**2012 Seacat Data Documentation Form**

**Data submission to NOAA/PMEL**

**Date: 6/24/13**

**Section 1. Contributor Identification**

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**Section 2. General Dataset Description**

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| 1. Dataset Title: IPHC Oceanographic dataset |
| 2. Dataset Abstract: The IPHC conducts an annual longline fish survey on a 10x10 nautical mile grid from southern Oregon north to the Gulf of Alaska, out along the Aleutian Island chain, and into the Bering Sea in depths ranging from 30 to 500 m. Beginning in 2000, the IPHC conducted a pilot project looking at the practicality of collecting oceanographic profile data alongside fishery data at the longline survey stations. The project was expanded to stations off Oregon in 2007 and coast-wide starting in 2009. Profiles were taken at each station immediately prior to hauling the longline gear so that oceanographic data collection is coincident with the haul. The data collected are surface to depth profiles of pressure (depth), temperature, conductivity (salinity), dissolved oxygen, pH, and chlorophyll *a* concentration. |
| 3. Dataset purpose/general description: Surface to depth profiles are collected at each of about 1200 longline fishing stations in the IPHC survey. The geographic range of the survey allows the IPHC to take an oceanographic “snapshot” each summer of conditions along the continental shelf in the north Pacific and parts of the Bering Sea that will likely be useful to researchers worldwide as the time series builds. Furthermore, collecting these data coincident with longline survey fishing enables stock assessment scientists to examine the role of oceanographic conditions in relation to distributions of commercially caught groundfish. |
| 4. Dataset collection datesFirst day of data collection: 6/16/12Last day of data collection: 8/14/12 |
| 5. Dataset locationNorthernmost latitude: 59o50.07Southernmost latitude: 58o39.94Easternmost longitude: 147o33.12Westernmost longitude: 150o13.10IPHC Survey region: Seward (SEW) | 9. Vessel name and typeF/V Waterfall (abbreviation: WFL)65’ longline fishing vessel |

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| 6. Instruments used to collect these data:We use SBE19plus and SBE19plusV2 water column profilers made by Seabird Electronics Inc. in Bellevue, WA, outfitted with auxiliary sensors to measure dissolve oxygen (SBE43), pH(SBE18), and chlorophyll a concentration (WETLabs – ECO-FLRTD). In 2012, some profiler assemblies were equipped with Star-Oddi temperature/depth loggers. | 10. Trip/cruise numberTrips 2, 3, 4, 6, 7, 8, 9 |
| 7. Parameters measuredPressure, temperature, conductivity (salinity calculated), dissolved oxygen, pH, chlorophyll *a* concentration | 11. Station number range4147-4194 |
| 8. Number and type of files/casts transferred47 total casts – each cast provided in NetCDF and text formats.  | 12. Description of file namesNetCDF and text filenames have prefix: IPHC2012 (Organization and year), 3-letter Vessel (see Section 2.9), 4-digit Area/station, cast (set) number cNNN (c and three digits). Suffix is .nc or .txt |

**Section 3. Scientific Content of Dataset**

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| Name of measured parameter | Unit of measure used for parameter | Observation method and instrument used | Data processing techniques |
| PressureTemperatureSalinityDissolved O2pHChlorophyll *a*Sigma-Toxygen  | Strain gauge (db)ITS-90 oCpsuml/LpHµg/lkg/m3% saturation  | SBE19plusV2SBE19plusV2SBE19plusV2SBE43SBE18Wetlabs ECO-FL(RT)D (fluorometer, real-time, 6000-m rating) calculated value calculated value  | All data are processed from raw using SeaBird “SEASOFT SBE Data Processing” software, anda configuration (\*.con) file that includes integrated instrument serial numbers and calibration coefficients. Data are averaged to 1-meter from downcast, with occasional upcast fill if problems. Salinity is calculated from conductivity, temperature and pressure using the 1978 Practical Salinity Scale (PSS, IEEE Journal of Oceanic Engineering, V. OE-5, No.1, Jan.1980, p.14). Calculated values (2): sigma-T (density-1000) and % Oxygen concentration. |

**Section 4. File Format of Dataset**

Each station has one profile (cast/set) presented in two formats text (txt) and NetCDF (nc). All times are GMT. NetCDF files have axes (longitude, latitude, depth, time), and attributes. Text files have a ~40-line header, and the final header line lists data columns.

Latitude: North latitude 0-90° in decimal degrees, and labeled “degree\_north” (NetCDF) or

“degrees north” (txt files)

Longitude in txt files: positive decimal degrees from 0-360° and labeled “degrees east”

Longitude in NetCDF files: positive decimal degrees from 0-180°, labeled “degree\_west” or “degree\_east”

CRUISE: IPHC vessel code (3-letter) and region abbreviation (3-letter) (see Sec.6)

CAST: IPHC set number, defines one data profile (cast) at one location

STATION\_NAME: 4-digit IPHC survey station (area) number

DATA\_CMNT: lists data source CNV file name

WATER\_DEPTH: Where noted Star Oddi miniature CTD is used for bottom depth value. Otherwise bottom depth is measured by vessel instruments or estimated, and are useful only as rough estimates of bottom depth.

Data columns described in the header information are as follows:

Column 1: pressure (dbar)

Column 2: temperature (oC)

Column 3: dissolved oxygen (ml/L)

Column 4: pH

Column 5: chlorophyll a concentration (µg/L)

Column 6: Salinity (psu)

Column 7: oxygen (µmol/kg)

Column 8: oxygen (% saturation)

Column 9: Sigma-T (kg/m3 Calculated)

Data files include all downcast data, with occasional upcast information filling in if data problems occur in downcast.

**Section 5. Instrument Calibration**

Configureation file included in packet – 6192\_12.xmlcon

 At-sea pH calibrations were performed if units were consistently deployed for > 1 month. The 3-point calibrations used buffers of pH 7.0, 9.18 and 10.0, but are problematic. Original data signatures are consistent and of good quality. Field pH calibrations have not been applied to data.

**Section 6. Other**

GIS generated map is included to illustrate distribution of stations.