Science, Service, Stewardship

EcoDAAT - EcoFOCI Data Access and Analysis Tools

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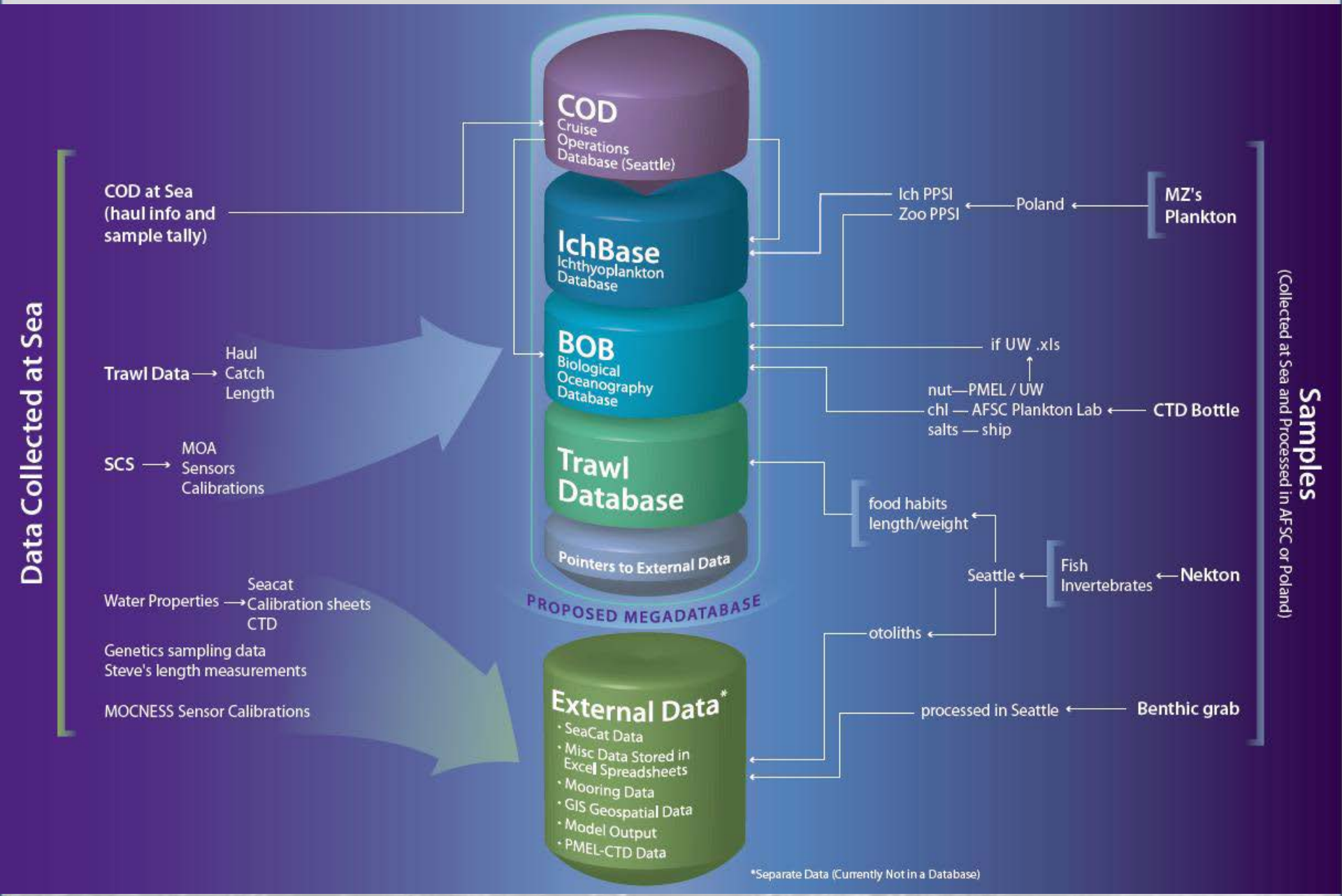
EcoFOCI and Data

