



U.S.C.G. ENVIRONMENTAL TIMES

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“To cherish what remains of the Earth and to foster its renewal is our only legitimate hope of survival.”

- Wendell Berry



AFFECTING YOU

The Greening O’ the Coast Guard—Environmental FORUM 2000 Draws Record Crowd!!

Submitted by T.J Granito (G-SEC-3)

It wasn’t St. Patrick’s Day, but a bunch of environmentally conscious Coasties got a little greener this past November. With the theme “Greening the Coast Guard Through Strategic Environmental Management” centering around EO 13148, the CG Environmental Forum 2000 drew more than 130 energetic attendees and participants at its annual (well make that bi-annual) conference of environmental specialists and impacted program managers. This was the third major CG-wide gathering sponsored by G-SEC-3 for its “internal” environmental compliance program managers. The meeting was held in historic Olde Town, Alexandria, which provided a congenial setting for both formal and informal sharing of ideas and discussions of the Coast Guard’s roles and responsibilities in the emerging swell of environmental obligations.

The agenda was purposefully assembled to include both the field’s immediate concerns and “what’s coming down the road” presentations. Presentation and panel discussions included personnel from the White House’s CEQ, DOT, EPA, GSA, FAA, and DOJ, as well as a host of

The “Environmental Times” (*E-Times*) is designed to help you keep up with environmental information relevant to your job. The “Environmental Times” is provided for informational purposes only and does not necessarily reflect official Coast Guard policy. We encourage you to write the editor with questions, comments, or input for this publication. Contact Martin Nguyen at Coast Guard headquarters, (202) 267-2342 or e-mail mnguyen@comdt.uscg.mil or Meg Breton at Potomac Management Group, Inc., (703) 836-1037 or e-mail mbreton@potomacmgmt.com.

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Editorial Policy: “U.S.C.G. Environmental Times” articles cover the entire range of environmental issues that may confront CG facilities, operations, project or activity planning, and policy making. The articles are intended to be brief, so they often provide a point of contact for further information. Suggestions for articles are welcome. Articles submitted may be edited for brevity.

Electronic and paper “Environmental Times” distribution includes HQ offices, MLCs, CEUs, FDCCs, independent HQ units, various district offices, and other units as requested.

CG's own talented experts from the field and HQ. The audience included HQ's environmental management, operational, legal, planning, budget, procurement and supply types, as well as their counterparts in the field in addition to some representatives from DRMO and the Navy. All in all, the Forum proved to be an excellent learning and sharing experience and a great networking opportunity for everyone.

In keeping with the underlying Pollution Prevention (P2) spirit of the conference, the presentations and an overall summary of the conference will be placed on-line at both the Environmental Management Division web page (<http://www.uscg.mil/systems/gse/gsec-3H.htm>) and a CD will be mailed to all the registered attendees, thereby saving natural resources. Further information, such as responses to "suggestion box" and "parking lot" questions, and other follow-up information, will also be put on-line or may be obtained by contacting T.J. Granito (G-SEC-3) at (202) 267-1941 or e-mail: tgranito@comdt.uscg.mil.

Forum 2002 will be planned (again based on attendees' evaluations and field suggested topics) in the next 12 to 18 months. Remember: Your input helps and directs the tone of all future forums.

THANKS for your support and participation.

Coast Guard Finalizes Revised NEPA Policy Submitted by Kebby Kelley, G-SEC-3

COMDTINST M16475.1D, National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts, is signed and final and is in the process of going to the printer. COMDTINST M16475.1D, which is now in effect, replaces the November 14, 1997 COMDTINST M16475.1C, National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts. An electronic version of the new instruction will be posted on the G-SEC website. There are a number of changes in M16475.1D. For instance, Section B.2b has been changed to ensure that simply the presence of an extraordinary circumstance will not trigger the need for an EA or EIS but that the significance of the circumstance will govern whether a higher level of NEPA document is necessary. There are also changes in format, for example, throughout the document. The order and numbering of the Enclosures has changed. Following are some of the specific changes from M16475.1C that will be found in M16475.1D:

- HQ units are now required to implement the procedures of the Instruction in consultation with environmental staff either at the unit or the MLC instead of HQ or MLC. Section 8 of the Instruction is changed to require MLCs to assist HQ units where appropriate with requirements of the Instruction.

