Data repository of GAME project
- an overview

GAME Geoportal
- data availability

Instytut Oceanologii PAN
w Sopocie
Joanna Pardus
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GAME final meeting, 25th of April 2016

WP5.2 quiddity

WP5.2 Data base and data visualisation

The aim of this task is to design and deploy storage and enable accessibility of the data collected within project frame. As the project shall demonstrate the potential of IO PAN research team in international networks, all data are intended to be available free within one year after the project completion.

Georeferenced data will be visualized in the form of GIS maps (Geographic Information System) and raw data will supply ZSPDO (Integrated Ocean Data and Information Processing System).

Metadata

GAME :: Formularz opisu metainformacji

A. Dostawca

A.1	Provider.Akronim	*Nazwa instytucji / akronim*
A.2	Provider.Name	*Angielska nazwa instytucji*
A.3	Provider.Affiliation	*Afiliacja*
A.4	Provider.Address	*Adres do korespondencji*
A.5	Provider.URI	*Adres strony www*

B. Osoba tworząca kolekcję danych

B.1	Person.Name	
B.2	Person.LastName	
B.3	Person.eMail	
B.4	Person.Department	*Nazwa jednostki organizacyjnej do afiliacji*

C. Opis zestawu danych (sekcja wielokrotnie uzyta dla każdego zestawu)

C.1	Dataset.UniqeID	*Identyfikator kolekcji danych*
C.2	Dataset.SpatialDistribution	*[Point, Transect, Polygon]*
C.3	Dataset.Extension	*[2D, 3D]*
C.4	Dataset.Geo	*System geodezyjny uzyty dp oznaczenia koordynat*
C.5	Dataset.Format	*Format danych: ascii, binarny, DRDS, NetCDF, SHP, etc.*
C.6	Dataset.Volume	*Rozmiar zestawu w b*
C.7	Dataset.FreqAvailability	*Częstotliwość dostarczania*
C.8	Dataset.QualityAssurance	*Używane procedury zapewnienia jakości danych.*
C.9	Dataset.Citation	*Sposób cytowania*

D. Opis parametru (sekcja wielokrotna dla każdego parametru)

D.1	Parameter.DatasetID	*Jak C.1*
D.2	Parameter.Name	*n.p. Seabed layer water temperature*
D.3	Parameter.PhysicalValue	*n.p. Celciusz*
D.4	Parameter.Denomination	*n.p. stopień*
D.5	Parameter.OuterNameVoc	*Nazwa używanego standardu (n.p. BODC)*
D.6	Parameter.OuterName	*Nazwa parametru w używanym standardzie*
D.7	Parameter.Instrument	*Nazwa przyrządu pomiarowego*
D.8	Parameter.AddInfo	*Inne istotne informacje*

E. Wymagania funkcjonalne

…czyli w jaki sposób informacja ma być udostępniania (format, protokół), do jakich innych systemów ma być przekazywana w sposób automatyczny, w jaki sposób ma być sprawdzane prawo dostępu do informacji, etc..