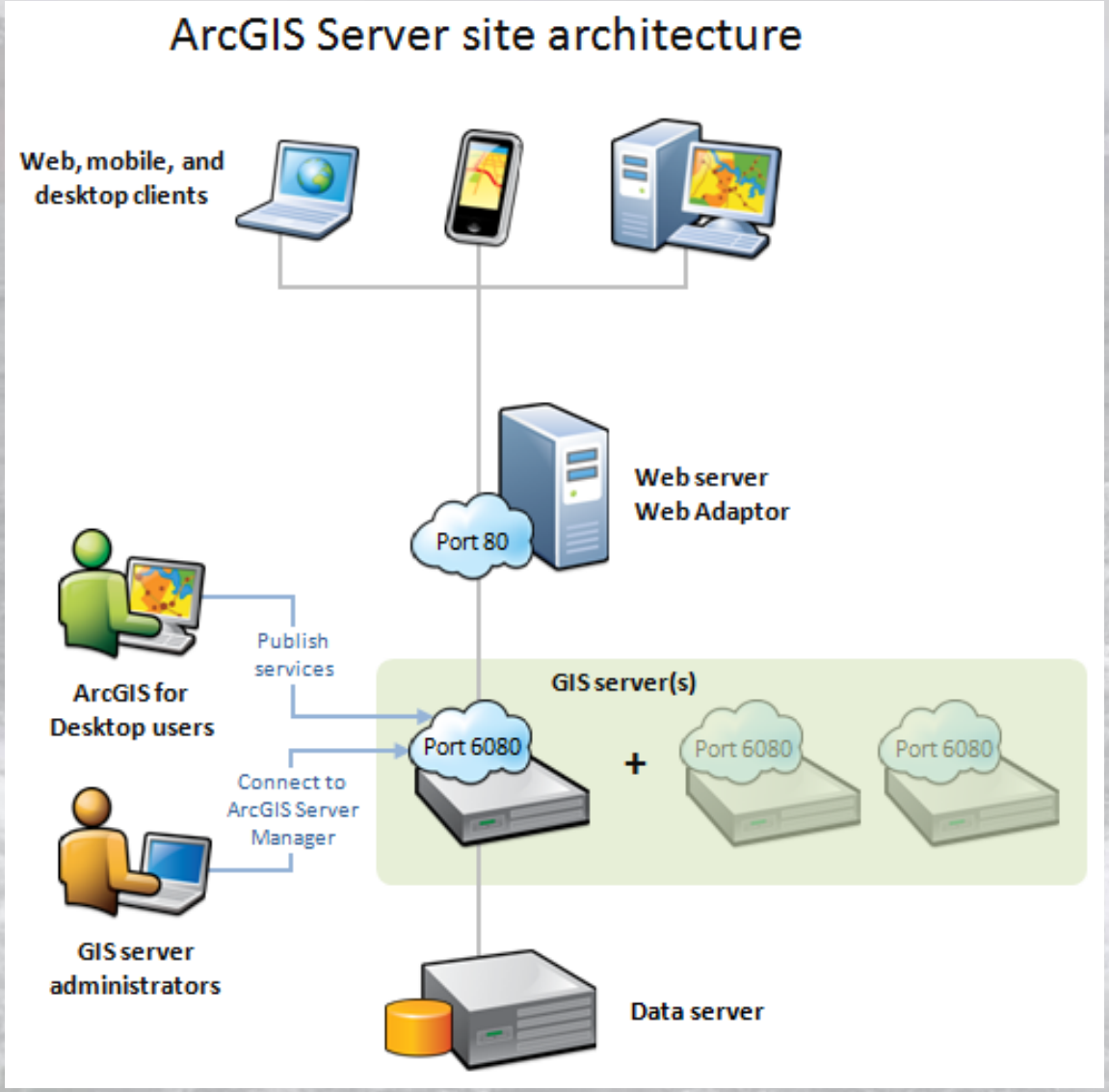
- EcoFOCI includes physical and biological studies for fisheries oceanography in the Bering, Gulf of Alaska and now Arctic
- Microcosm of DBO data and participants
- Existing separate databases for ichthyoplankton, zooplankton, chemistry, CTD data
- Creating a unified Oracle database with an ArcGIS application for data selection and analysis