- Sections B.6. and 7. contain a new policy on signatories to NEPA documents.
- Section C.1. addresses a template for the cover page of an EIS, which is displayed in the new Enclosure 7.
- Section C.5. describes a template for completing a Record of Decision, which is displayed at Enclosure 8.
- Section D.1. has been updated to address the new section 106 regulations issued on December 12, 2000 and to add a section on the NHPA content of the NEPA documentation.
- Section D.2. has been revised to reflect amendments to CZMA, new CZMA regulations issued December 8, 2000, and to clarify USCG policy on implementation of the requirements of CZMA and its implementing regulations. It also adds Enclosure 9, which is a list of states and territories that have approved Coastal Zone Management Programs.
- Section D 3 adds a section on the CBRA content of NEPA documentation.
- Sections D4-D6 include a new section on the content of the NEPA document
- Enclosure 2 replaces the current environmental checklist with a revised shorter version.
- Enclosure 11 has been revised to include new Environmental mandates and ensures that the proper legal citation is present for each one.

For more information, contact Kebby Kelley (G-SEC-3) at (202) 267-6034 or e-mail: kkelley@comdt.uscg.mil.

Proposed Revised and New USCG Categorical Exclusions

G-SEC has completed a draft Federal Register notice containing our proposed new and revised Categorical Exclusions (CEs). It lists the new and revised CEs and provides justification for their creation. This draft Federal Register notice was transmitted to DOT (P-1) on November 21, 2000 for review and concurrence before going to EPA and CEQ for review. After DOT, CEQ and EPA have reviewed, the revised CEs will be published in the Federal Register for comment.

G-SEC made every attempt to accommodate all comments from the field and HQ review, however, many times the comments were in conflict and they could not satisfy all parties. G-SEC believes the current list does a good job of addressing most of the concerns expressed. It is probable that the proposed list will change even further after DOT, CEQ and EPA review; that will be determined after their comments are received. *E-Times* will continue to provide an update on the progress of this initiative.



NEWS YOU CAN USE

Governmental Pollution Cited

Submitted by Dr. Ken Malmberg, G-SEC-3, overview of an article in the BNA Environmental Reporter

The EPA has proposed enforcement priorities for the years 2002 and 2003 that target pollution at federal facilities. Other proposed areas include cruise ships, auto salvaging, mining, hazardous waste, pesticide use, particulate air pollution, and fuel management.

The proposal was announced in the Federal Register on September 28, 2000. Federal facilities were cited for creating a wide range of pollution, including radioactive and toxic waste. The final list will be released in April 2001.

According to the notice, EPA's priorities were set in areas where their enforcement programs are likely to have the most impact on human health and the environment. They also considered geographical areas with significant patterns of noncompliance.



ON BOARD

Ozone-Depleting Substances (ODS) Phase Out Submitted by Howard Galliford (CG YARD)

Executive Order 13148 requires that the Coast Guard phase out the procurement of Class I ozone-depleting substances (ODS's) for all nonexcepted uses by 2010 and turn in all Class I ODS's (usually Halon and R-12) to the Defense Supply Center Richmond (DSCR). The phase-out of R-22, a class II ODS, is accelerated and United States production of R-22 will be banned in 2020, unless it is to be used as a refrigerant in appliances manufactured prior to 1 January 2010. Based on a 15-year life cycle of refrigeration equipment, the Coast Guard expects to cease installation of R-22 units by 2010.



Over 99% of Coast Guard vessels have undergone R-12 conversion; with the remaining to be completed by 2002. New cutters, the GLIB, and Deepwater will use R134a or other non-ODS refrigerants. Coast Guard aircraft have implemented some reductions in Class I ODS's, mainly Halon, however, most is mission critical use and will

remain in service until decommissioned. New aircraft will begin looking at alternatives to Halon.



