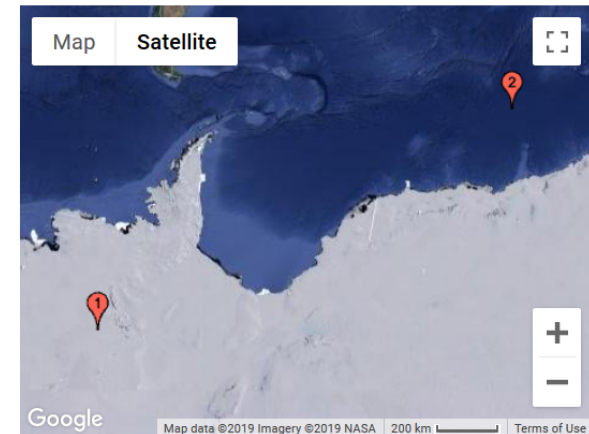
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Citation:

Teschke, Katharina; Pehlke, Hendrik; Brey, Thomas (2019): Spatial distribution of zoobenthos (sponges, echinoderms) in the wider Weddell Sea (Antarctica) with links to ArcGIS map packages. PANGAEA, doi: <https://doi.org/10.1594/PANGAEA.899645>

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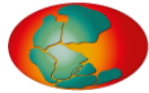
Abstract:

Here we provide two ArcGIS map packages with georeferenced files on the spatial distribution of sponges and echinoderms in the wider Weddell Sea (Antarctica), which were created in the context of the development of a marine protected area (MPA) in the Weddell Sea.

Sponges: The map of interpolated occurrence of sponges is based on quantitative abundance data (Gerdes 2014 a - o) and on semi-quantitative data obtained by W. Arntz (retired; formerly AWI) (see Teschke & Brey 2019a for presence / absence records of the latter dataset). The abundance data were classified to be merged with the semi-quantitative data and an inverse distance weighted method was performed on the united dataset. Areas with very common occurrence of sponges occurred on the shelf near Brunt Ice Shelf along Riiser - Larsen Ice Shelf to Ekstrøm Ice Shelf.


Echinoderms: A cluster analysis with species x station datasets of asteroids (Teschke & Brey 2019b), ophiuroids (Teschke & Brey 2019c) and holothurians (Gutt et al. 2014) from the Antarctic Weddell Sea indicated a particular cold-water echinoderm fauna on the Filchner shelf. We approximated this potential habitat by bottom temperature $\leq -1^\circ$, based on seawater temperature data from the Finite Element Sea Ice - Ocean Model provided by R. Timmermann (AWI).

More information on the spatial analysis is given in working paper WG-EMM-16/03 submitted to the CCAMLR Working Group on Ecosystem Monitoring and Management (available at <https://www.ccamlr.org/en/wg-emm-16>).











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Source data set:

- Gerdas, Dieter (2014):** Abundance of macrozoobenthos in surface sediments sampled during POLARSTERN cruise ANT-III/2. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.834009>
- Gerdas, Dieter (2014):** Abundance of macrozoobenthos in surface sediments sampled during POLARSTERN cruise ANT-IX/3. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.834013>
- Gerdas, Dieter (2014):** Abundance of macrozoobenthos in surface sediments sampled during POLARSTERN cruise ANT-VI/1. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.717708>
- Gerdas, Dieter (2014):** Abundance of macrozoobenthos in surface sediments sampled during POLARSTERN cruise ANT-VI/3. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.834017>
- Gerdas, Dieter (2014):** Abundance of macrozoobenthos in surface sediments sampled during POLARSTERN cruise ANT-VII/4. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.834021>
- Teschke, Katharina; Brey, Thomas (2019):** Abundance records of the five most abundant brittle star species (Ophiuroidea) from trawl, grab and trap samples in the Weddell Sea and neighbouring seas during POLARSTERN cruises ANT-I/2, ANT-II/4, ANT-V/3-4, ANT-VI/3, ANT-IX/3 and ANT-X/3. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.898773>
- Teschke, Katharina; Brey, Thomas (2019):** Presence and absence records of benthic taxa from trawl samples taken in the Weddell Sea (Antarctica) and neighbouring seas during POLARSTERN cruises ANT-VII/4, ANT-IX/3, ANT-XIII/3, ANT-XV/3, ANT-XVII/3 and ANT-XXI/2 between 1989 and 2004. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.899085>
- Teschke, Katharina; Brey, Thomas (2019):** Presence and absence records of sea star species (class: Asteroidea) from trawl, grab and trap samples in the Weddell Sea and western Antarctic Peninsula region during POLARSTERN cruises ANT-I/2, ANT-II/4, ANT-V/3, ANT-VI/3, ANT-XV/3 and ANT-XVII/3. *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA*,  <https://doi.org/10.1594/PANGAEA.898629>