Sample and Data Types

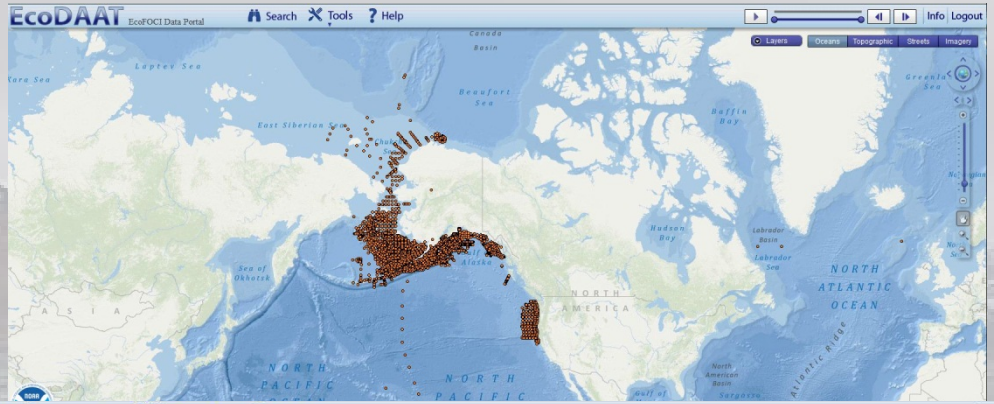
- Oceanographic data – CTD, water chemistry, nutrients
- Biological data – zooplankton and ichthyo-plankton samples, nekton samples, diet studies
- Modeling – currents, temperature, salinity, particle-tracking
- Ancillary data – station location, weather conditions, sample information


Data Collected at Sea
COD at Sea (haul info and sample tally)
Trawl Data → Haul Catch Length
SCS → MOA Sensors Calibrations
Water Properties → Seacat Calibration sheets CTD
Genetics sampling data
Steve's length measurements
MOCNESS Sensor Calibrations
COD Cruise Operations Database (Seattle)
IchBase Ichthyoplankton Database
BOB Biological Oceanography Database
Trawl Database
Pointers to External Data
PROPOSED MEGADATABASE
External Data*
· SeaCat Data
· Misc Data Stored in Excel Spreadsheets
· Mooring Data
· GIS Geospatial Data
· Model Output
· PMEL-CTD Data
*Separate Data (Currently Not in a Database)
Ich PPSI
Zoo PPSI
Poland
MZ's Plankton
if UW .xls
nut—PMEL / UW
chl — AFSC Plankton Lab
salts — ship
CTD Bottle
food habits
length/weight
Seattle
Fish
Invertebrates
Nekton
otoliths
processed in Seattle
Benthic grab
Samples
(Collected at Sea and Processed in AFSC or Poland)