Class I and Class II ODS's are also used at most Coast Guard shore facilities. Using a 1994 baseline, and an estimated 10% to 20% reduction over the last 6 years, the Coast Guard estimates shore facilities have in use over 50,000 pounds of ODS's in 2000. A 40% annual reduction in procurement and substitution with non-ODS materials would result in elimination of almost all ODS in the shore plant by 2010.

In 2001, the Coast Guard will kick off a plan to meet these goals. A website providing detailed information on the Coast Guard's ODS program will also be prepared next year.

For more information, contact Howard Galliford (CG YARD) at (410) 636-7070 or e-mail: hgalliford@cgyard.uscg.mil.

"Green" Engines

Submitted by LCDR Doug Subocz (G-AWL)

In June of 1999, in response to Annex IV of MARPOL 73/78, Regulations for the Prevention of Air Pollution from Ships, the Coast Guard made the proactive choice to install more energy efficient engines, which meet the suggested standards, on the WLB B-Class ships. From a contract standpoint, this provided the opportunity for all WLB B-Class vessels to be equipped with environmentally compliant Ship's Service Generators (SSGs) and Main Propulsion Engines (MPEs) that would be supported by the manufacturer for the life of the WLBs. From a technical standpoint, the old model 3508 SSGs were replaced with a new model 3508B which have a new block, new bearings, new cams and an electronically controlled fuel injection system. The old model 3608 MPEs remained with the following modifications: retarded engine timing, a new temperature regulator, a larger heat exchanger, a new camshaft and a new turbocharger.

For more information, contact LCDR Doug Subocz, Technical Manager, WLB Replacement Project at 202-267-2893 or email: dsubocz@comdt.uscg.mil

A New Intern for G-SEC-3

The folks in the Environmental Management Division (G-SEC-3) at Coast Guard Headquarters are once again taking part in Indiana University's Washington Leadership Program in the form of a new intern. The School of Public and Environmental Affairs provides their highest

achieving students the opportunity to spend a semester in Washington, D.C., working for the Federal government. The volunteer internship provides the opportunity for the student to apply classroom theory to real-world activities and develop new professional skills.

G-SEC-3's intern this semester is David Trailov from Indiana University. He is expected to start 16 January 2001. David will be helping with the E-Times and a variety of other tasks to help support the G-SEC-3 team. One of David's first tasks will be to introduce himself to the Coast Guard environmental community through a brief article in the next E-Times newsletter.



P2 AND YOU

Federal Facilities Compliance Assistance— Mercury Audit

Submitted by Carolyn Cooper, U.S. Coast Guard Academy, Environmental Branch

As part of its pollution prevention efforts, the Coast Guard Academy worked with the Federal Facilities Office at EPA Region 1 to conduct a mercury audit of the Academy. The intentions of the audit were twofold: first, to conduct a baseline survey to determine the extent of mercury and mercury containing devices used, and second, to determine appropriate goals for the reduction of mercury.

Academy Environmental Branch personnel completed a pre-visit questionnaire with the cooperation of maintenance shops and laboratories to get a general idea of the scope of mercury use. On June 21, 2000 a compliance assistance team arrived at the Academy to conduct a two-day site visit.

The Environmental Branch learned a great deal from the knowledgeable compliance assistance team. Mercury supplies and devices were found in at least 17 different maintenance shops and laboratories. The team discovered large quantities of unused elemental mercury, mercury compounds, and mercury containing devices that were targeted as pollution prevention opportunities. As with other facilities the team had visited, overall mercury awareness was determined to be low at the Academy. It was discovered that spills of mercury (broken thermometers especially) were not being reported to the Environmental Branch or handled appropriately. The team made Academy personnel aware that scientific laboratories

Mercury poisoning, once common among felt workers, produces tremors, known as "the hatters' shakes, and delusions and hallucinations, which gave rise to the phrase "mad as a hatter."

sometimes pose a health risk to workers as a result of historic mishandling of mercury.

