READ ME (8/26/09)

CAUTION: Both raw and processed files data have not been examined nor verified! These data do not include any quality control or quality assurance assessment and may contain sensor artifacts and/or sensor drift!

Marine mooring data are available via Ecology's ftp site. We have created an unprocessed mooring data outlet (ftp://www.ecy.wa.gov/eap/Mooring_Raw/) to provide early access to data (.zip files) from our Sea-Bird and WET Labs calibrated instruments made available shortly after deployment in the field (within 1-3 months).

File Content & Format
Raw files (.raw) contain .hex, .con, and .cnv files for each deployment period and maintenance cycle (Tables 2, 3). These data can be processed using software available for download from Sea-Bird's website (http://www.seabird.com/software/softrev.htm).

Processed files (.proc) contain ASCII-formatted data. These files may contain data which span multiple maintenance cycles.

QAQC
Instruments and sensors are calibrated on an annual cycle (approximately) by Sea-Bird and WET Labs.
QA files (.QA). For more information on quality assured/controlled (QA/QC'd) data please go to our other FTP directory (ftp://www.ecy.wa.gov/eap/Mooring_ReviewedData/) and open ReadMe.pdf

Naming convention:

SSSNN_TTTT_YYMMDD.PPPP.zip   Example: BUD01_BOTT_090527.raw.zip

SSSNN   Station Abbreviation (e.g., BUD01)
TTTT   Deployment Depth (SURF = 0.5m, surface; BOTT = near-bottom)
YY   Year (e.g., 09 = 2009)
MM   Month (e.g., 05 = May)
DD   Day (e.g., 27)
PPPP   Processing Level

- raw = raw instrument output;
- proc = basic Sea-Bird software processing of data completed;
- QA = QA/QC'd data

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MOORING DATA DESCRIPTION

Mooring packages are fixed to piers and pilings for near-shore water quality monitoring in Puget Sound. Measurements are taken at 15-minute intervals. ALL dates and times are given in UTC (coordinated universal time)/GMT.

Table 1A. Mooring Locations & Depth Information

Station Name	Squaxin Passage near-bottom station (BOTT)	Squaxin Passage near-surface station (SURF)	Budd Inlet station (BOTT)	Manchester/Clam Bay near-bottom Station (BOTT)	Manchester/Clam Bay near-surface Station (SURF)
CODE	SQX01	SQX01B	BUD01	MCH01	MCH01B
Latitude:	47.183	47.183	47.054	47.572	47.572
Longitude:	122.940	122.940	122.909	122.550	122.550
Sensor height off bottom:	1.1 m	*7.3 m	1.1 m	1.4 m	8.9 m
Water depth (MLLW):	7.8 m	7.8 m	8.8 m	10.4 m	10.4 m
Fixed or floating:	Fixed	Floating	Fixed	Fixed	Fixed

A fixed sensor is attached at a set depth and will register pressure changes associated with the tides.
A floating sensor (e.g. on a floating dock or track) is continuously 0.5 m below the surface; it will not record tidal pressure fluctuations. The height of the sensor off the bottom varies.

Table 1B. Willapa Bay Mooring Locations and Depth Information

Station Name	TokePoint	Bay Center	Oysterville	Naselle
CODE	WPA04	WPA13	WPA06	WPA08
Latitude:	46.696	46.644	46.546	46.461
Longitude:	123.954	123.993	123.985	123.936
Sensor height off bottom:	-	-	-	-
Water depth (MLLW):	Variable	Variable	Variable	variable
Fixed or floating:	Floating	Floating	Floating	

Table 1C. Exploratory Mooring Locations & Depth Information

Station Name	Mount Baker Terminal, Everett near-bottom station (BOTT)	Narrows Bridge Piling (SURF)	Admiralty Head	
CODE	MBT01	NRB01	ADM01	
Latitude:	47.270	47.270	48.150	
Longitude:	122.550	122.550	122.690	
Sensor height off bottom:	1.0 m	?	0.6 m	
Water depth (MLLW):	15 m	15 m	65 m	
Fixed or floating:	Fixed	Fixed	Fixed	

Table 2. Data Status Designations

Status	Definition
Raw (RAW):	Unprocessed, unexamined, non-verified data as collected by the instrument.
Processed (PROC):	Unexamined, non-verified data processed using prescribed manufacturer protocols.
QAQC (QA):	Examined, verified data assessed and coded for accuracy, completeness, and consistency.

Table 3. File Type Description

Status	Definition
Hex (.hex):	Hexadecimal raw data file uploaded from memory of SBE 16, 16plus V2 CTDs.
Con (.con):	Instrument configuration (number and type of sensors, channel assigned to each sensor, and calibration coefficients). This information is used to interpret raw data from the instrument.
Cnv (.cnv):	Converted/processed (engineering units) data file generated from .hex and .con files with ASCII header preceding data.

Variables	Abbrev.	Units
Elapsed time since deployment	TimeH	hours
Sample number	Scan	#
Pressure	Pres	decibars
Temperature	T	deg. Celsius
Conductivity	C	Siemens/meter
Salinity	Sal	PSU
Density	Dens	sigma-t, kg/m^3
Dissolved Oxygen	DO (mg/L)	milligrams/liter
Dissolved Oxygen Saturation	DO (% sat)	%saturation
In situ fluorescence	Chlraw	mg/L^3

Measurement Quality Objectives

SBE 16 Temperature sensor:
Accuracy = 0.01 deg., reporting limit = 0.1 deg. C (Ecology 2002)

SBE 16 Conductivity sensor
Accuracy = 0.001 S/m, reporting limit = 0.01 PSU (practical salinity units) (Ecology 2002)

SBE 43 Dissolved Oxygen sensor
Accuracy (initial) = 2% of oxygen saturation (dependent on conditions.
 Reporting limit = 0.1 mg/L   (Ecology 2002)

F*urther details see:*
Washington State Marine Water Quality, 1998 through 2000 Dec. 2002 Publication No. 02-03-056

Weblinks:
http://www.seabird.com/pdf_documents/manuals/16plusV2_rs232_004.pdf
http://www.seabird.com/pdf_documents/manuals/16plus_rs232_018.pdf
 http://www.seabird.com/pdf_documents/datasheets/43brochureMay09.pdf