ASSESSMENT OF LETHAL CHEMICAL AND CONVENTIONAL MUNITIONS IN THE NATION'S WATERS

Prepared for:
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Project Title: GA2132:
SME Underwater Munitions Panel

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FORWARD

UNDERWATER MUNITIONS: A DOCTRINE OF DENIAL

Introduction:

It is not surprising we know less about underwater munitions than other legacy defense wastes. Affected stakeholders are forced to operate under a government imposed, US Department of Defense enforced, "Doctrine of Denial." Specifically, furtive denials that trace level releases of munitions constituents can pose an ecologic threat to surrounding waters.

This is because from a financial perspective, every aspect of marine resources is touched by their presence in some way, in some place. They can remain in salt water fully intact and in pristine condition for over one hundred years, or rust so thoroughly in a few decades that only the non-soluble explosive filler and a few metal fragments remain. Underwater munitions are ignored by most people and cursed by others for damage to coral reefs. And to some clam fishermen they are literally a pain, having been exposed to chemical agent leaking from projectiles mixed in with the days catch.

To the experts however, they evoke a lack of economic liability. Until this matter is resolved, the US Department of Defense will continue to launch and direct scientific research efforts involving otherwise reputable partners to arrive at a simple, pre-ordained conclusion; "the best thing to do is nothing".

Nothing evinces this better than does the "Ordnance Reef Environmental Impact Statement (EIS); and "Hawai'i Undersea Military Munitions Assessment (HUMMA)". Both were completed off the coast of the Island of Oahu, Hawai'i, by congressional mandate; under the direction of the US Department of Defense. Squarely between the two, is a site called the "Barbers Point Ammo Dump"; perhaps the largest continuous carpet of near shore munitions in any US waters. Beginning about a mile from shore in approximately 120 feet of seawater (FSW), it continues in a steep grade over a distance of four nautical miles to a depth of about 2500 FSW. According to the "History of NAD Oahu", this deposit sits on the doorstep of the oldest ammunition depot in the world, explaining its origin. But somehow, this familiar site was overlooked.

Background:

Military assets provide rapid response for the occasional munition item that washes ashore, but accepts no liability or interest in the pile from which it came. Dissenters to the status quo are forced into a no-win fight with the US Department of Defense, who in turn expend enormous sums of money and institutional credibility in order to subdue or suppress affected stakeholders in concerted and always successful attempts to maintain the status quo.

At times these costs have exceeded those of actual clean-up, unless one factors in the flood of requests from others certain to follow once the doctrine of denial is ended. The doctrine of denial has been observed influencing due process with regard to the federal court system; congressional mandates; and at least one presidential investigation. The ongoing struggle has stifled technological innovation, disparaged independent research; intimidated federal, state, and territorial regulators; academic institutions; and bankrupted individuals.

Scope:

Underwater munitions of all kind and quantity can be found abandoned throughout US waters.

In addition to coastal deposits, a surprising number are located within lakes, rivers, and estuaries. Where most coastal deposits were the result of disposal operations, the vast majority of those found inland originated from shore based gunnery practice or research activities; and to a lesser degree, from ship and aerial bombardment.

The significance of underwater munition deposits is best quantified in terms of economic impact related to specific resource use, as that is the bond shared by all. To determine the economic impact of any deposit on a particular resource, an analysis of two distinct factors is required; the potential for detonation, and that of pollution (also expressed as energetic and ecologic factors; respectively).

To date, the remediation of underwater munitions has been limited to concern over energetic factors associated with human activity of some kind. Yet the ecologic factors associated with even great quantities found in strategic freshwater assets are ignored. This is no surprise, as independent peer reviewed scientific research verifying underwater munitions as "point source emitters of pollution" is rejected by the US Department of Defense. For affected stakeholders, the bulk of whom remain unawares; this finding represents a paradigm shift in calculus when determining the economic impact of underwater munitions on specific resource use.