As a result of the findings made during the mercury audit, the Environmental Branch mounted a rigorous effort to reduce the amount of mercury stored and used at the Academy and to increase mercury awareness. Mercury is now addressed in spill response procedures and spill kits now include mercury recovery tools. Outreach efforts were redoubled to ensure the entire community participates in the fluorescent bulb recycling program. A suspect laboratory was monitored and decontaminated to remove off-gassing mercury from flooring materials. Over 100 pounds of elemental mercury, 80% of the Chemistry Department's mercury compounds, 37 unused (mercury filled) manometers, and over 150 mercury thermometers were disposed and/or recycled. The Academy was thrilled with the outcome of the audit and the value provided by the EPA Region 1 compliance assistance team.

Costs related to the audit include \$2600 spent on disposal and recycling, \$2530 spent on site investigation and clean up of the lab, and \$1900 on the purchase of alcohol and Teflon® coated thermometers. For information regarding the Academy's experience, please contact Ms. Daria Till, the Academy's Environmental Branch Chief at (860) 444-8244. For information about mercury in general, try www.epa.gov/region01/steward/fedfac/mercbroc/html.



Be advised: the new Persistent Bioaccumulative Toxic (PBT) Chemicals Rule promulgated under EPCRA section 313 reduces the mercury threshold that triggers TRI reporting to ten (10) pounds.

Rag Rule Around the Corner

Submitted by CAPT Mike Herring, Environmental Compliance Division, Support Center Elizabeth City, NC

The EPA is moving ahead with its shop towel regulations and plan to have the proposed rule out by the first quarter of 2001.

Preliminary language to the rule targets 13 hazardous solvents: 2-nitropropane; nitrobenzene; methyl ethyl ketone; methyl isobutyl ketone; methylene chloride; pyridine; benzene; cresols (o,m,p); carbon tetrachloride; chlorobenzene; 1,1,2-trichloroethane; tetrachloroethylene; and trichloroethylene.



If a towel is "dry" (contains less than 5 grams of solvent), it can be sent to landfills or industrial laundries. But, even a dry towel can't be sent to a landfill if it contains one of the 13 targeted solvents. Wet towels cannot be sent to landfills.



LEGAL CORNER

The New White House Environmental Initiatives

Submitted by Francis H. Esposito, Office of Environmental Law (G-LEL)

The last year of the Clinton-Gore Administration has seen some interesting and challenging efforts to expand the role of the federal government to protect the environment. This has been done primarily through the use of Executive Orders. These executive orders have created a mass of new requirements and placed greater restrictions on the operational efforts of federal agencies, like the Coast Guard. This year alone, at least four significant executive orders have been signed:

1. Executive Order 13158 Marine Protected Areas requires federal agencies to “take appropriate actions to enhance or expand protection of existing marine protected areas” as well as a general requirement which sounds, faintly, like that in the CZMA or NEPA:

Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.
2. Executive Order 13175 Consultation And Coordination With Indian Tribal Governments reaches all forms of agency actions (rules, enforcement, operations etc.) in that each agency must respect tribal self-government by rendering the tribes the “maximum administrative discretion possible” for all laws that they administer and by consulting with the tribes prior to adopting policies or rules that could affect them.
3. Executive Order 13148 Greening The Government Through Leadership In Environmental Management sets a course for federal agencies to emphasize organizational performance in environmental management, environmental compliance, pollution prevention (P2) and public right-to-know.
4. Executive Order 13149 Greening The Government Through Federal Fleet And Transportation Efficiency, a companion to EO 13148, calls for reductions in fuel consumption, among other things.

Consulting Counsel for Environmental Cleanups

At the recent USCG Environmental Forum (see page 1), a presentation on restoration activities at a relatively large CG facility revealed a well-coordinated effort among

various Coast Guard commands and staff elements and the State regulatory agency. It was apparent, however, that neither the unit nor the Civil Engineering Unit (CEU) had consulted USCG attorneys regarding any aspect of the cleanups. In fact, in order to determine whether there was a requirement to report newly discovered contamination to the State, the unit consulted the Strike Team.

Field commands should be aware that many environmental regulators might view activities at Federal facilities as a means of accessing the “deep pocket” of the United States Treasury. This should be of some considerable concern to field units, since the Financial Resources Management Manual directs that environmental fines and penalties will be paid from OE funds, likely those of the unit involved. Therefore, it is highly recommended that you consult with Coast Guard counsel **BEFORE** entering into any kind of discussions with the regulators.

