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# Woods Hole Sea Grant: General

Contaminated Sediments in the Marine Environment
*Helpful to educators and students.*
McDowell, J.E.
Nor'easter, Vol. 11, pp. 8-11, 1999 WHOI-R-99-003

Using Biomarkers to Detect Contamination of the Marine Environment
*Helpful to educators and students.*
Hahn, M.E.
Nor'easter, Vol. 6, No. 1, pp. 8-11, 1994 WHOI-R-94-003

A Visual Test for Hepatic EROD Activity as a Marker for Exposure to Aromatic and Halogenated Aromatic Hydrocarbons
Lindstrom-Seppa, P., L. Farmanfarmaian, L., and J. Stegeman
Chemosphere, Vol. 27, No. 11, pp. 2183-2195, 1993 WHOI-R-93-013

The International Mussel Watch. A Global Assessment of Environmental Levels of Chemical Contaminants
Only available on loan from the National Sea Grant Library
Goldberg, E.D., J.W. Farrington, R. Dawson, E. Schneider, A.B. Jernelov, and L.D. Mee
122 pp., 1992 WHOI-T-92-002

Plastics are Forever
*Helpful to educators and students.*
Campbell, L.A.
Nor'easter, Vol. 1, No. 2, pp. 11-15, 1989 WHOI-R-89-011
We have become a society enamored of disposables--food packaging, beverage containers, utensils, and even diapers. But somewhere in our rush for consumption we forgot to look ahead to an impending problem: the disposal of discarded plastic. The problem of plastic pollution has become particularly acute in the sea. The biodegradable nature of early trash made it seem invisible. Floatables--buoyant waterborne waste materials and debris-- are not invisible. Discarded plastic materials, some of which may persist for up to 400 years, are starting to fill up the world's oceans. This article describes the growing problem, including its sources and effects, legislation to combat it, and potential solutions for it.

The Relationship Between Lipid Composition and Seasonal Differences in the Distribution of PCBs in Mytilus edulis L.
*Helpful to educators and students.*
Capuzzo, J.M., J.W. Farrington, P. Rantamaki, C.H. Clifford, B.A. Lancaster, and D.F. Leavitt
Marine Environmental Research, Vol. 28, pp. 259-264, 1989 WHOI-R-89-007

Effects of Toxic Chemicals in the Marine Environment: Predictions of Impacts from Laboratory Studies
*Helpful to educators and students.*
Capuzzo, J.M., M.N. Moore, and J. Widdows
Aquatic Toxicology, Vol. 11, pp. 303-311, 1988 WHOI-R-88-001
The degree to which toxicity testing can lead to predictions of long-term environmental consequences of contaminant exposure has been widely debated. Laboratory approaches designed to address both chemical concerns of contaminant bioavailability and persistence in addition to biological concerns of sublethal effects on marine organisms would be most useful in providing the linkage between laboratory and field evaluations. This paper discusses examples of bioenergetic, developmental, and reproductive abnormalities observed with exposure to lipophilic organic contaminants in reference to consequences at higher levels of biological organization. Alterations in bioenergetics linked with observations of reduced fecundity and viability of larvae, abnormalities in gamete and embryological development, and reduced reproductive effort provide a strong empirical basis for examination of population responses. Such empirical data can be incorporated into population models to assess the effects of energetic, reproductive, and developmental aberrations on population success and provide the basis for further examining the predictive value of toxicity testing.

The Role of Colloidal Organic Matter in the Marine Geochemistry of PCBs
Only available on loan from the National Sea Grant Library
Brownawell, B.J.
1986 WHOI-Y-86-002

Biogeochemistry of PCBs in Interstitial Waters of a Coastal Marine Sediment
Brownawell, B.J. and J.W. Farrington
Geochimica et Cosmochimica Acta, Vol. 50, pp. 157-169, 1986 WHOI-R-86-001

Partitioning of PCBs in Marine Sediments
Brownawell, B.J. and J.W. Farrington
In: Sigleo, A.C. and A. Hattori (eds.), Marine and Estuarine Geochemistry, pp. 97-120, 1985 WHOI-R-85-005