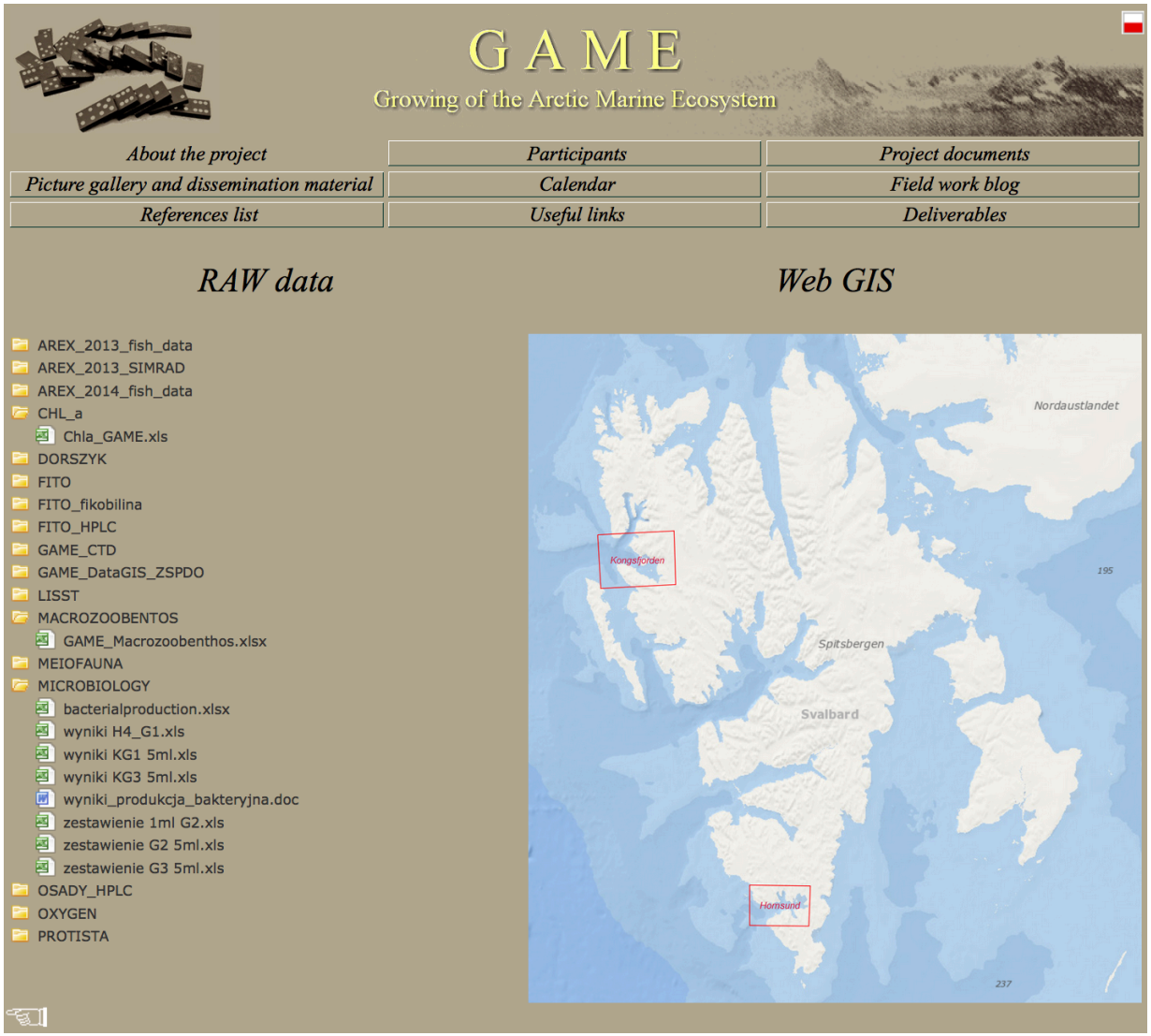
F. Wymagania niefunkcjonalne

Pozostałe wymagania co do bazy danych – źródła map podkładowych, lini brzegowej, etc..

Data facts

- 20 GB data volume
- 2000 data files
- 14 data themes
- Future actions:
  - Metadata discovery
  - Ananlysis of data and metadata usage
  - Data deployment to ZSPDO
  - Cooperation with international data centres and initiatives: ICES, SeaDataNet