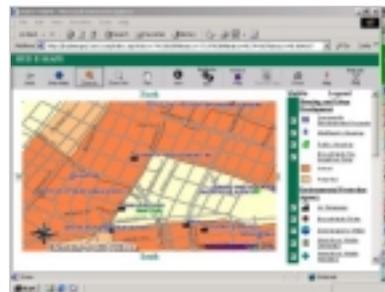
Every USCG command has access to Coast Guard attorneys who can either answer questions and assist in negotiations or refer the matter to attorneys at the MLC or G-LEL who can assist and advise. This counsel is free for the asking! Servicing environmental professionals should be alert for regulatory issues in which a unit has not involved its attorneys, and should suggest that it might be wise to do so sooner, rather than later, as damage control.



UNTANGLING THE WEB

HUD E-MAPS

HUD has announced an electronic database that integrates housing data from HUD and pollution data from EPA. The HUD E-MAPS integrates environmental cleanup projects, pollution sources, and other contaminated areas with



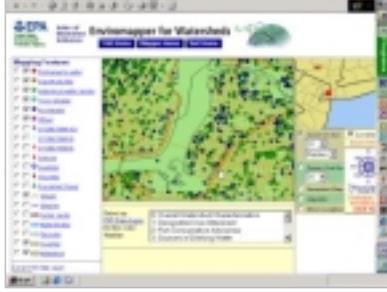
HUD’s housing data. Searches can be made by zip code or city name.

This database is an attempt to integrate data across federal agencies, and make it accessible to the public. In addition to cleanup projects, viewers can identify the proximity of housing to large air pollution sources, to facilities that release toxic materials and discharge wastewater, and to brownfields, which are abandoned industrial sites.

The HUD E-MAPS are located on the web at:
<http://www.hud.gov/emaps/>.

The EPA has a similar database mapping system online called EnviroMapper located on the web at: <http://map2.epa.gov/enviromapper/>.

EnviroMapper is able to map several types of environmental information, including drinking water, toxic and air releases, hazardous waste, water discharge permits, and Superfund sites at the national, state, and county levels.



Best Computer Recycling Resources on the Web

Millions of new computers will be purchased as holiday gifts this year. Many of these machines will be replacing older, slower computers.

Even though 90 percent of computer contents can be reused, only about 6 percent of abandoned computers were recycled in 1998. The National Safety Council projects that over 315 million computers will become obsolete by the year 2004 and that simply throwing these machines away would add an estimated 8.5 million tons of waste to America's landfills. There is a growing concern because literally hundreds of the materials—including chlorinated and brominated substances, metals, gases, acids and plastic additives—are highly toxic.

Holiday Tips for Green PCs:

- Find a home for your computer with a national nonprofit group. Go to: <http://www.usedcomputer.com/nonprof.html>.
- Here's a state-by-state listing of organizations that recycle computers. Go to: http://www.microweb.com/pepsite/Recycle/recycle_index.html.
- For information on passing your computer along to a charity or school which could put it to use. Go to: <http://sharetechnology.org/>.
- You can use your Zip code to find local recycling options for computers and other materials. Go to: <http://www.1800cleanup.org/>.

Off the Web, you can look up "Recycling Services" in your local Yellow Pages. In many communities, you will find listings for computer recycling services.

Environmental Web Sites

The following list of websites is just a sample of the list containing 450 environmental websites that were made available at the Environmental Forum 2000. To obtain a complete list of websites, contact: Howard Galliford (CG YARD) at (410) 636-7070 or e-mail: galliford@cgyard.uscg.mil

