

**Marine
Environmental
Support
Office**



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**CLINTON ADMINISTRATION'S PROPOSED
WETLAND REFORMS**

There are an estimated 100 million acres of wetlands in the United States, not including the 170 million acres of declared wetlands in Alaska. All of these areas are known for supporting crucial wildlife, filtration of ground water, maintaining water quality, and controlling floods. Recognizing that better protection methods and policies are needed to preserve this natural resource, the Clinton administration announced its wetland reform package on August 24, 1993.

The Clinton administration announced a long-term goal of increasing the quality and quantity of the Nation's current wetlands. Some of the more important points of this proposal are as follows:

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Improving the Wetlands Permitting Process: The Environmental Protection Agency (EPA) and the Army Corps of Engineers have recently issued flexibility guidelines to help make regulatory decisions regarding the analysis of project alternatives based on the relative severity of the environmental impact of proposed discharges. These guidelines state that small projects with minor impacts are subject to less rigorous permit review than larger projects with more substantial environmental impacts.

Classifying Wetlands: Environmental agencies will expedite development of a new approach for wetland functional assessment known as the Hydrogeomorphic Classification System (HGM). The HGM methodology is currently being developed by the agencies and academic community as an improved analytical tool to make timely and accurate assessments of wetlands. This tool will assist the agencies in assessing the relative severity of environmental impact from proposed discharges.

Improving Mitigation Success: The Army Corps of Engineers, in coordination with EPA, Fish and Wildlife Service (FWS), Soil Conservation Service (SCS), and the National Marine Fisheries Service (NMFS), will issue guidance to their field staff to clarify the requirements for developing compensatory mitigation conditions in Section 404 permits. This guidance is intended to increase the success of mitigation projects in wetlands and other waters resulting from permitted activities. Mitigation banking will provide for more successful compensatory mitigation in the permit process by requiring mitigation to be established before permits are issued.

Direct Wetlands Preservation: The FY 1994 Agriculture Appropriations conference report provides for 75,000 new acres to be enrolled in the Wetlands Reserve Program. This will more than double the number of States eligible for participation in the program. The Administration will also pursue full funding of the President's budget request for the Wetlands Reserve Program in FY 1995 and plans to promote restoration through voluntary, cooperative programs and outreach activities.

Clarification of Definitions regarding "Discharge of Dredged Material" and "Discharge of Fill Material:" The Clinton Administration hopes to close a loophole by redefining these terms. Under the final rule, these terms are defined to ensure that discharges into wetlands and other waters of the United States will be consistently regulated when they are associated with excavation activities, such as ditching, channelization, or mechanized land clearing. The rule explicitly excludes from Section 404 regulation discharges associated with activities that have only inconsequential environmental effects.

--*Environment Reporter*, Vol. 24, No. 17, August 27, 1993, p. 793.

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EPA PUBLISHES FIRST EMAP DEMONSTRATION PROJECT

The EPA recently released results from their first demonstration of the Environmental Monitoring and Assessment Program (EMAP), which was conducted in the Virginian Province (Mid Atlantic). This project involved over 500 sampling visits to 217 sites from Cape Cod to the mouth of Chesapeake Bay. This study was selected for the demonstration project because of its focus on estuarine biological productivity. In addition, there is intense public interest in restoring and maintaining estuaries and their associated resources.

EMAP is a comprehensive environmental monitoring network designed to: 1) estimate the current status and trends in the condition of the nation's ecological resources on a regional basis; 2) seek associations between human-induced stress and ecological conditions; and 3) provide periodic statistical summaries and interpretive reports on ecological status and trends to resource managers and the public. The program was initiated to provide the information necessary for formulating future environmental policies. EMAP is organized into resource groups which are responsible for conducting assessments within seven sub-categories of environmental resources: forests, wetlands, surface waters, arid lands, agricultural ecosystems, and Great Lakes. The entire program is administered by the EPA's office of Research and Development.

A series of indicators that are representative of the overall health of estuarine resources were measured at each site. These indicators were selected to address three major attributes of concern: 1) biotic integrity; 2) pollutant exposure; and 3) aesthetics. The Virginian Province report is broken down into several sections which include:

Methods and Logistics - one characteristic of the EMAP-Estuaries program is that the entire province is sampled within about 6 weeks using standardized methods to ensure comparability of data within and among sampling years. The 1990 Demonstration Project was successful in developing and documenting these standardized methods and associated QA/QC protocols.