Data portal



http://www.iopan.pl/projects/Game/data

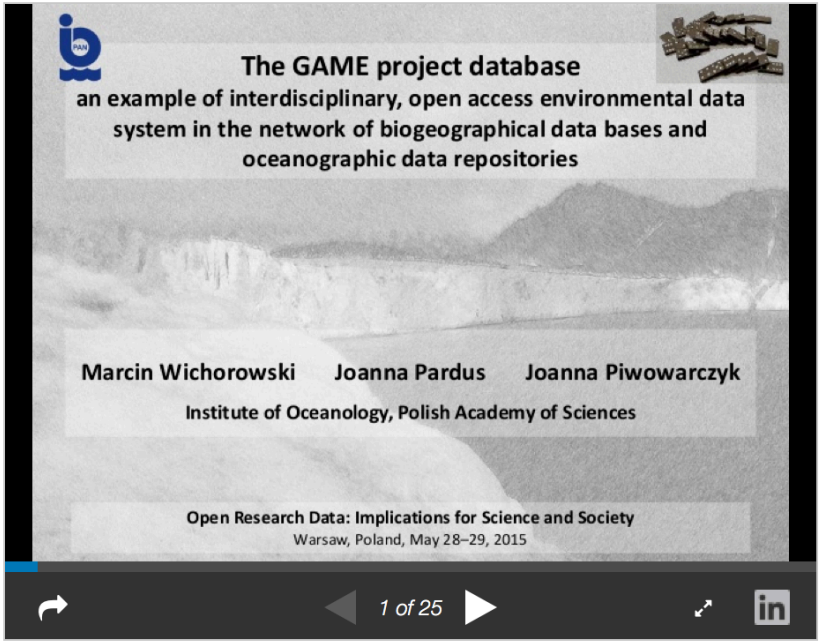
Data themes

1. **Archival meteorological data from Hornsund and Kongsfjorden – for the model**, Data from NyAlesund, Hornsund meteo stations 2000-2012, digitalised,
2. **Hydrological data from 2013 spring/summer**, Data from CTD profiles ,
3. **Archival hydrological data 2000- 2012**, Data from fjords cross sections , ,
4. **GIS maps of Hornsund and Kongsfjorden – bathymetry**, Maps ready to be used and presented on the web page
5. **Microplankton spring and summer 2013 data**, Taxa lists, density and biomass from stations
6. **Mesozooplankton spring & summer 2013 data**, Taxa lists, density and biomass from stations
7. **Bacterial production 2013**, Production value in water column and sediment,
8. **Bacterial density/biomass 2013**, Density and biomass data Water column & sediment
9. **Benthos density and biomass 2013**, Taxa lists, density and biomass from stations
10. **Respiration measurements 2013**, Data on sediment and taxa respiration ,
11. **Fish hydroacoustic survey**, Data on fish density on profiles
12. **Euphotic layer measurements**, Data on surface suspensions, satellite imagery of suspensions distribution in two fjords, calculation of euphotic layer thickness
13. **Sedimentation rates**, Data from two stations in two fjords, summer
14. **Sediment & water column biogeochemistry**, Data from two stations in two fjords, summer

Open Research Data 2015

The GAME project database – an example of interdisciplinary, open access environmental data system in the network of biogeographical data bases and oceanographic data repositories

Marcin Wichorowski, Institute of Oceanology, Polish Academy of Sciences



http://pon.edu.pl/index.php/conferences?confid=10%23/#/presentation/42

Open Research Data 2015

The GAME project database – an example of interdisciplinary, open access environmental data system in the network of biogeographical databases and oceanographic data repositories

Marcin Wichorowski, Joanna Pardus, Joanna Piwowarczyk
Institute of Oceanology Polish Academy of Sciences, Sopot, Poland

http://pon.edu.pl/index.php/conferences?confid=10%23/#/presentation/42

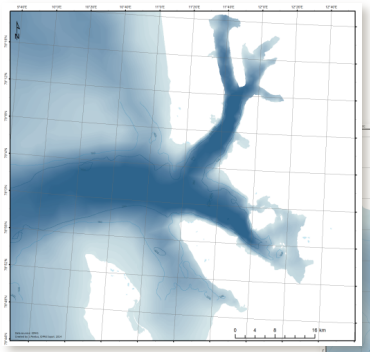
The GAME (Growing of the Arctic Marine Ecosystem) project is bright example of novel multidisciplinary approach to environmental studies focusing on hypothesis of the ageing Arctic marine ecosystem in the course of global warming. Interdisciplinary nature of the project and the extent of research both correlate with high volume of data collected within surveys frame. The nature of data is heterogeneous in the context of domains, originators, methodologies, temporal and spatial resolution, structures, parameters and processing regimes. Project studies depend also on data archives and content of oceanographic data centres. The key factors of the efficient data management processes is open access to research data repositories and seamless transfer of collected data to dedicated data centres, both.