- Environmental Executive Orders
<http://earth2.epa.gov/program/exec/12843.html>
- ODS
www.epa.gov/ozone/geninfo/numbers.htm
www.epa.gov/ozone/title6/snap/lists/index.html
www.ciesin.org
www.hwr.arizona.edu/~Alpine/h107b/lectures/ozone/ozone.html
www.al.noaa.gov/wwhd/pubdocs/Assessment94/com-mon-questions.html
www.navyseic.com/ozon/ozone.html
www.dscr.dla.mil/products/epa/eppcat.htm
- Chemical Elimination of Asbestos in Installed Fireproofing
www.pubaf.bnl.gov/pr/gracebnlpr121097.html
- CDC – National Center for Environmental Health
www.cdc.gov/nceh/ncehome.htm
- OECA Implementation Guide for the Code of Environmental Management Principles for Federal Agencies
<http://es.epa.gov/oeca/cemp/cemptoc.html>
- Joint Group on Acquisition Pollution Prevention
www.jgpp.com/
- Green Pages: Environmental Resources on the Internet
www.etc.amesiab.gov/etc/library/greenpages/ennpg.html
- EPA's IRIS (Integrated Risk Information System). Contains information on human health effects that may result from exposure to various chemicals:
www.epa.gov/ngispgm3/iris/index.html
- Hazardous Materials Information System (HMIS)
www.dscr.dla.mil/hmis/hmishome.htm

Joint Service Pollution Prevention Technical Library



The Joint Service Pollution Prevention Technical Library is the only truly *Joint Service* entity as it is backed and funded by all four services, the Defense Logistics Agency (DLA), and the Coast Guard. The Library deals with pollution prevention and compliance information and is comprised of five main elements:

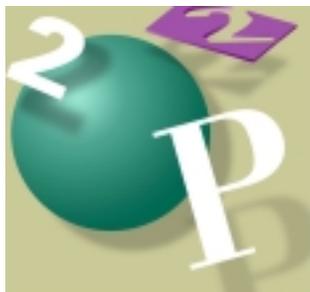
- the Joint Service Pollution Prevention Opportunity Handbook,
- the Navy's Pollution Prevention Equipment Book,
- DLA's Environmental Products Catalog, and
- the Joint Group on Pollution Prevention's Technical Documents.

The Library has succeeded in sharing the lessons learned across the joint services and passed these technologies and management practices on to individual installations. By sharing the lessons learned from joint service installations last year, the average Library user found eight alternatives which saved their installation roughly \$2,100 in research time. By implementing these alternatives they saved their installation an additional \$5,200. Several installations reported that by implementing a technology found in the Library, they saved their installation over \$60,000 in one year alone. Cost savings like these make the Library a very worthwhile place to spend your time. The Library can be found at: <http://enviro.nfesc.navy.mil/p2library/index.html>.



MARK YOUR CALENDARS

FEBRUARY 2001



National Pollution Prevention Roundtable (NPPR) Spring 2001 Conference

The National Pollution Prevention Roundtable (NPPR) Spring 2001 Conference, being held in the heart of Chicago,

Illinois, will focus on the latest in pollution prevention (P2) policy, regulatory and technical assistance initiatives. Plenary sessions will feature lawmakers and other high-ranking officials who will talk about ways P2 can be included into federal, state, and local policy. Several new cutting edge sessions that began at previous Spring Conferences will be enhanced to further highlight P2. The very popular sustainable development, healthcare P2 and technical sessions will be expanded to accommodate the high level of interest in these areas. Innovative programs will be showcased in numerous other topical sessions including Information Tools and Networks, Local Government, Small Business, Regulatory Integration and Education, Training & Learning. For more information, contact NPPR at (202) 466-P2P2 or visit their website at www.p2.org/.

MARCH 2001

International Oil Spill Conference 2001

Submitted by LT W. Michael Pittman (G-MOR-1)

The International Oil Spill Conference 2001 "Global Strategies for Prevention, Preparedness, Response and Restoration" is one of the best opportunities for training/expert-to-expert interaction. The USCG has been a co-sponsor since the beginning of the Conference in 1969. Marine Safety and Environmental Protection professionals come from all corners of the globe for the 4-5 day event. Many CG authors participate in the presentations of professional papers with other experts from industry, government and the private sector. Attendees see the latest in Environmental Response Technology. The next Conference is scheduled in Tampa, Florida, March 26-29, 2001, a great buy for under \$500. For an additional modest cover charge formal courses are available on a variety of related topics. Check out the website at www.iosc.org/ for the latest. The website is also a great resource for active environmental internet links. See you there!