Indicator Development and Testing - another major accomplishment was the development and application of methodology for calibrating and validating biological indicators of estuarine condition. Benthic invertebrate assemblages were the most successful biological indicators because they integrate exposure over long periods of time (months to years) while their relative immobility prevents them from avoiding pollution exposure.

Design Evaluation - one of the main objectives of the Project was to determine the precision with which environmental conditions can be estimated using the present



design. Sample confidence limits of around 10% should decrease with each new sampling cycle. Temporal and spatial variability and uncertainty estimates were also calculated for the various parameters measured. For the Virginian Province, the most appropriate sampling period was determined to be late July through August because (1) dissolved oxygen values are at annual low values; (2) contaminant exposure is greatest because of low dilution flows and peak metabolic activity associated with highest water temperatures; and (3) living resources are most abundant.

Preliminary Evaluation of Estuarine Status - when fully implemented, EMAP will provide regional and national assessments of ecological status and trends for the nation's environmental resources based on a four-year sampling cycle. The multi-year baseline should minimize the effect of natural interannual variability due to climate and other factors.

Some of the findings reported in the preliminary estuarine status evaluation are listed below. It should be noted that the results of this pilot project were obtained from just a single year of data.

- Between 16-30% of the estuarine area in the province had benthic resources that were degraded compared to regional reference sites;
- 4 out of every 1000 fish had a visible pathological disorder and the prevalence in demersal fish was several times that in pelagic fish;
- 8% of the sediments were estimated to be acutely toxic using 10-day solid-phase toxicity tests and indigenous biota;
- Based on the National Oceanic and Atmospheric Administration (NOAA) Status & Trends list of analytes, 39% of the province was estimated to have concentrations of contaminants in the sediments that potentially cause at least sublethal biological effects. Metals, lead and zinc were the most prevalent;
- High concentrations of bacterial traces of sewage pollution were found in an estimated 9% of the province;
- Small estuarine systems had the highest proportion of toxic sediments, sediments with contaminant concentrations of biological concern, sediments with high bacterial levels, and the highest proportion of fish with pathological disorders;
- Between 14-28% of the area had dissolved oxygen concentrations below 5 ppm, the water quality standard for many states in the province;
- Anthropogenic marine debris (trash) was estimated to be present in 9-19% of the estuarine area, with paper and plastic accounting for most of this.

--Virginia Province Demonstration Report -- EMAP-Estuaries: 1990, EPA/620/R-93/006, June 1993, Washington, DC.

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BROWNER SETS AGENDA FOR IMPROVED CLEAN WATER ACT AND WATERSHED APPROACH

One of EPA Administrator Carol Browner's top priorities for 1993 is the passage of an improved Clean Water Act. At the 19th annual meeting of the National Conference of State Legislatures, Browner emphasized that a new Clean Water Act should focus on pollution prevention as well as clean up. Browner felt the Act must pursue water quality not on a pollutant-by-pollutant basis but by taking an holistic approach to each watershed. Every watershed will be evaluated individually in terms of all pollutants contained within and significant pollutants affecting that watershed's ecosystem. According to Browner, the Act would address non point source polluted runoff because it is "the most serious and neglected water quality problem of all."

Despite 20 years improvements in water quality, nearly half of American rivers, lakes, and creeks still are polluted or threatened. "We have serious problems with our drinking water supplies as well," said Browner. She feels that the new Clean Water Act should bring communities together to identify what's causing water pollution. This consolidated approach promises to be more effective than targeting point source discharges.

Browner cited the Great Lakes Water Quality Initiative as an example of the type of comprehensive water quality management plan EPA wants to pursue. Currently, areas like Chesapeake Bay and Santa Monica Bay are undergoing programs similar to the Great Lakes Water Quality Initiative.

--*National Environment Watch*, Vol. 4, No. 14, August 2, 1993, p. 5.

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PROHIBITION OF PLASTICS DISCHARGE FROM NAVAL VESSELS INCLUDED IN DOD AUTHORIZATION ACT

On September 9, the Senate approved an amendment to the Defense Department authorization bill. This amendment will require the Navy to end the discharge of plastics from ships by December 31, 1998 and from submarines by December 31, 2000. All of this effort is to ensure that by the year 2000, the Navy will be in compliance with the Marine Plastic Pollution Research and Control Act and the International Convention for the Prevention of Pollution by ships. This measure would also require the Navy to comply with restrictions on the discharge of all solid waste within designated "special

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areas" such as the Gulf of Mexico and the Mediterranean Sea. Several environmental organizations and the Navy endorse this amendment.