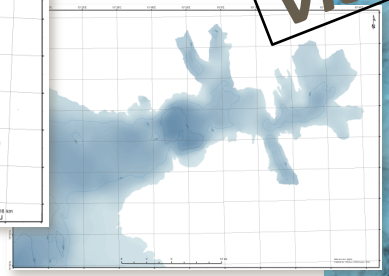
To foster interoperability of data management processes and make the GAME database ready to use for different identified groups of users, data is enhanced with metadata compatible with standards developed within the SeaDataNet project. The majority of European national and dedicated oceanographic data centres use vocabularies, descriptors, data acquisition methods and data quality assurance procedures compounding SDN infrastructure. Preserving compatibility with widely used standards of data and information exchange is necessary to fill requirement of the financing programme to provide open access to data for all potential bodies interested in data use and reuse.

The most important part of the data management process is interaction with "end users" of the database to identify user profile, what kind of data are the most interested to users, what kind of delivery mechanisms are most efficient for users, whether they prefer web form, direct access to the database, GIS services or even 3D morphing to visualize data.

Using GIS: visualization

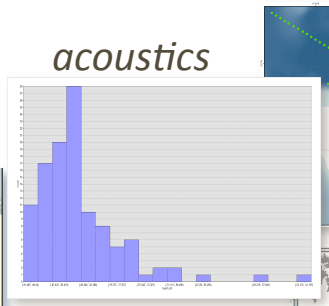
bathymetry (modelled)

