

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

National Status and Trends: Bioeffects Program - Kachemak Bay Database

**1.2. Summary description of the data:**

This study was based on the sediment quality triad (SQT) approach. A stratified probabilistic sampling design was utilized to characterize the Kachemak Bay system in terms of chemical contamination, sediment toxicity and benthic infaunal community structure. The purpose was to define the extent and magnitude of toxicity and other biological effects associated with contaminants in the Kachemak Bay system. Five strata (Homer harbor, Western intertidal, Western subtidal, Eastern intertidal, and Eastern subtidal) were established in the shallow (less than 10 fathoms) northern area of the bay.

Sediment samples were collected at multiple stations in each strata. A broad suite of sediment contaminants were analyzed at each station, including polynuclear aromatic hydrocarbons (PAHs), chlorinated pesticides including DDT and its metabolites, polychlorinated biphenyls (PCBs), trace elements, and butyl-tins. Other parameters included grain size analysis, total organic/inorganic carbon (TOC/TIC), and percent solids. Characterization of infaunal assemblages and the abundance of organisms present in sediments provide additional information to help determine areas of degraded sediments. Whole sediment toxicity bioassays with two species of amphipod were conducted to test for overt contaminant toxicity. This project provides invaluable baseline data on sediment infauna species richness, chemical contamination and toxicity that is georeferenced and posted on the internet through the NOAA's National Status and Trends data portal.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2007

**1.5. Actual or planned geographic coverage of the data:**

W: -151.4802, E: -150.9416, N: 59.9416, S: 59.6324

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

NCCOS Scientific Data Coordinator

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

**2.4. E-mail address:**

NCCOS.data@noaa.gov

**2.5. Phone number:**

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

NCCOS Scientific Data Coordinator

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

## 5. Data Lineage and Quality

NOAA has issued *Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

### 5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Process Steps:

- 2007-01-01 00:00:00 - DATA PREPARATION AND SAMPLE PROCESSING Fields are arranged as follows: Sample Type; Container; Field Holding; Lab Storage; Max Holding. SEDIMENT - Organic contaminants; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year. SEDIMENT - Inorganic contaminants; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year. SEDIMENT - Total organic Carbon; I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year. SEDIMENT - Grain size; Whirl paks; Wet ice (4C); Refrigerated (4C); 1 year. TOXICITY BIOASSAY - Whole sediment and porewater bioassays; Plastic jars; Wet ice (4C); Refrigerated (4C); 2 weeks. TOXICITY BIOASSAY - Organic extract (P450 and Microtox); I-Chem glass jars; Wet ice (4C); Freezer (-20C); 1 year. BENTHOS - Taxonomy; Plastic jars; 10% buffered formalin; Transfer to 70% ethanol; Indefinitely.

- NAME OF DERIVED VALUES Organic contaminants: chemicals with similar structural properties were summed and reported as "Totals" in addition to their individual measured concentrations. The components of these totals are as follows: Total DDT = sum of concentrations of ortho and para forms of parent and metabolites 2,4'DDE; 4,4'DDE; 2,4'DDD; 4,4'DDD; 2,4'DDT and 4,4'DDT. Total Chlordane = sum of concentrations of four compounds alpha-chlordane, trans-nonachlor, heptachlor, heptachlorepoxyde. Total Dieldrin = sum of concentrations of two compounds aldrin and dieldrin. Total Butyl tin = sum of concentrations of parent compound and metabolites monobutyltin, dibutyltin, tributyltin, [ concentrations are in terms of tin]. Total PCB = the sum of the concentrations of eighteen congeners: PCB8/5, PCB18, PCB28, PCB44, PCB52, PCB66, PCB101, PCB105, PCB118, PCB128, PCB138, PCB153/132/168, PCB170/190, PCB180, PCB187, PCB195/208, PCB206, and PCB209. Total low molecular weight (lmw) PAHs = sum of concentrations of twelve 2- and 3-ring PAH compounds: naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, biphenyl, 2,6-dimethylnaphthalene, acenaphthene, acenaphthylene, 1,6,7-trimehtylnaphthalene, fluorine, phenanthrene, 1-methylphenanthrene, and anthracene. Total high molecular weigh (hmw) PAHs = sum of concentrations of twelve 4-and more-ring PAH compounds: fluoranthene, pyrene, benz[a]anthracene, chrysene, benzo[b]fluorantene, benzo[k] fluoranthene, benzo[e]pyrene, benzo[a]pyrene, perylene, dibenzathracene, indeno[1,2,3-cd]pyrene, and benzo[ahi]perylene. Total PAH = low molecular weight PAHs plus high molecular weigh PAHs (sum of 24 PAH compound concentrations). Total chlorinated benzenes = Tetrachlorobenzene 1,2,4,5 Tetrachlorobenzene 1,2,3,4 Pentachlorobenzene, Hexachlorobenzene and Pentachloroanisole Total cyclodienes