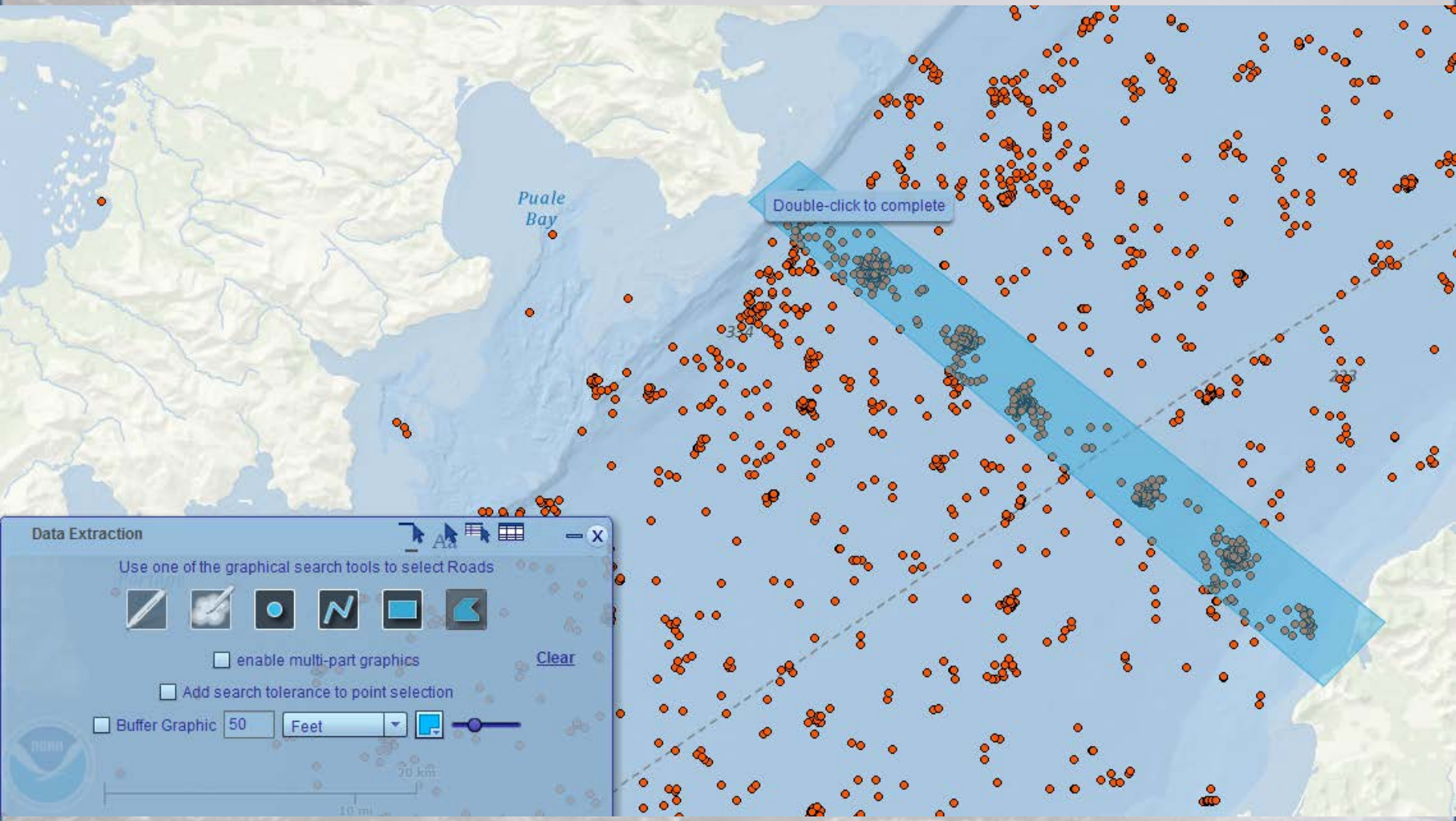
EcoDAAT Architecture



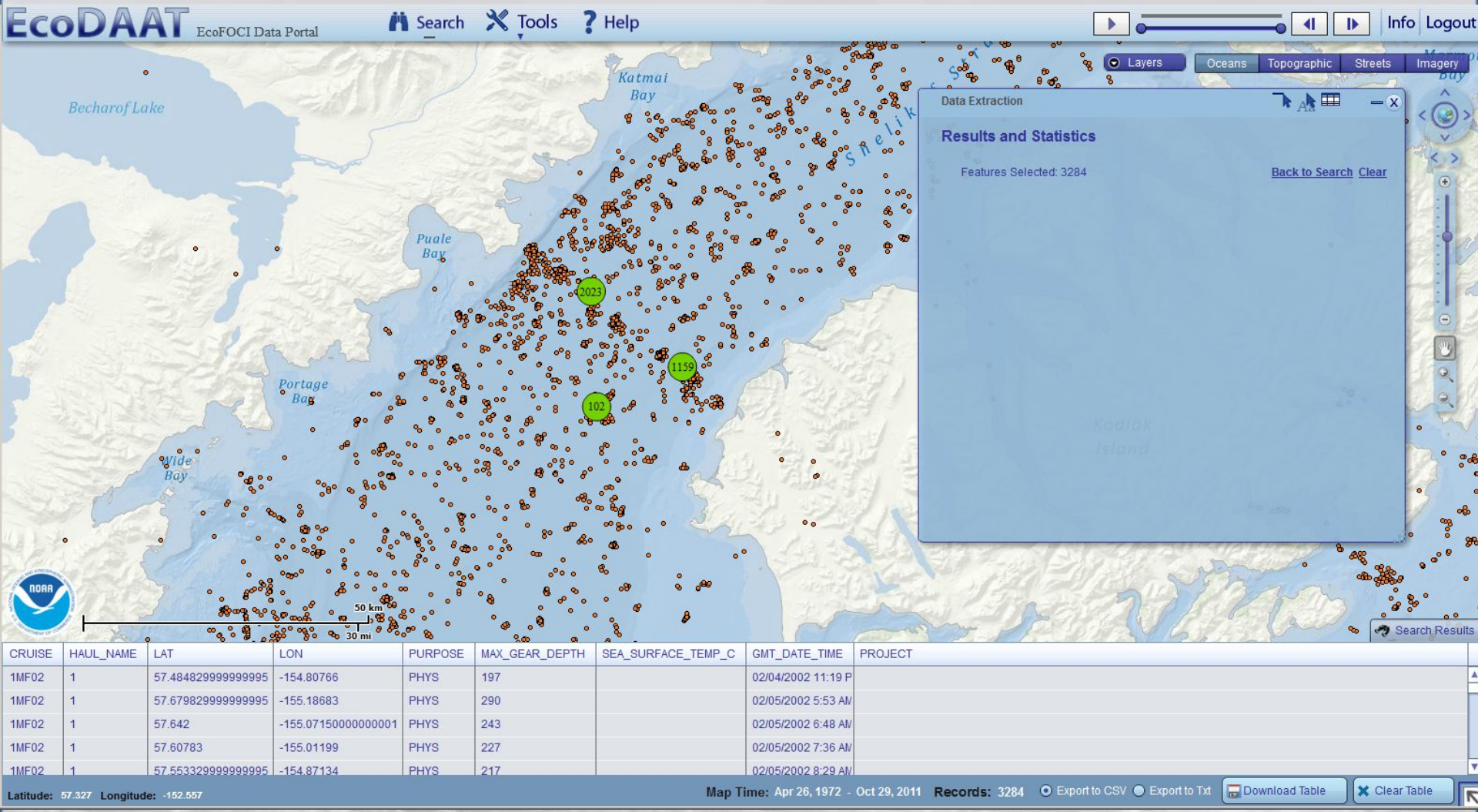
Main Interface



Map-based Data Selection



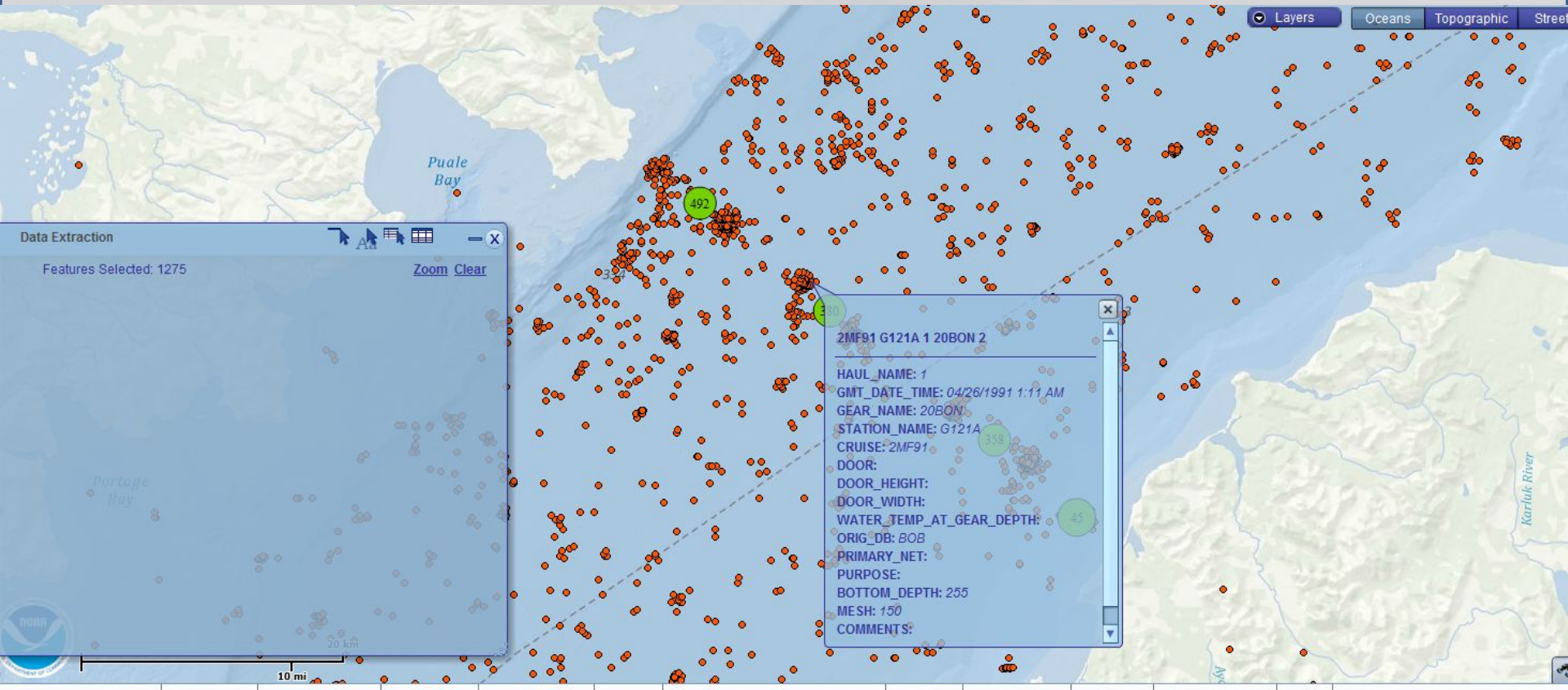
Results



CRUISE	HAUL_NAME	LAT	LON	PURPOSE	MAX_GEAR_DEPTH	SEA_SURFACE_TEMP_C	GMT_DATE_TIME	PROJECT
1MF02	1	57.484829999999995	-154.80766	PHYS	197		02/04/2002 11:19 P	
1MF02	1	57.679829999999995	-155.18683	PHYS	290		02/05/2002 5:53 AM	
1MF02	1	57.642	-155.07150000000001	PHYS	243		02/05/2002 6:48 AM	
1MF02	1	57.60783	-155.01199	PHYS	227		02/05/2002 7:36 AM	
1MF02	1	57.553329999999995	-154.87134	PHYS	217		02/05/2002 8:29 AM	

Latitude: 57.327 Longitude: -152.557 Map Time: Apr 26, 1972 - Oct 29, 2011 Records: 3284 Export to CSV Export to Txt Download Table Clear Table