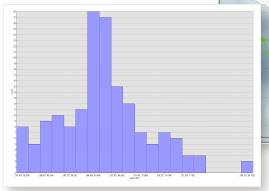


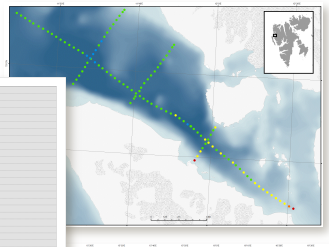


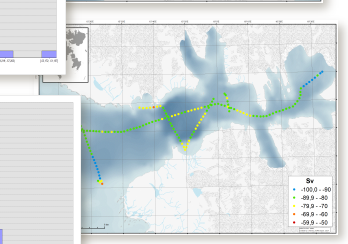
visualization

acoustics

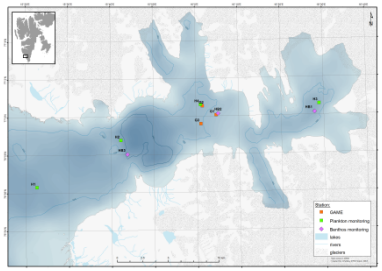


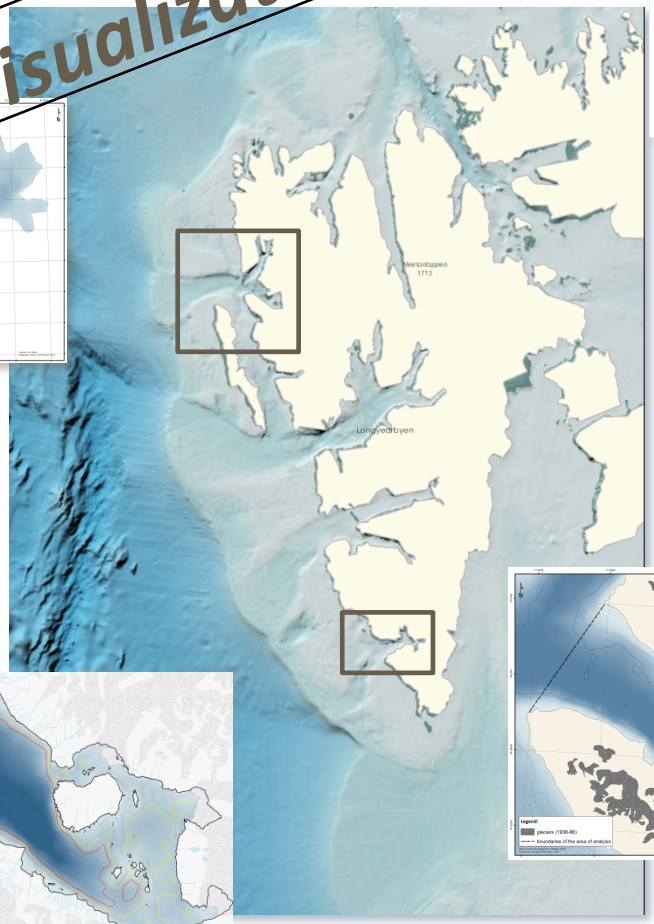


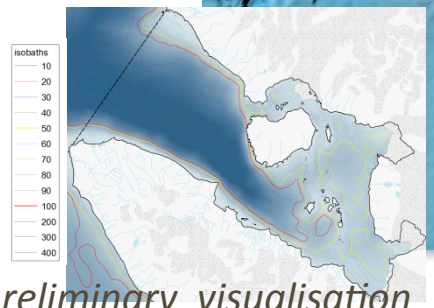




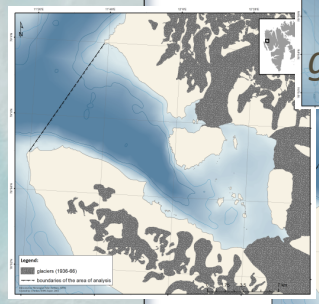
station location

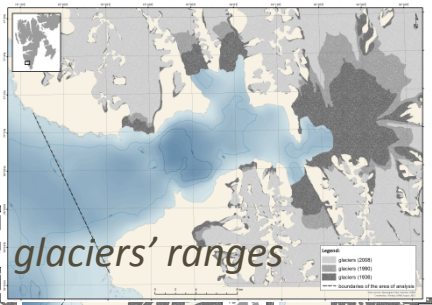




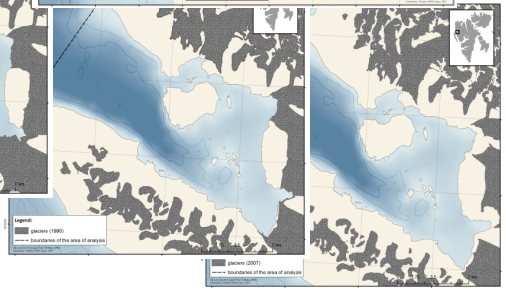


preliminary visualisation





glaciers' ranges

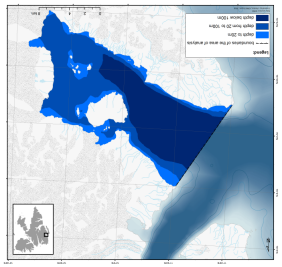


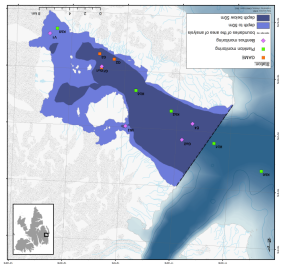
1936-66

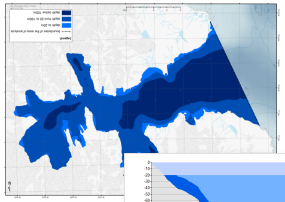
1990

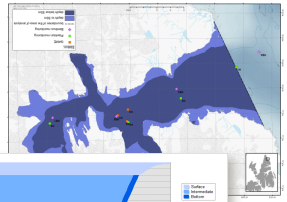
2007