The Biogeochemistry of Polychlorinated Biphenyls in the Acushnet River Estuary, Massachusetts
Farrington, J.W., A.C. Davis, B.J. Brownawell, B.W. Tripp, C.H. Clifford, and J.B. Livramento
Organic Marine Geochemistry (ACS Symposium Series), No. 305, pp. 174-197, 1985 WHOI-R-85-016

Bioavailability of Mercury in Several Northeastern U.S. Spartina Ecosystems
Breteler, R.J., I. Valiela, and J.M. Teal
Estuarine, Coastal and Shelf Science, Vol. 12, pp. 155-166, 1981 WHOI-R-81-014

The Fate of Pollutants in American Salt Marshes
Only available on loan from the National Sea Grant Library
Teal, J.M., A. Giblin, and I. Valiela
In: Wetlands: Ecology and Management, Proceedings of the First International Wetlands Conference, New Delhi, India, 10-17 September 1980, pp. 357-366, 1980 WHOI-R-80-027
Studies of the consequences of pollutants added to salt marshes and coastal wetlands have been made all along the coasts of the United States. The motives for these studies have varied from interest in the fates and effects of pollutants introduced into coastal waters inadvertently, to consequences of various disposal methods for dredge spoils, and to the possibility of using coastal wetlands for waste treatment. This study involved experimentally applying sewage sludge to a New England salt marsh for 10 years. Sludge contains plant nutrients and a wide range of heavy metals, halogenated hydrocarbons (including PCBs and pesticides), and hydrocarbons (including polynuclear aromatic hydrocarbons). When the authors considered just the effects of sewage contamination, they found that production is increased and with it the export of heavy metals from the wetland sediments. Most of the added amounts of metals such as lead are retained in marsh sediments for periods that are very long in human terms and have no demonstrable effect on the marsh organisms. Metals such as cadmium are only temporarily retained but still have apparently relatively little effect on the marsh biota except possibly for the infauna of the sediments. Shellfish can take up copper and turn green in color, which makes them unusable but does not necessarily kill them. The fates of organic pollutants are much less well understood but are apparently also closely retained within the sediments and, to some extent at least, broken down by microbial activity.

Uptake of Heavy Metals, Organic Trace Contaminants and Viruses by the Japanese Oyster, Crassostrea gigas, Grown in a Waste Recycling Aquaculture System
Only available on loan from the National Sea Grant Library
Mann, R., J.M. Vaughn, E.F. Landry, and R.E. Taylor
1979 WHOI-T-79-005

Diversity as an Indicator of Pollution: Cautionary Results from Microcosm Experiments
Smith, W., V.R. Gibson, L.S. Brown-Leger, and J.F. Grassle
1979 WHOI-R-79-005

Hepatic and Extrahepatic Microsomal Electron Transport Components and Mixed-function Oxygenases in the Marine Fish Stenotomus versicolor
Stegeman, J.J., R.L. Binder, and A. Orren
1979 WHOI-R-79-011

Influence of Environmental Contamination on Cytochrome P-450 Mixed- function Oxygenases in Fish: Implications for Recovery in the Wild Harbor Marsh
Stegeman, J.J.
1978 WHOI-R-78-006

High Benzo[a]pyrene Hydroxylase Activity in the Marine Fish Stenotomus versicolor
Stegeman, J.J. and R.L. Binder
1978 WHOI-R-78-016

Electron Paramagnetic Resonance Studies on Hepatic Microsomal Cytochrome P-450 from a Marine Teleost Fish
Only available on loan from the National Sea Grant Library
Chevion, M., J.J. Stegeman, J. Paisach, and W.E. Blumberg
1977 WHOI-R-77-002

Data File: New Bedford Harbor, Massachusetts
Only available on loan from the National Sea Grant Library
Ellis, J.P., B.C. Kelley, P. Stoffers, M.G. Fitzgerald, and C.P. Summerhayes
1977 WHOI-T-77-008

Copper and Other Heavy Metal Contamination in Sediments from New Bedford Harbor, Massachusetts: A Preliminary Note
Stoffers, P., C. Summerhayes, U. Forstner, and S.R. Patchineelam
1977 WHOI-R-77-006

Identification of Nitrogen as a Growth-limiting Nutrient in Wastewaters and Coastal Marine Waters Through Continuous Culture Algal

Assays
Only available on loan from the National Sea Grant Library
Goldman, J.C.
1976 WHOI-R-76-002

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