TITLE: Readme File-**"Surface Sediment Parameters 1970-2012_README_v2"**

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DATASET OVERVIEW:
This dataset contains summary measurements of surface sediment collected at each station for the identified cruise, with parameters (sediment grain size: ≤0 phi, 1 phi, 2 phi, 3 phi, 4 phi, and ≥5 phi, 1-4 phi, modal phi size, total organic carbon (TOC), total organic nitrogen (TON), C/N, del-13 carbon (per mil), and del-15 nitrogen (per mil).

INSTRUMENT DESCRIPTION:
Surface sediment samples were collected with either a $0.1m^2$ van Veen grab, weighted with 32 kg of lead, or a $0.0133m^2$ HAPS benthic corer.

DATA COLLECTION AND PROCESSING
Sediment was collected from the first van Veen grab used for collection of sediment samples, packaged in whirl-pak bags, and frozen for post-cruise analyses at land-based facilities. Sediment grain size was determined in the laboratory, normally (but not exclusively) after removal of organics and of iron oxides following the process of Gee and Bauder (1986). Sediment samples were acidified and provided to a land-based laboratory for carbon and nitrogen analyses at the following facilities: 1984-1988: University of Alaska Fairbanks; 1989-2008: University of California Santa Barbara; 2009-2012: CBL's Nutrient Analytical Service's Lab (NASL) for determination of TOC and TON. Procedures and techniques used by NASL are available at http://nasl.cbl.umces.edu/. Note that many of these data are listed in data files archived as part of the following projects: CITAO, Chemical and Isotopic Tracers from the Arctic Ocean, http://data.eol.ucar.edu/codiac/dss/id=106.ARCSS079; SBI, http://www.eol.ucar.edu/projects/sbi/; BEST, https://www.eol.ucar.edu/projects/best/; COMIDA CAB, http://www.comidacab.org/; and COMIDA Hanna Shoal (HS), http://www.comidacab.org/hannashoal/index.html (in progress).

DATA FORMAT
Data File Structure: Excel
File Names (Formats): **"Surface Sediment Parameters 1970-2012_v2.xlsx"**

Data Parameters:

- CruiseID=Cruise number or other identifier (HLY0601 (HLY: "Healy", USCG Icebreaker WAGB-20; 06: year, 2006; xx: cruise number for the ship for that year)); Other ship

acronyms, sequential IDs: AK47: Akademik Korolev, HX=Alpha Helix; PSEA=USCGC Polar Sea; PSTAR=USCGC Polar Star; SWL=CCGS (Canadian Coast Guard Ship) SWL=Sir Wilfrid Laurier; NOAA ships BLU=Bluefin; OCE=Oceanographer, OC=Ocean Hope III; SU=Surveyor, and WWW=Westward Wind; Carter Broad and Wacasey data sets are the name of lead PIs that collected those data (see citations below); COMIDA=Chukchi Sea Monitoring in Drilling Area program sampling on HX in 2009 and Moana Wave in 2010; RUSALCA=Russian-American Long-term Census in the Arctic project on Okean (OK) and Khromov (KR); Shell08 on Norseman II, Shell09 on HX, and SHELL10 on Moana Wave; Stoker 1970-74 (multiple cruises listed in Stoker 1978)
- StationNum= equals station number from beginning to end of cruise
  StationNme=Station Name – based on transect name, see cruise reports
- DataDate=yyyymoday
- DataYear=year of collection
- DataTime=hour and minutes of collection
- TimeZone=UTC
- UTCOffset= offset (hours) from UTC
- Latitude=in decimal degrees
- Longitude=in decimal degrees
- Depth (m)
- Sed Phi size- percent of surface sediment grain size fraction:
  - phi_le0 (gravel and rock)
  - phi_1 (coarse send)
  - phi_2 (medium sand),
  - phi_3 (fine sand)
  - phi_4 (very fine sand)
  - phi1_4 (sand total)
  - phi_gte5 (silt and clay)
- Modal – highest percent of surface sediment grain size phi class in sample
- TOC sed - total organic carbon (%) in surface sediment
- TON sed - total organic nitrogen (%) in surface sediment
- C_N - carbon-to-nitrogen ratio (wt./wt.) in surface sediment

Data Version Number and Date: Version 2, 12/15/2015

Software Compatibility: This dataset will be posted in Microsoft Excel 14.3.6 for MAC.

REFERENCES
Cooper, L.W, M.G. Sexson, J.M. Grebmeier, R. Gradinger, C.W. Mordy, J.R. Lovvorn (2013). Linkages Between Sea Ice Coverage, Pelagic-Benthic Coupling and the Distribution of Spectacled Eiders: Observations in March 2008, 2009 and 2010 from the Northern Bering Sea, Deep Sea Research Part II, Topical Studies in Oceanography, 94, 31-43.
Gee, G.W., & Bauder J.W. (1986), Particle-size analysis. p. 383–411. In A. Klute (ed.) Methods of soil analysis. Part 1. 2nd ed. Agron. Monogr. 9. ASA and SSSA, Madison, WI.
Grebmeier, J.M., Howard M. Feder and C. Peter McRoy (1989), Pelagic-benthic coupling on the shelf of the northern Bering and Chukchi Seas. II. Benthic community structure, Marine Ecology Progress Series, 51, 253-268.