Using GIS: spatial analysis



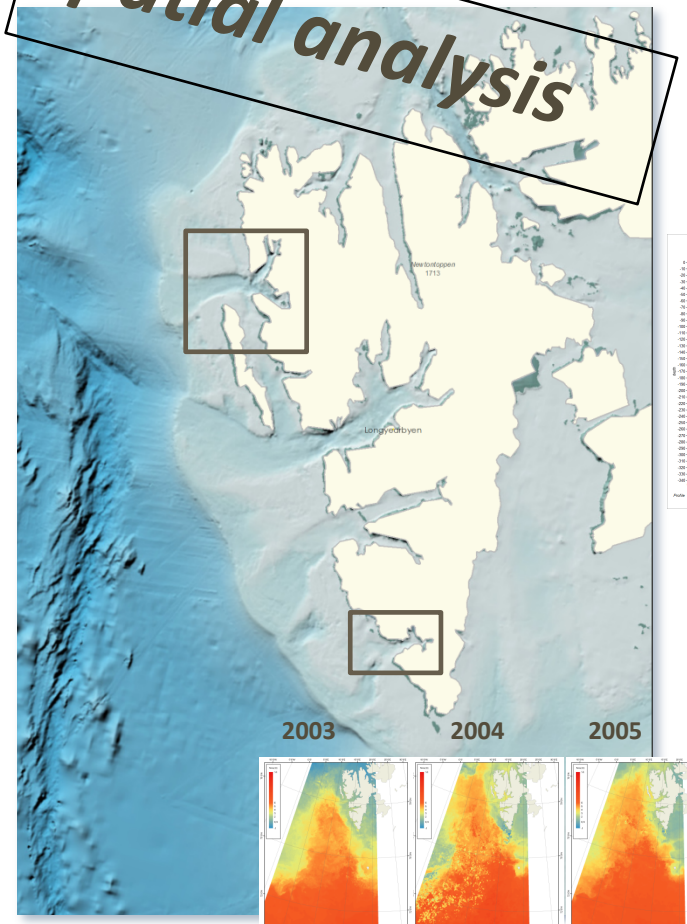


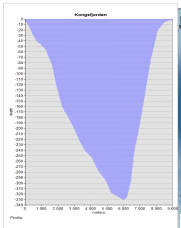


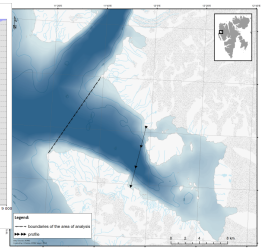


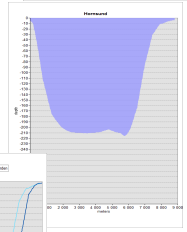
fiord topography

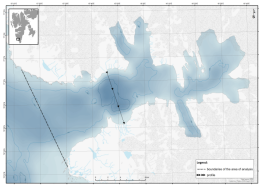
spatial analysis

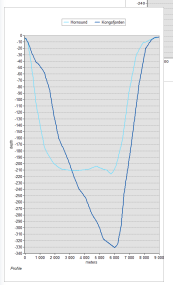










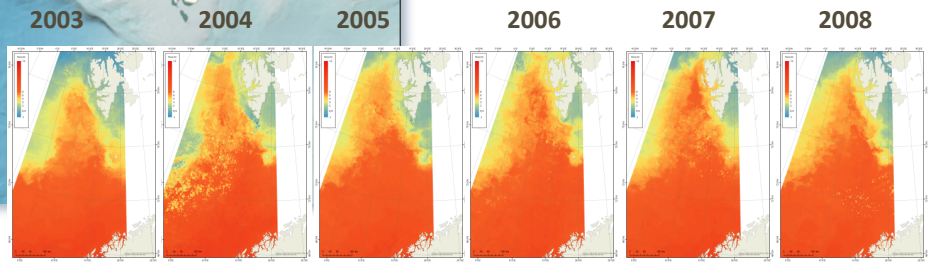


depth profiles

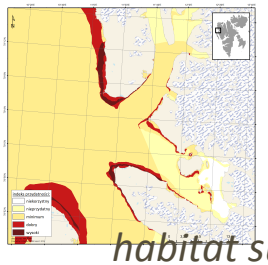
Area [sq.km]	to 20	from 20 to 100	below 100m	all area
Kongsfjorden	35,82	94,38	93,72	223,92
Hornsund	35,53	167,41	109,87	312,82

Volume [cub.km]	surface	intermediate	near bottom	full volume
Kongsfjorden	4,14	17,42	3,36	
Hornsund	6,07	14,36		