Conclusion:

The doctrine of denial surrounding the ecologic influence of underwater munitions serves the interests of no one, and can be altered only after the issue of liability has been addressed. When considering this, it is important to recognize the US Department of Defense does not make policy, but dutifully carries it out.

RECOMMENDATIONS

RECOMMENDATION FOR IMMEDIATE ACTION

Pursuant to public law* requiring the CDC to review "particulars and plans" associated with transportation and disposal of lethal chemical warfare materials to ensure that public health and safety is adequately protected;

and as per my interaction with senior representatives from the U.S. Navy Chief of Naval Operations; the U.S. Navy Atlantic Fleet Forces Commander; the U.S. Naval Facilities Engineering Command Atlantic Division; the U.S. Army; the U.S. Army Corps of Engineers; the U.S. Coast Guard; the Bureau of Ocean Energy Management; the National Oceanic and Atmospheric Administration; the State of Michigan's Department of Environmental Quality;the State of Ohio's Department of Environmental Protection; the University of Hawaii, Manoa Campus; the Seventh Circuit Federal Court of Appeals (Chicago);

and epitomized by comments recorded on Monday, 4 April, 2016 by Underwater Munitions Panelist J.C. King (U.S. Army) during our discussion regarding chemical weapons located on Ordnance Reef, Oahu, HI; and throughout the Great Lakes;

the following observation and recommendation is tendered:

- Due to a loss of confidence in the U.S. Department of Defense ability to demonstrate the leadership necessary to ensure that public health and safety is adequately protected in matters associated with the transportation and disposal of lethal chemical warfare materials;

- I recommend they be suspended from all decision making responsibilities in this area, with special emphasis on the immediate cessation of all "particulars and plans" associated with the remaining congressionally mandated environmental impact statements as defined in the 2007 Defense Authorization Act; and relegated to "vendor status," to be paid outright for services rendered as applicable.

Note: additional details available via classified brief

*-Public Law 91-121 (November 19, 1969) as amended by 91-441 (October 7, 1970) passed as a
result of public opposition to the afore mentioned law
-Public Law 99-145 (November 8, 1985)

LONG RANGE RECOMMENDATIONS

- Privatize ecologic liability for underwater munitions
- Conduct a thorough evaluation of the Barbers Point Ammo Dump
- Conduct a detailed analysis of defense wastes in the Great Lakes
- Review the current "command and control" framework for the DoD's remaining congressionally mandated environmental impact statements, as defined in the 07 Defense Authorization Act.
- Expand the existing archival research mandate as defined in the 07 Defense Authorization Act to include the Great Lakes, the Chesapeake Bay, the Gulf of Mexico, the Caribbean, and the South Pacific.
- Update the DoD's master template for marine based environmental impact statements to reflect the presence and generic implications of sea dumped munitions deposits.
- Establish policy guidance for BOEM to manage tracts of seabed for offshore natural resource development known or suspected to contain munitions deposits.
- Establish exclusion zones for seismic testing over known or suspected munitions deposits.
- Expand the technology demonstration progress already accomplished on Ordnance Reef (off the nearshore coast of Oahu, HI) to include a technology demonstration at the "Barbers Point Ammo Dump" using the "Ordnance Harvester," a 2,000 LB load bearing capacity seafloor based handling, packaging, and non-destructive munitions/hazardous wastes remediation system.
- Expand NOAA's existing mandate to locate and chart significant WWII shipwrecks located in the "Graveyard of the Atlantic" off the coast North and South Carolina, to include mapping the numerous and large scale chemical and conventional munitions dump sites located there.
- Fund an epidemiology study on Vieques Island residents that compares chemically induced genetic abnormalities with those of similarly exposed close proximity/downwind residents of a live fire impact range located in a NATO country.