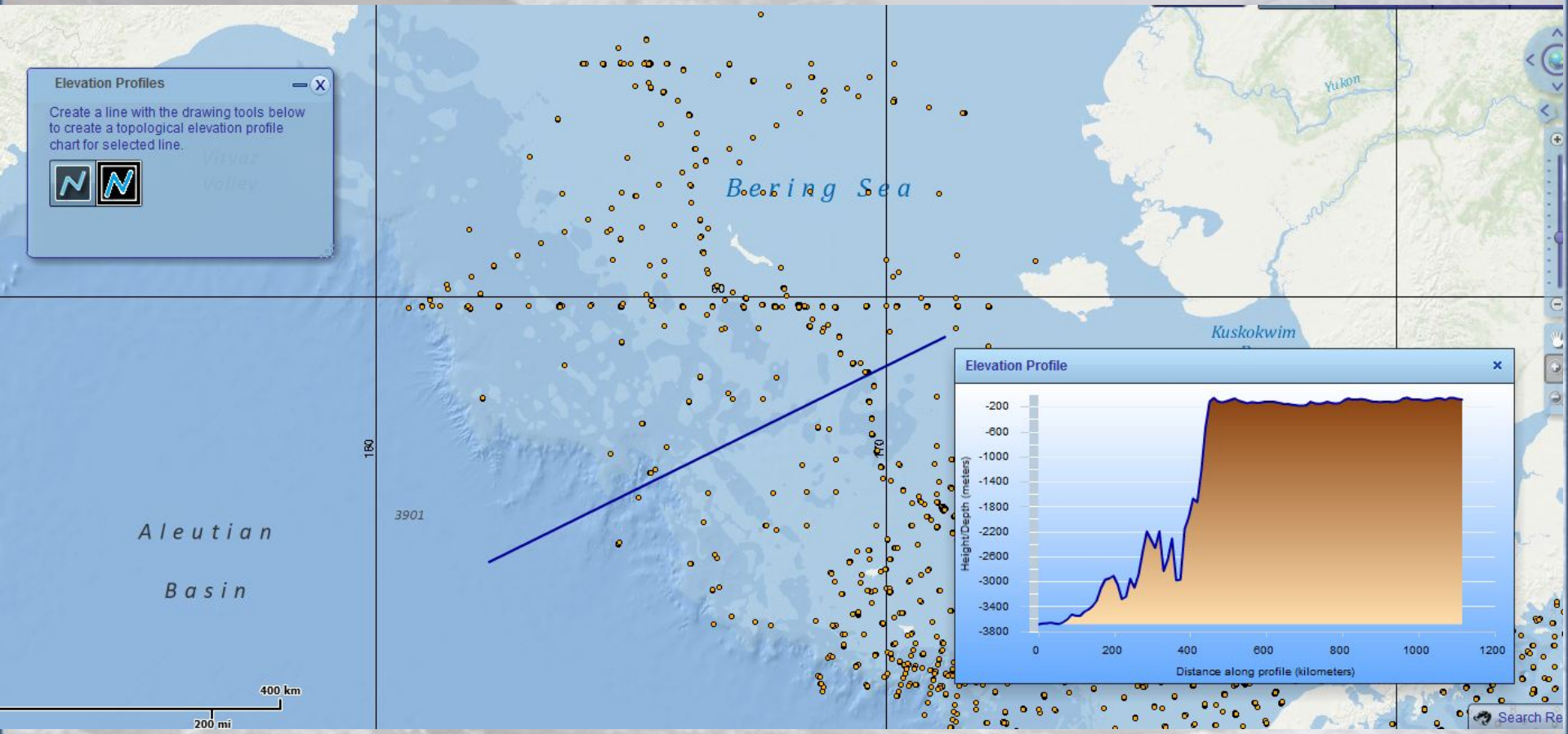
Querying and Exporting Data



HAUL_ID	HAUL_NAME	GMT_DATE_TIME	GEAR_NAME	STATION_NAME	CRUISE	WATER_TEMP_AT_GEAR_DEPTH	ORIG_DB	PRIMARY_NET	PURPOSE	BOTTOM_DEPTH	MESH	COMMENTS
2MF93 18 1 LG-CB 2	1	04/05/1993 4:17 AM	LG-CB	18	2MF93		ICHBASE	Y	OTHER	256	505	PART OF PREDATOR STUDY.
2MF88 G004A 1 60BON 1	1	04/17/1988 9:05 AM	60BON	G004A	2MF88		ICHBASE	Y	PLNKSURV	257	333	Wire angle at 30 deg.
2MF93 18 1 LG-CB 1	1	04/05/1993 4:17 AM	LG-CB	18	2MF93		ICHBASE	Y	OTHER	256	505	PART OF PREDATOR STUDY. Wire ang
2MF91 G121A 1 20BON 2	1	04/26/1991 1:11 AM	20BON	G121A	2MF91		BOB			255	150	

Map Time: Apr 26, 1972 - Oct 29, 2011 **Records:** 1275 Export to CSV Export to Txt Download Table Clear Table

Spatial Analyses



Tiered Access

- Takes about 1 – 1.5 years from sample collection to completion of full QA/QC
- Ichthyoplankton and zooplankton samples sent to Poland for processing and identification. Verified at AFSC
- 3 levels of access
  - Full database for local researchers
  - 2 years and older for collaborators
  - 5 years and older for general public

Implementation in the Cloud

- Technically straightforward
- Authentication allows public presence of web front end
- Limiting denial of service attacks
- Security concerns about cloud deployment
- FISMA certification
- Updates and recertification