Further details:

- Dahm, Corinna (1996):** Ökologie und Populationsdynamik antarktischer Ophiuroiden (Echinodermata) (Ecology and Population Dynamics of Antarctic Ophiuroids (Echinodermata)). *Berichte zur Polarforschung = Reports on Polar Research*, **194**, 289 pp,  https://doi.org/10.2312/BzP_0194_1996 
- Gerdas, Dieter; Hilbig, B; Montiel, A (2003):** Impact of iceberg scouring on macrobenthic communities in the high-Antarctic Weddell Sea. *Polar Biology*, **26(5)**, 295–301,  <https://doi.org/10.1007/s00300-003-0484-1> 
- Gerdas, Dieter; Klages, Michael; Arntz, Wolf E; Herman, R L; Galeron, Joelle; Hain, Stefan (1992):** Quantitative investigations on macrobenthos communities of the southeastern Weddell Sea shelf based on multibox corer samples. *Polar Biology*, **12(2)**,  <https://doi.org/10.1007/BF00238272> 
- Gutt, Julian (1988):** Zur Verbreitung und Ökologie der Seegurken (Holothuroidea, Echinodermata) im Weddellmeer (Antarktis) (On the Distribution and Ecology of Sea Cucumbers (Holothuroidea, Echinodermata) in the Weddell Sea (Antarctica)). *Berichte zur Polarforschung = Reports on Polar Research*, **41**, 87 pp,  https://doi.org/10.2312/BzP_0041_1988 



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
Project(s): **Functional Ecology @ AWI** (AWI_FuncEco) 

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Sponges Porifera interpolated presence	Sponges_Porifera_interpolated_presence	PNG	708.196	Link
Data shapefile raster	Data_shapefile_raster	ZIP	2080.769	Link
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Sponges Porifera interpolated presence	Sponges_Porifera_interpolated_presence	PNG	708.196	Link
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		PNG	708.196	Link
		ZIP	2080.769	Link
		ZIP	2453.887	Link

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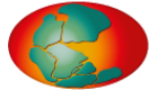
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 Antarctica	File folder

Name	Type	Compressed size	Password p...	Size
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 Antarctica.dbf	DBF File	1 KB	No	70 KB
 Antarctica.prj	PRJ File	1 KB	No	1 KB
 Antarctica.qpj	QPJ File	1 KB	No	1 KB
 Antarctica.sbn	SBN File	3 KB	No	7 KB
 Antarctica.sbx	Adobe Illustrator Tsume Fi...	1 KB	No	1 KB
 Antarctica.shp	SHP File	393 KB	No	502 KB
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 Antarctica.shp.xml	XML Document	6 KB	No	13 KB
 Antarctica.shx	SHX File	3 KB	No	6 KB

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 thematic_layer	File folder



Name	Type	Compressed size	Password p...	Size
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 Echinoderm_potential_habitat.dbf	DBF File	1 KB	No	1 KB
 Echinoderm_potential_habitat.prj	PRJ File	1 KB	No	1 KB
 Echinoderm_potential_habitat.sbn	SBN File	1 KB	No	1 KB
 Echinoderm_potential_habitat.sbx	Adobe Illustrator Tsume Fi...	1 KB	No	1 KB
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 Echinoderm_potential_habitat.shx	SHX File	1 KB	No	1 KB
 Echinoderm_potential_habitat.xml	XML Document	1,003 KB	No	1,555 KB
 Sponges_porifera_Interpolated_presence.tfw	TFW File	1 KB	No	1 KB
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