NGO Support and Other Recommendations:

- Regular financial support for the International Dialogue on Underwater Munitions.
- "Sovereign Indemnification" to establish global immunity from liability for defense wastes abandoned underwater without regard to provenance.
- A NATO sponsored medical facility and med flight capable airport development project on the U.S. Navy's former Vieques Island Bombing Range.
- Consolidation of U.S. underwater munitions research and remedial initiatives under a semi-autonomous NGO.

ANALYSIS

A META ANALYSIS OF DEFENSE WASTES IN THE GREAT LAKES

Pursuant to Public Law 91-121 (November 19, 1969) as amended by 91-441 (October 7, 1970) passed as a result of public opposition to the afore mentioned law, and Public Law 99-145 (November 8, 1985); the
Center for Disease Control is required to review "particulars and plans" associated with the transportation and disposal of lethal chemical warfare materials to ensure that public health and safety is adequately protected.

Chemical weapons research and production activities in the Great Lakes region first began near the close of World War I, when the science of chemical warfare in the United States was still in its infancy. By World War II, as the industrial sector converted to war production on an unprecedented scale, the regional production of chemical weapons materials increased as well.

In the United States territorial waters of the Great Lakes, there are no designated munitions dump sites on nautical charts for either chemical or conventional munitions. Yet at least some dumping of conventional and radiological wastes is known to have occurred. The largest munitions contributions identified to date are associated with direct fire activities from shore based fixed firing point facilities used for munitions research and training; while those originating from ships, submarines, and aircraft remain unaccounted for, as are concentrations. The intensity of these activities has varied over the decades and continues to this day. There are multiple sites where munitions fired into the lakes number in the millions, a minimum of 10% of which would fail to function as designed and remain intact. Where the filler content of any munition could be high explosive, white phosphorous, or chemical agent; no one can say with certainty what filler material was used until the munition is closely examined. What is certain is that a percentage from each new lot of munitions produced had to be test fired in order to certify the lot suitable for shipment to the front lines.

Scientific research indicates a footprint of munitions constituents can be detected up to three meters from fully intact explosive filled projectiles residing in a saltwater environment since WWI. Peer reviewed research on a WWII 2,000 LB bomb residing in saltwater indicated a slightly less range of detection. Unlike exactly the same munitions on land, those located underwater are not classified as point source emitters of pollution. Accordingly, there is no history of ecologic based remediation of munitions from underwater.

Critically, there is no central database or authority consolidating what little is known of these deposits; nor accounting for the totality of ecologic impact, despite each lake having significant deposits. It is worth noting that this analysis is the first of its kind.

Strategic asset capacity and development plans in use by municipal stakeholders then miss key indicators required for making medium and long term infrastructure investments in the presence of persistent bio-accumulative munitions constituents. In short, they remain oblivious to the potential threat, even as some fresh water intake cribs draw water from directly inside impact zones littered with tons of lead bullets from decades of intense military small arms fire. Due to the littoral drift of sediments caused by the Moon's gravitational pull imparting a counterclockwise rotation of lake waters, those drawing water from outside such an impact zone can experience an increase in ambient lead levels.

At least one affected municipality delivers water having near actionable levels of lead content.

Few municipal treatment plants test for the presence of munitions constituents. Few if any, is capable of eliminating even a modest range of these, which requires an upgrade costing an estimated $50 million, per existing plant. In the event of municipal asset failure, the true cost will be reflected in terms of diminished public health and safety.

ANALYSIS OF ORDNANCE REEF ENVIRONMENTAL IMPACT STATEMENT (EIS) FINAL REPORT

ORDNANCE REEF, WAI'ANAE, HAWAI'I. Remote Sensing Survey and Sampling at a Discarded Military Munitions Sea Disposal Site FINAL REPORT March, 2007 http://sanctuaries.noaa.gov/news/press/ordnance_reef_final.pdf

The Ordnance Reef (EIS) Final Report is a construct intended to keep from the US Congress and Hawaiian public at large the environmental impact of multiple, large scale deposits of Vietnam and WWII era bombs of unconfirmed fill that remain unreported in this work product, yet are located within the same Wai'anae Coastal Zone[1] as the area selected for study which by comparison, is largely barren.