calculations

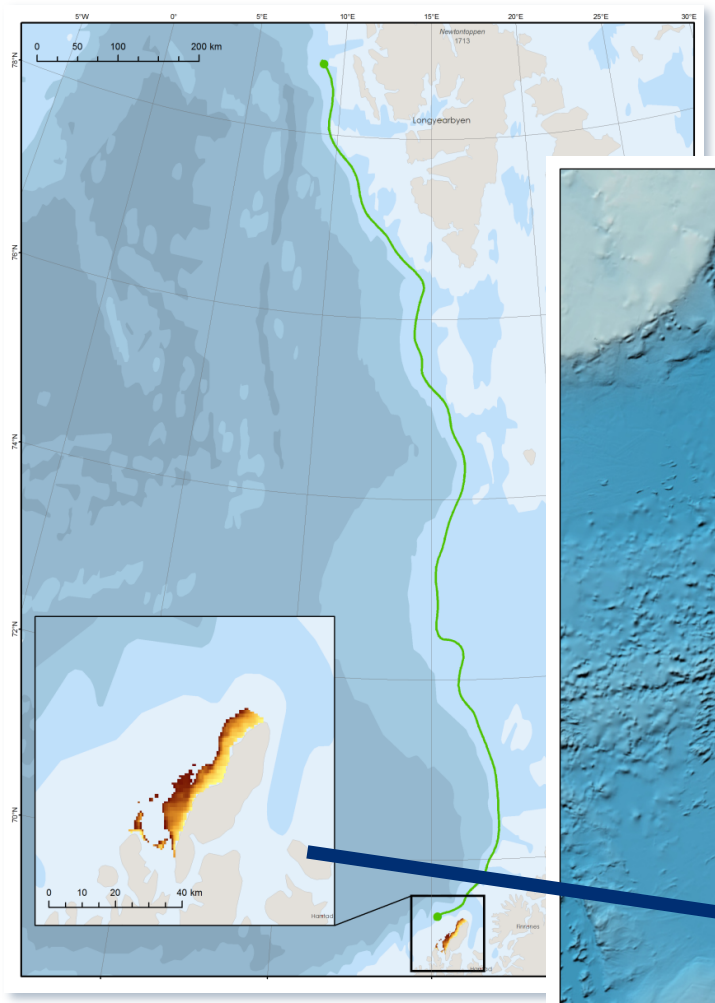


źródło: Giovanni online system

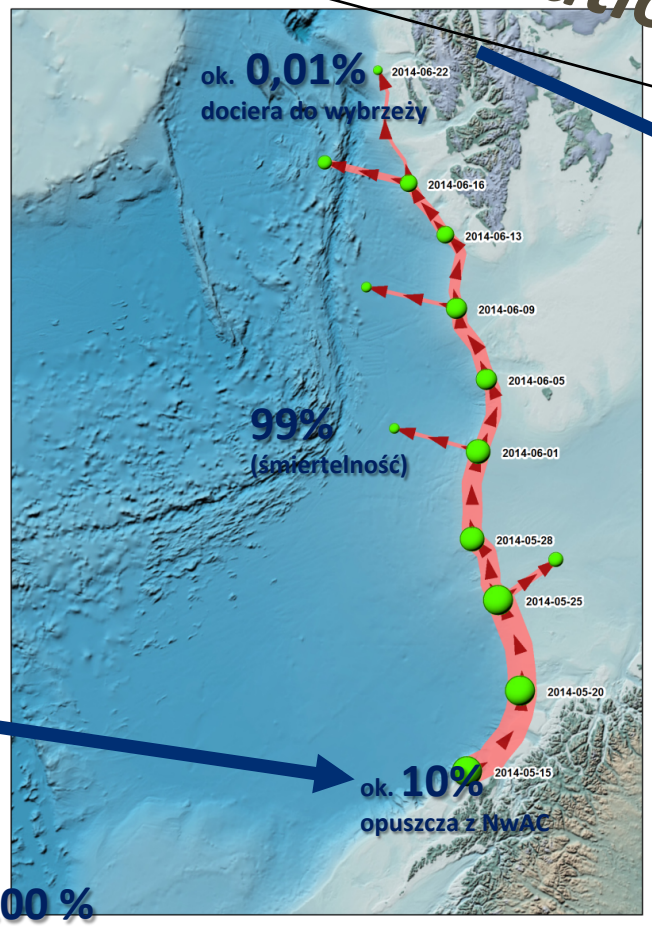


habitat suitability

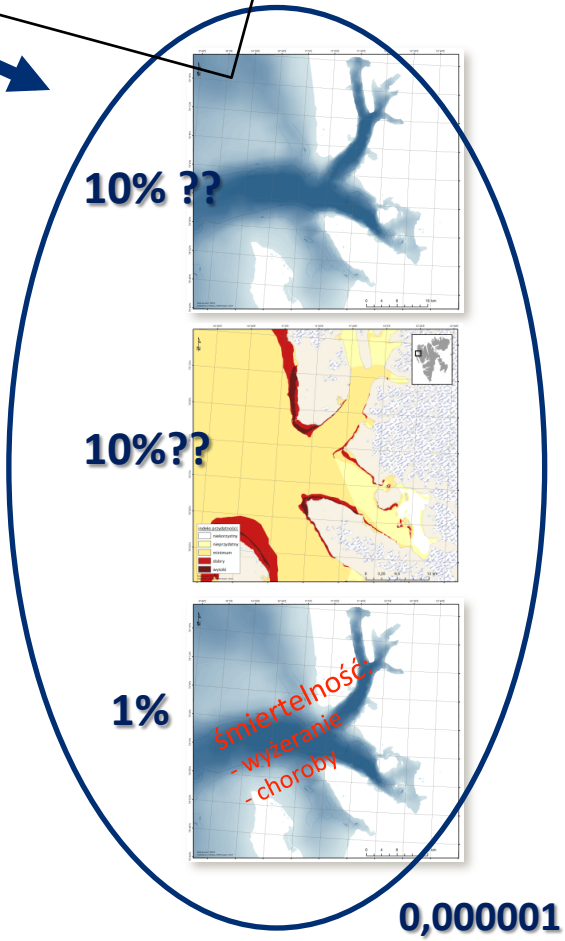
Using GIS: projects



symulation



100 %
w kolumnie wody



GIS w nauce 2015

IV konferencja

GIS w nauce

1-3 czerwca 2015

Wydział Nauk Geograficznych i Geologicznych UAM

GIS KONTAKT DO POBRANIA GALERIA HISTORIA

GIS jako platforma integracji danych oraz wiedzy z różnych gałęzi oceanologii na przykładzie projektu GAME

Instytut Oceanologii PAN
w Sopocie
Joanna Pardus
Marcin Wichorowski

GAME online

GAME GISdata availability:

Kongsfjorden:

Hornsund:

Dziękuję za uwagę!