--*Environment Reporter*, Vol. 24, No. 20, September 17, 1993, p. 891.

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INCREASED EXEMPTION LIMIT PROPOSED BY EPA TO STIMULATE NEW TECHNOLOGIES

On June 29, EPA Administrator Carol Browner signed a proposal that would increase the amount of non-acute contaminated debris and soils that could be treated without being subject to full Resource Conservation and Recovery Act (RCRA) Subtitle C regulations (24 FR 389). By raising the current limit of 1,000 kilograms to a new limit of 10,000 kilograms, the EPA hopes to ease restrictions on the development of hazardous waste treatment technologies. This proposal to raise the limits was based on hazardous waste treatment technology development efforts and site remediation experience under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA. The EPA's evaluation of treatability studies was based in part on information from the Vendor Information System for Innovative Treatment Technologies (VISITT) and the Superfund Innovative Technology Evaluation (SITE) program.

More information is available from the RCRA/Superfund hotline at (800) 424-9346 and from Jim Cummings in EPA's Technology Innovation Office, (703) 308-8796.

--*Environment Reporter*, Vol. 24, No. 10, July 9, 1993, p. 417.

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ECOLOGICAL RISK ANALYSIS NEEDED IN CORRECTIVE ACTION IMPACT ANALYSES

An assessment of the ecological risks and benefits of site remediation is largely absent from the draft Regulatory Impact Analysis (RIA) on the proposed corrective action rule for solid waste management units. The draft RIA, compiled as part of the corrective action rule-making under the Resource Conservation and Recovery Act, is also inconsistent with the EPA's ecorisk framework document.

Raymond Loehr of the Science Advisory Board committee said, "Merely acknowledging the shortcomings of the assessment in the RIA does not absolve the agency of the responsibility to include a full discussion of ecological risks and benefits."

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Several recommendations were made to the EPA in order to improve the corrective action RIA; some of them are:

- Presenting a full range of environmental end points that should be considered but stating that only a subset of end points have been evaluated;
- Completing the full ecological risk assessment on a national scale; or
- Refining the current ecological risk analysis and using it to answer a less-sweeping set of questions.

--*Environment Reporter*, Vol. 24, No. 15, August 13, 1993, p. 637.

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VIOLATIONS OF CLEAN WATER ACT CONTINUE

According to the U.S. Public Interest Research Group, (U.S. PIRG) 18 percent of federal facilities were in significant non-compliance with Clean Water Act requirements. The report documented findings from about 7,000 of the largest industrial and municipal facilities between October 1, 1991 and September 30, 1992. The report has sparked legislators to propose an addendum to the CWA. This addendum will help to stop illegal discharges by setting mandatory minimum penalties for the most serious and chronic violations, prohibit profits from polluting, strengthen citizens right to sue polluters and gain access to information about toxins in waterways.

A representative of EPA stated that U.S. PIRG gave the impression that all of the violations were for discharges of toxic substances, when in fact, one-third were for record-keeping, and one-third for other effluent violations. EPA believes that violations of the CWA continue to decline and in fact, 1992 was a landmark year for low violations.

Another report released October 4 by the Natural Resources Defense Council (NRDC) claims that the government has not had much success in achieving the goals of the CWA. The NRDC has found that the following problems still remain:

- Polluted runoff from farms, urban areas, and other sources impairs approximately 125,000 miles of rivers, 2 million acres of lakes, 1.2 million acres of coastal areas, and 5,000 square miles of estuaries;
- An estimated one-third of rivers, half of estuaries, and more than one-half of lakes are no longer safe for fishing, swimming, and other uses;
- Hundreds of millions of pounds of toxins continue to be discharged into surface waters each year; and



- An estimated 1.35 billion fish have been killed in inland and coastal waters by water pollutants since 1972.

The NRDC report is called *The Clean Water Act: 20 Years Later*, and describes the progress made in addressing U.S. water pollution problems and a series of recommendations for the reauthorization of the law. Copies of the 320-page NRDC book may be obtained for \$29.95 from bookstores, or from Island Press, Box 7, Covelo, California, 95428; phone: (800) 828-1302.

--*Environment Reporter*, Vol. 24, No. 23, October 8, 1993, p. 1071.