The Ordnance Reef EIS Final Report attempts to balance growing public concern over the presence of underwater munitions against the US Department of Defense commitment to institutional solvency by externalizing the cost of legacy waste stream management upon an unsuspecting public.

The primary mechanism supporting this doctrine on Ordnance Reef was "Side Scan Sonar" being selected as the technology to perform the "remote sensing" aspect of the project; a process more commonly referred to as "wide area assessment" (WAA).

The use of Side Scan Sonar over an irregular sea bed can produce ambiguous results requiring skilled and lengthy interpretation. It is a good technology for acquiring targets within a small set of coordinates, but entirely inappropriate for cost effective searches for munitions covered in marine growth spread across a wide area of irregular sea floor. No heavy concentrations of munitions were identified in this work product, so none were evaluated. Yet at least two are known to exist[2] within the Wai'anae Coastal Zone.

In contrast, the industry standard use of magnetic resonance imagery (Mag Survey)[3] is not restricted by marine growth or terrain, is fully adjustable to the magnetic content of sediments, and produces results that are neither ambiguous

[1] Designated "Class A waters;" from Barbers Point at the southern end, to Mākua Beach near the northern end

[2] Recorded comments to the CDC Underwater Munitions Panel April 4, 2016 by Ordnance Reef EIS architect J.C. King (US Army) regarding a large deposit of bombs near the area of study; and the author's 1975 visit (then a first responder on the US Navy Bomb Squad) to a different concentration of bombs; in response to a local Elder's protracted efforts to get our unit to remove them

[3] Fugro EMU Limited Unexploded Ordnance Detection https://www.fugro.com/docs/default-source/Expertise-docs/Our-Services/Survey/un-exploded-ordnance-detection.pdf?sfvrsn=8

nor subject to interpretation, as individual iron bombs and projectiles are readily apparent to the unskilled eye.

Recommendation:
Initiate a wide space transect Mag Survey WAA of the Wai'anae Coastal Zone's southern half (seven NM in length, extending seaward four NM from shore; comprising 30 sq NM in total).

PROPOSALS

PROPOSAL TO EVALUATE THE BARBERS POINT AMMO DUMP

Upon review of the Ordnance Reef Environmental Impact Statement (EIS), I find it falls short of the 2007 National Defense Authorization Act (NDAA) SECTION 314 mandate to conduct an environmental impact study of a munition dump, because the area of study lacks the basic criteria for meaningful research; heavy concentrations of any kind of munition, and no bombs except a single 100 LB unit.

The nearby Barbers Point Ammo Dump presents a sea floor carpeted with heavy concentrations of close proximity 500 LB bombs, with projectiles strewn in between.

The aggregate chemical release from heavy concentrations of static munition deposits hold the greatest potential for adverse ecologic impact, and trace level analysis of munitions constituents leaching from these deposits can be quantified to a higher degree of accuracy than from individual projectiles on the sea floor.

From this valuable data stakeholders nationwide can begin to make informed decisions about a number of munition deposits, including those having different shape but with the same fill compound and do so with reduced dependence upon US Department of Defense assets.

It is the environmental assessment of large, static concentrations of munitions found throughout US waters that SECTION 314 attempts to address on behalf of the American public, and chemical weapons play a starring role. Named after Senator John Warner (R-VA) and sponsored by the late Senator Daniel Inouye (D-HI); the 07 NDAA SECTION 314 was crafted in direct response to a nationally circulated series of articles on massive chemical weapon sea dump operations published October 30, 2005 in the "Daily Press" Hampton, VA; "Special Report, Part 1: The Deadliness Below"

http://www.dailypress.com/news/dp-02761sy0oct30-story.html

Determining the environmental impact of these kinds of sites is what the nation expects to discover; SECTION 314 was determined the best means to deliver the answer; and the Ordnance Reef EIS does not provide it.