SCHOOL DAZE

DoD Environmental Training Courses

All the courses listed below are approved by the Interservice Environmental Education Review Board (ISEERB).

School: Army Logistics Management College (ALMC)

Web Address: <http://www.almc.army.mil/>
POC: Mr. William D. Hamilton (804) 765-4770
E-mail: hamiltow@lee.army.mil

National Environmental Policy Act (NEPA) Implementation Course	ALMC-EJ
Defense Hazardous Material/ Hazardous Waste (HM/HW) Handling	ALMC-HA

School: School of Aerospace Medicine (USAFSAM/EAM)

Web Address: <http://www.sam.brooks.af.mil/>
POC: Mr. Charles Deosdade (210) 536-4680
E-mail: charles.deosdade@brooks.af.mil

Data Quality Objectives	B30ZY0000E-15
HAZWOPER	B30ZY0000E-001
HAZWOPER Refresher	B30ZY0000E-002

School: Navy – Civil Engineer Corps Officers School (CECOS)
Web Address: <http://www.cecoc.navy.mil/>
POC: Ms. Coral Norton (805) 982-2985
E-mail: nortonca@cecoc.navy.mil

Basic Environmental Law	A-4A-0058
Introduction to Cultural Resource Mgmt	A-4A-0070
Historic Preservation Law and Section 106	A-4A-0073
Environmental Risk Communication	A-4A-0072
Natural Resource Compliance	A-4A-0087
Native American Traditions and Cultures	A-4A-0085
Ecological Risk Assessment	A-4A-0081
Environmental Quality Sampling—Water	A-4A-0026
Environmental Quality Sampling—Soil, Hazardous Waste, Groundwater	A-4A-0025

School: ARMY - Professional Development Support Center (PDSC)
Web Address: <http://www.hnd.usace.army.mil/>
POC: Ms. Sherry Whitaker (256) 895-7425
E-mail: sherry.m.whitaker@hnd01.usace.army.mil

Environmental Laws & Regulations	170/CECC-E33ELRO1A
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School: Air Force Institute of Technology
Web Address: <http://www.afit.af.mil/>
POC: Ms. Pam Young (937) 255-5654 ext. 3587
E-mail: Pamela.young@afit.af.mil

Air Quality Management	ENV 531
Environmental Compliance Assessment	ENV 020
Pollution Prevention Program Operations Management	ENV 022
Environmental Contracting	(ENV 418)



PUBLICATIONS

Directives and Publications for Environmental Management

Is your library complete and up to date?

COMDTINST/Pub/Note	Date
M16478.2 The Procurement, Handling and Disposal of PCBs	11/16/81
M16478.1B Hazardous Waste Management Manual	03/25/92
16478.5 Environmental Compliance Evaluation (ECE) Program	10/04/92

COMDTINST/Pub/Note	Date
16477.5 CG Qualified Recycling Program (QRP) Policy	03/16/94
16478 Facility Response Plans	02/02/95

COMDTINST/Pub/Note	Date
11300.3 Storm Water Mgmt. Guide	03/27/95
16478.12 National Plan for ATON Battery Recovery and Disposal	05/01/95
16451.8 CAA Employee Commute Options (ECO) Program	05/22/95
M16455.10 Emergency Planning, Community Right-To-Know Act and Pollution Prevention	06/13/95
M5090.9 Storage Tank Management Manual	11/02/95
P16480.1 Emergency Planning, Preparedness, and Prevention Guide for Oil Spills and Hazardous Substance Releases	03/05/96
16475.5 Environmental Initial Assessment Survey (IAS) Program	03/06/96
5090 Strategic Plan for Environmental Mgmt. (SPEM) in USCG	03/15/96
16478.10 ATON Battery Release Reporting Requirements	06/10/96
4454.1 Vehicle Inspection and Maintenance (I/M) Program	07/18/96
5090.3 Natural Resources Management	11/10/97
M16475.1C National Environmental Policy Act Implementation Procedures	11/14/97
5090.5A Pollution Prevention Awards Programs	01/14/98
16000.1 Mandated use of Recycled Copier Paper	04/06/98
P6280.3 Management Guide for Refrigerants, Coolants and Fire Suppressants	07/26/99
P16475.6 Environmental Considerations for Decision Making	09/14/99
P5090.1A Commanding Officer's Environmental Guide	02/04/00



ENVIRONMENT EXTRAS

Bacterial Invaders Ride the Seas

Written by Hillary Mayell, reprinted with permission from the National Geographic News website

Ships plying the seven seas are carrying large volumes of bacteria and viruses, and transferring them from one port to the next, say United States researchers.