= Heptachlor Heptachlor Epoxide Oxychlorane Alpha Chlordane Gamma Chlordane Cis-Nonachlor Trans-Nonachlor Aldrin Dieldrin Endrin Endosulfan II Total HCH = Alpha HCH Beta HCH Gamma HCH Delta HCH Total unsubstituted high molecular weigh PAHs = Fluoranthene, Pyrene, Benz(a) anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(e) pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-c,d)pyrene, Dibenzo(a,h) anthracene, Benzo(g,h,i)perylene Total substituted high molecular weigh PAHs= C1-Fluoranthenes/Pyrenes, C1-Chrysenes, C2-Chrysenes, C3-Chrysenes, C4-Chrysenes Total unsubstituted low molecular weigh PAHs=Naphthalene, Biphenyl Acenaphthylene, Acenaphthene, Fluorene, Anthracene, Phenanthrene, Dibenzothiophene Total substituted low molecular weigh PAHs= C1-Naphthalenes, C2-Naphthalenes, C3-Naphthalenes, C4-Naphthalenes, C1-Fluorenes, C2-Fluorenes, C3-Fluorenes, C1-Phenanthrenes/Anthracenes, C2-Phenanthrenes/Anthracenes, C3-Phenanthrenes/Anthracenes, C4-Phenanthrenes/Anthracenes, C1-Dibenzothiophenes, C2-Dibenzothiophenes, C3-Dibenzothiophenes Note: 2-Methylnaphthalene 1-Methylnaphthalene 2,6-Dimethylnaphthalene 1,6,7-Trimethylnaphthalene or 1-Methylphenanthrene were not double counted in the substituted totals. Total measured PCBs = PCB8/5, PCB103, PCB18, PCB28, PCB29, PCB31, PCB44, PCB45, PCB49, PCB52, PCB56/60, PCB66, PCB70, PCB74/61, PCB87/115, PCB95, PCB99, PCB101/90, PCB105, PCB110/77, PCB118, PCB128, PCB138, PCB146, PCB149/123, PCB151, PCB153/132/168 ,PCB156/171/202, PCB158, PCB170/190, PCB174, PCB180, PCB187, PCB183, PCB194, PCB195/208, PCB198, PCB201/173/157, PCB206, PCB209 (continued...)

- (continued from above) Several numerical indices were chosen for analysis and interpretation of the macroinfaunal data. Infaunal abundance is reported as the total number of individuals per station and the total number of individuals per square meter (= density). Taxa richness is reported as the number of taxa represented in a given site location. Taxa diversity, which is often related to the ecological stability and environmental "quality" of the benthos, was estimated by the Shannon-Weiner Index (Shannon and Weaver, 1949). In order to quantify and compare the equitability in the fauna to the taxa diversity for a given area, Pielou's Evenness Index  $J'$  (Pielou, 1966) was calculated as  $J' = H'/\ln S$ , where  $\ln S = H'$  max, or the maximum possible diversity, when all taxa are represented by the same number of individuals; thus,  $J' = H' / H' \text{ max.}$  (end continuation)

- Pielou, E.C. 1966. The Measurement of Diversity in Different Types of Biological Collections. *J. Theoretical Biology* 13:131-144. Shannon, L.C. and W. Weaver. 1949. *The Mathematical Theory of Communication*. Univ. of Illinois Press, Urbana, Ill. 117 p.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

### 6.1. Does metadata comply with EDMC Data Documentation directive?

No

#### 6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.6. Type(s) of data
- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.2. Name of organization of facility providing data access
- 7.2.1. If data hosting service is needed, please indicate
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

### 6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

#### 6.2.1. If service is needed for metadata hosting, please indicate:

### 6.3. URL of metadata folder or data catalog, if known:

<https://www.fisheries.noaa.gov/inport/item/38758>

### 6.4. Process for producing and maintaining metadata

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

## 7. Data Access

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

<https://products.coastalscience.noaa.gov/collections/ltmonitoring/nsandt/default.aspx>  
<https://products.coastalscience.noaa.gov/collections/ltmonitoring/nsandt/default.aspx>

**7.3. Data access methods or services offered:**

**7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

**8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**

National Centers for Coastal Ocean Science - Silver Spring, MD

**8.3. Approximate delay between data collection and submission to an archive facility:**

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*