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PORT OF TACOMA MAY PAY LARGE SUM FOR BAY CLEANUP

A proposed consent decree was filed by the Department of Justice (DOJ) against the Port of Tacoma, Washington on August 16, 1993. According to the DOJ, the Port may be accountable for high levels of arsenic, copper, lead, and zinc which have been damaging the natural resources of the bay. The proposed consent decree would require that the Port pay an estimated \$22 million for the cleanup of contaminated sediment in Commencement Bay, \$12 million in natural resources damages, and more than \$1.1 million in past costs incurred by EPA and DOJ. In addition, the Port would have to create more than 10 acres of new salmon and wildlife habitat in order to replace the habitat which was destroyed by filling the waterway. The consent decree requires that the Port of Tacoma mix dredged, uncontaminated sediment from the Blair Waterway with contaminated sediment from the Sitcum Waterway. This mixture would be used to fill the Milwaukee Waterway.

The claims covered by this settlement are found under Comprehensive Environmental Response, Compensation, and Liability Act. According to the DOJ, the agreement involves federal, state, and tribal agencies, including EPA, the National Oceanic and Atmospheric Administration, and the Department of the Interior. DOJ No. 90-11-3-711, the decree, is subject to public criticism and can only become final if it is approved by the U.S. District Court for the Western District of Washington.

--*National Environment Watch*, Vol. 4, No. 19, September 13, 1993, p. 3.

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TOXIC CHEMICALS IN SANTA MONICA BAY

A recent study reported that 160 toxic chemicals are entering the Santa Monica Bay in Los Angeles, California via the storm drains every day. Released on August 17, the American Oceans Campaign report found very serious contaminants over a six-month period at five of the area's highest flowing storm drains. Some of the more serious contaminants were polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), chlorinated pesticides, chlorinated hydrocarbons, phenols, and other carcinogenic compounds. In addition, 33 volatile organic compounds were identified in the effluent.

According to Lisa Weil, a policy director at American Oceans Campaign, the Department of Health Services had taken the position that "there was no need to warn the public of any health impact from storm water contamination free of human waste." She feels that this study shows that it is time for the Department of Health Services to post warnings and protect the health and safety of the citizens of California. The results of a parallel study addressing the aquatic toxicity of dry weather flow performed at the same time have yet to be released.

--*California Environment Reporter*, Vol. 3, No. 21, August 27, 1993, p. 597.

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DUMPING OF PRIMARY SEWAGE INTO OCEAN MAY BE ACCEPTABLE

Many coastal cities are bound by secondary sewage treatment requirements that govern inland cities. However, according to scientists from Scripps Institution of Oceanography, secondary sewage treatment mandates in the Clean Water Act are unscientific. The Scripps scientists' conclusions on secondary treatment are backed up by a recent National Research Council report. This NRC report urges Congress to base sewage treatment standards on the quality of ocean waters into which the effluent is disposed.

By observing effluent from the Point Loma advanced primary treatment plant in San Diego, California, Scripps scientists have concluded that the discharge does not significantly impact the marine environment. In fact, when the pipe is extended to dump the effluent 4.5 miles offshore, there will be virtually no effect on the environment.



However, there will undoubtedly be environmental impacts if the system is upgraded to include secondary treatment. Secondary treatment will double the amount of sludge created by sewage treatment. This sludge will most likely be transported by truck and disposed of on land.

--*San Diego Union-Tribune*, Thursday, July 8, 1993.

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ARMY TECHNOLOGY AND INFORMATION TRANSFER SERVICES

Established in 1974, the U.S. Army Engineer Waterways Experiment Station (WES) Environmental Information Analysis Center (EIAC) has provided environmental information and technical support for a variety of users. The center maintains significant databases and information on topics such as wetlands delineation, cultural site preservation, wildlife habitat development, and hazardous waste site characterization and remediation.

Today, in response to the recent research efforts from the Environmental Laboratory, WES EIAC has helped create the Wetlands Research and Technology Center (WRTC) to manage Corps research in that area. WRTC is currently establishing a national data base describing all wetland types and wetland functions. Available information includes research results and management efforts in four wetland related topics. These areas are: critical processes in wetlands, delineation and evaluation, management and stewardship, and establishment and restoration.

Although WES EIAC's role is to respond to numerous requests for information and data, it also provides many other services. WES EIAC is responsible for coordinating the publication of environmental research reports and publishing a technical note series. WES EIAC also publishes information exchange bulletins, fact sheets, pamphlets, brochures, press releases, and video reports. For further information on the WES EIAC, contact Dr. Roger Saucier, Director, WES EIAC, at (601) 634-3233, or write: U.S. Army Engineer Waterways Experiment Station, 3909 Halls Ferry Road, ATTN: CEWES-EV-I, Vicksburg, MS 39180-6199.