Microorganisms are a significant component in ballast water of ships and are being discharged in quantities that could pose profound problems, says Gregory Ruiz, an aquatic ecologist at the Smithsonian Environmental Research Center.

“We don’t want to be alarmist and say there is going to be a major outbreak of disease because of these transfers,” says Ruiz. “The key point is large-scale transfer is taking place, we don’t know what the impact is, and no one is really looking at it.” Ruiz is the lead author of a study published in the November 2 issue of the journal *Nature*.



Courtesy NOAA

Tankers from around the world arrive in United States ports and discharge approximately 79 billion tons of ballast water annually.

Ships take on ballast water for stability in the trip across the ocean and then discharge the water at the port of call. The tremendous increase in global trade and the size of ships has significantly escalated the potential for the transport of invasive species from one ecosystem to another.

The United States and Australia, for instance, each receive about 79 billion tons of foreign ballast water annually.

Tracking Invaders

Successful invasions of plant and animal species via ballast water are well documented. Zebra mussels, native to the Caspian Sea, arrived via ballast water discharged in the mid-1980s into the Great Lakes of the United States. They have now spread to aquatic ecosystems in 22 states, with devastating economic and environmental consequences.

Mnemiopsis, a comb jelly species indigenous to the Chesapeake, traveled to the Black Sea in similar fashion at about the same time. Lacking predators in its new environment, the comb jelly population boomed, causing an almost total collapse of several of the sea's fisheries. Water hyacinth, an aquatic weed, has infested waters in the Americas, Asia, Australia, and Africa.

Ruiz and his colleagues argue that microorganisms have the same potential for spread and wreaking havoc, but have gone virtually unstudied. To test the hypothesis, they analyzed the ballast water of ships coming to port in Chesapeake Bay and found that the total bacteria count for

each liter of ballast water dumped into the bay was 1 billion bacteria and 7 billion virus-like particles.

They also looked specifically at a human pathogen, the bacteria *Vibrio cholerae*, types 01 and 0139, which cause human cholera. Cholera, a disease marked by severe diarrhea and vomiting, can lead to death if not treated. They found that at least some of the *V. cholerae* bacteria remained viable when discharged into the Chesapeake, presenting an opportunity for colonization.

Shutting The Door On Colonization

No outbreaks of human disease have been tracked yet to non-indigenous microbes in ballast water, but it may be just a matter of time.

“There are a lot of vectors for the spread of human pathogens. The trade of food and the movement of people are known to be mechanisms of transfer, and they all converge at ports, so it's very difficult to determine what horse it (a human pathogen) rode in on,” says Ruiz.

Tools for minimizing invasive plant and animal species are being developed. But the techniques, which include exchanging ballast water at sea, installing filtration systems, and subjecting the ballast water to heat and chemical treatments, might not be as effective with microorganisms, says Ruiz. The small size of microorganisms could easily defeat filtration systems, and heat may be a really good environment for incubating and growing them.

“The magnitude of transfer of microorganisms that's going on and has been going on for some time and will continue to occur points to the need for us to think on a more broad scale that includes bacteria and viruses.”

“We have seen changes — increases in disease outbreaks, phytoplankton blooms, parasitic outbreaks in the marine environment, and so on — but the causes have not been identified,” says Ruiz. “It's been suggested that they're caused by global warming, climate change, and habitat destruction and while these may be factors, we're saying that these transfers are something that should also be looked at.”

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“To waste, to destroy, our natural resources, to skin and exhaust the land instead of using it so as to increase its usefulness will result in undermining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed.”

—Theodore Roosevelt