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STATE REGULATORY HIGHLIGHTS

California: In a move to boost the California business climate, negotiators have reached a bipartisan agreement on regulatory reform that would make it easier for businesses to comply with the state's environmental law.

Business groups have complained for years that the landmark California Environmental Quality Act (CEQA), one of the strictest in the nation, created a complicated and expensive system that can easily be used to delay projects. The legislation worked out by negotiators in marathon sessions that finally concluded on Labor Day is an attempt to give businesses relief without weakening environmental protections.

The agreement replaces what is commonly called the "fair argument" standard with specific language requiring opponents to cite facts and expert opinions. This change will require state agencies regulating air, water, waste and toxins to do a general environmental impact review when they order an industry or business to make a specific change. Under the current law, the business must conduct its own sweeping study. When regulatory agencies make their general reviews, they will also be better informed about the economic impact of their proposed order.

--*San Diego Union-Tribune*, Wednesday, September 8, 1993.

California: The California State Water Resources Control Board is proposing to adopt emergency regulations amending the schedule of annual fees charged for the regulation of discharges of waste that could affect the quality of waters of the state. This proposal will amend the existing regulations and clarify the language addressing the fees for area-wide National Pollution Discharge Elimination System (NPDES) permits for storm water discharges. The current schedule of annual fees is found in section 2200, title 23, of the California Code of Regulations.

The Porter-Cologne Water Quality Control Act of the California Water Code authorizes regulation of discharges of waste which could affect the quality of the waters of the state and authorizes the assessment of fees to reimburse the state for some of the costs incurred to implement Porter-Cologne. As with existing fee schedules under NPDES and BPTCP (Bay Protection and Toxic Cleanup Program), these fees will be charged according to a hierarchy of assigned ratings, and range from \$400 to \$10,000 per year for each discharger.

--*Notice of Proposed Rulemaking -- Annual Fees for the Regulation of Discharges of Waste*, State Water Resources Control Board, September 19, 1993, Sacramento, CA.



California: Governor Wilson has recently signed two major bills to streamline the state's hazardous waste permit system. One bill consolidates the waste control programs of two departments and establishes a single permit to be issued by the lead agency. The other bill sets up a process for coordinating and consolidating the issuance of two or more environmental permits.

--*San Diego Union-Tribune*, Wednesday, September 8, 1993.

Illinois: The 77th Illinois General Assembly recently enacted the Illinois Water Pollutant Discharge Act. The law states that there should be no discharges of oil or other pollutants into any waters that provide supply, recreation, or navigation. In addition, the law asserts that those persons responsible for such discharges will be responsible for the cost of removal.

--*Environment Reporter -- State Water Laws*, Vol. 2, Ch. 415, Section 766:0401-766:0402.

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NRAD RESEARCH UPDATE

The Use of Stimulatable Bioluminescence from Dinoflagellates as a Means of Detecting Toxicity in the Marine Environment.

Phytoplankton bioassays are currently being used as biological tools in assessing environmental contamination. In the NRAD laboratory, a simple bioassay has been developed which measures the light output from bioluminescent dinoflagellates for assessment of toxic effects when exposed to a single toxicant or mixture. The objective of this research was to develop a bioassay using a phytoplankton species to detect sublethal biological effects at Navy hazardous waste sites and effluent discharges.

The process developed involves dinoflagellate cells (either *Pyrocystis lunula* or *Gonyaulax polyedra*) which are exposed to various concentrations of tributyltin chloride, copper sulfate, and storm drain effluent. First, the cells are placed in the polluted solution and kept in the dark for approximately 4 hours prior to testing. During the testing process, the solution containing the cells is stirred in order to stimulate maximum bioluminescence. Throughout the stimulation, the bioluminescent light is measured following each bioassay setup. An IC_{50} (concentration that is likely to cause a 50%

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reduction in light output) is estimated for all assays. The research shows that light reduction is inversely related to the toxicity of test articles. Dinoflagellates exhibit equal or greater sensitivity than either mysid shrimp (*Mysidopsis*) or fish (*Menidia*) acute bioassays and the process requires less time to set up and conduct. This bioassay can be used as a screening tool and should be used as part of a larger toxicity assessment encompassing other marine species. For more information, see the enclosed brochure.

--D. Lapota, Naval Command, Control & Ocean Surveillance Center, Code 522, San Diego, CA; D.E. Rosenberger, W.J. Wild, and D. Duckworth, Computer Sciences Corp., San Diego, CA.

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RESOURCES REVIEWED FOR THE MARINE ENVIRONMENTAL UPDATE

The Marine Environmental Support Office (MESO) is dedicated to providing the Navy with the most up to date information on marine environmental, science, policy, and compliance issues. The Marine Environmental Resource Center is maintained with up-to date documents and databases for rapid retrieval and transfer of the following types of information:

- ▶ site-specific data
- ▶ analytical methods
- ▶ scientific reference texts
- ▶ ecological risk assessment
- ▶ regulatory reference library
- ▶ newsletters and online bulletins
- ▶ environmental assessment library
- ▶ research and monitoring programs
- ▶ chemical databases
- ▶ toxic effects databases

The following is a list of some of the more important sources reviewed for the *Marine Environmental Update*:

- National Environment Watch (biweekly) -- Published by Bureau of National Affairs, Inc, this newsletter covers environmental issues from a broader perspective. The issues are framed in a practical business context in order to facilitate cost-effective planning and compliance efforts.
- Environment Reporter and Current Developments (weekly) -- Published by Bureau of National Affairs, Inc. This is a combined reference service and a notification service. The subject matter covered includes the complete spectrum of legislative,



regulatory, enforcement, and judicial developments. Along with weekly updates on all environmental laws and regulations, MESO also receives the full text of every relevant state and federal law as it is amended, revised or altered.

- California Environment Reporter (weekly) -- Bureau of National Affairs, Inc publishes this reference service. It covers the same type of information as the Environment Reporter but focuses on California. Since many of the legislative and regulatory trends in environmental affairs are established by California, the large volume of information requires a special reporter.
- Environmental Pollution and Control Alert (biweekly) -- Published by National Technical Information Service, this service summarizes reports, books, inventions, databases and publications relating to environmental pollution and control. Specifically, it covers environmental health and safety, solid waste pollution, water pollution, and international developments.
- Marine Pollution Bulletin (monthly) -- Published by Permagon Press, this publication covers international journal style articles relevant for marine environmentalists, scientists, engineers, administrators, politicians and lawyers.
- Environmental Science and Technology (monthly) -- Published by The American Chemical Society, this journal publishes articles on emerging developments in environmental science.
- Federal Facilities Environmental Journal (quarterly) -- Published by Executive Enterprises Publications, this journal is written specifically for federal facility managers, contractors, and other environmental professionals. The subject matter is specifically limited to issues, problems and solutions relating to federal facilities.
- Energy and Environmental News (quarterly) -- Published by the Naval Energy and Environmental Support Activity (NEESA), this newsletter covers relevant environmental issues as they relate to all Naval activities, decisions and actions.
- DENIX -- This electronic bulletin board has replaced the Navy's Environmental Bulletin Board System (NEBBS), and routinely posts information on a variety of topics such as legislation, regulations, policies and technical issues. It is accessible *via* the former NEBBS call-up procedures.
- Army Environmental Update -- Published by the Army Corps of Engineers, this publication covers activities related to operations as they affect the Corps' daily operations. Included in this newsletter are updates on technological advances, new applications for existing technology, information transfer and compliance issues.



- Environmental Risk Watch -- Published By Ebasco, this publication covers current developments in environmental and human health risk assessment from around the United States.
- Dialog Services Special Alerts -- An agreement with NRaD's technical library keeps MESO updated with special alerts whenever environmental issues of interest appear in the Federal Register or numerous ecological risk databases.

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ABOUT THE MARINE ENVIRONMENTAL UPDATE

This newsletter is produced by the Marine Environmental Support Office (MESO) and is dedicated specifically to inform the Navy about marine environmental issues that may influence how the Navy conducts its operations. MESO is located at the Naval Command, Control and Ocean Surveillance Center's Research, Development, Test and Evaluation Division (NRaD) in San Diego, California. The mission of MESO is to provide Navy-wide technical and scientific support on marine environmental science, protection and compliance issues. This support covers a broad spectrum of activities, including routine requests for data and information, technical review and consultation, laboratory and field studies, comprehensive environmental assessments, and technology transfer. Significant developments in marine law, policy, and scientific advancements will be included in the newsletter, along with references and points of contact for further information. The Marine Environmental Support Office may be reached at:

**COMMANDING OFFICER
ATTN MESO
NCCOSC RDTE DIV 5221
53475 STROTHER ROAD RM 258
SAN DIEGO CA 92152-6310**

(619) 553-5330, AUTOVON 553-5330, FAX (619) 553-5404.

E-MAIL ADDRESS: MESO@NOSC.MIL

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