An evaluation of the Barbers Point Ammo Dump satisfies the 07 NDAA SECTION 314 mandate in Hawaii, because assessing that site adds considerably to our knowledge base, and meets both the intent and spirit of the mission we are entrusted to fulfill.

PROPOSAL TO ENHANCE US DEPARTMENT OF DEFENSE OPERATIONAL READINESS BY PRIVATIZING THE ECOLOGIC LIABILITY FOR UNDERWATER MUNITIONS

Introduction:

This is a proposal to privatize ecologic liability for underwater munitions based on an objective assessment of their influence, current response actions, emerging concerns, and how taking an innovative approach to these can better serve the public while enhancing US Department of Defense Operational Readiness.

Overview:

As with all legacy defense wastes, underwater munition deposits were created out of necessity under difficult circumstances using the best practices of the day. While mostly out of sight, they have quietly influenced commerce a great deal by changing the course of bridges, shipping lanes and anchorages; near shore and water front development, tourism, certain fisheries; and now placement of sub-surface infrastructure for offshore natural resource development.

The US Army Corps of Engineers and others have met each of these physical challenges with due diligence and discretion. Yet an entirely new threat has surfaced that is beyond the capacity of traditional assets to address; the scientific verification that underwater munitions are in fact
"point source emitters of pollution"[4].

The US Department of Defense has steadfastly refuted this assessment, and gone to great length and growing expense to maintain a policy of denial. The reason is simple; there are few good options to choose from. The costs to effectively quantify and manage this liability remain unknown. What is certain is these costs could quickly rise to a level that becomes a material threat to Operational Readiness. As a nation at war, non-combat expenditures of this nature cannot be entertained. Yet the long term economic implication for citizens enduring the possibility of permanent, preventable damage to clean water, public health, economic development, and growth of sustainable fisheries, suggests an alternate policy to manage this issue is worth consideration, especially where it enhances Operational Readiness.

Privatization:

A value added solution to meeting ecologic based challenges associated with underwater munitions is "privatized liability". Everything points to a permanent shift of this liability from the US Department of Defense to a semi-autonomous

[4] Warfare Ecology: "Ecological, Radiological, and Toxicological Effects of Naval Bombardment on the Coral Reefs of Isla de Vieques, Puerto Rico" James W. Porter, James V. Barton, and Cecilia Torres

non-profit as meeting the needs for all concerned. Mitigating the ecologic impact of underwater munitions is an emerging discipline, with no expectation of expertise from within the Department of Defense, already over-tasked. As a counter to otherwise open ended fiscal liability that could imperil Operational Readiness, privatization establishes a more pragmatic and linear budgetary framework that can be augmented with support from the private sector.

Result:
Objective assessment, site prioritization, and remedial action/disposal plans are reviewed, approved and underwritten; facilitated in concert with stakeholders including state and federal regulators, with discretionary participation on the part of the US Department of Defense.

Conclusion:
In privatizing the ecologic liability for underwater munitions; the public interest is served and Operational Readiness is enhanced, reflecting a substantial credit to the US Department of Defense.

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Retired enlisted from the U.S. Navy Bomb Squad in 1999.

As a subject matter expert on defense wastes policy:

- Addressed President Clinton's panel investigating the Navy's Vieques Island Bombing range at the request of then Puerto Rico Attorney General Jose Augustino in response to testimony provided by then Atlantic Fleet Forces Commander Admiral William J. Fallon.
- Addressed a congressional oversight committee on the Spring Valley chemical weapons remediation project, in response to testimony provided by then Formerly Used Defense Sites (FUDS) Program Director and Deputy Assistant Secretary of the Army Environment, Safety and Occupational Health OASA (I&E), Addison D. Davis, IV.
- Addressed a panel chaired by then U.S. Coast Guard Commandant, Admiral Thad W. Allen, regarding his plans to establish 34 permanent live fire ranges throughout the Great Lakes, encompassing a total of 2300 square miles.
- Addressed the seventh circuit federal court of appeals in a case involving lead bullet deposits into Lake Michigan originating from the FBI's North Chicago small arms firing range.
- Co-Author and principal advisor on management and operations for a scientific field research project conducted on the Vieques Island Bombing Range, involving radiological and chemical assessments associated with marine based defense wastes (results published by NATO).
- Authored and lobbied congress to enact a clarifying amendment to the 07 Defense Authorization Act Section 314 concerning the mandate to conduct archival research of sea dumped munitions, in an attempt to expand the scope of existing geographic parameters.
- Developed a robotic sea floor based non-destructive munitions remediation system capable of handling and packaging 2,000 LB loads at depths in excess of 250 feet of sea water. The "Ordnance Harvester" was independently reviewed by a Pentagon sponsored study that deemed it "viable". An international patent has been awarded for this technology.
- Advised then Bureau of Ocean Energy Management Director Tommy Beaudreau, on the need to establish threat mitigation protocols for offshore

natural resource development in waters known or suspected to contain sea dumped munitions.

- Supported a U.S. State Department mission to Bosnia/Herzegovina to help assess that country's underwater munitions threat and evaluate their response capability and needs.
- Assisted Rep. Marcy C. Kaptur (D-OH) investigating munitions deposits in Lake Erie.
- Assisted Rep. Bobby C. Scott (D-VA) in accepting the transfer of Fort Monroe to Virginia.
- Assisted the State of Michigan DEQ find and manage disposition of munitions in Lake Michigan.
- Authored and presented a number of relevant papers both at home and abroad, including:

"Sea Dumped Munitions: Site Prioritization Based on Threat Factor Analysis"
"The Ecotoxicology of a Conventional Munition Decaying in a Coral Reef Environment"
"The Need to Establish Threat Mitigation Protocols for Seismic Testing in Waters Known or Suspected to Contain Sea Dumped Munitions"
"Sea Dumped Munitions: Sovereign Indemnification"

PART II

Military Munitions Status, Cleanup Policy and U.S. Environmental Law

Prepared for: CDC/NCEH
Project Title: GA2132: Underwater Munitions Panel
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ABSTRACT

The Clean Water Act, Resource Conservation and Recovery Act, (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA commonly known as Superfund) all regulate military waste depending on its location and disposal status. U.S. EPA by its Military Munitions Rule further interprets, by reference to RCRA, that munitions discarded into the environment be retrieved. This presentation suggests structural improvements to how the system currently operates where the violating polluter and financially responsible party is a federal agency in charge of its own environmental enforcement and cleanup.

OVERVIEW

U.S. policy on underwater munitions is abandonment despite that U.S. environmental law prohibits abandonment and mandates retrieval. This submission examines how and why the Department of Defense avoids its obligation to retrieve underwater munitions. The conclusion is the public good of chemical-pollutant reduction in public waters is damaged by munitions abandonment.

Two changes are suggested that are necessary to break the current policy of discarding munitions underwater. First, relieve DoD of enforcement authority and second, remove the cost of cleanup from DoD budget through direct Congressional budgeting of cleanup costs. Otherwise the public good will forever be held hostage by DoD's understandable but unrelated concern for non-warfighting spending.

The Law

The United States environmental laws governing underwater munitions are clear. The Clean Water Act (CWA) prohibits the discharge of pollutants into the nation's waters without a permit.[23] The federal Executive does not have a permit to discharge its munitions into the nation's waters.[4]

The Resource Conservation and Recovery Act (RCRA) regulates all solid waste, prohibits discarding waste, and grants the Judiciary authority to remedy violations.[5]

CERCLA (Superfund) regulates all past polluted sites, requiring selection of an effective and permanent remedy.

All these acts contain federal facility provisions requiring the same enforcement using the same standards as private facilities. All these acts also provide waiver of sovereign immunity for suits against the president by way of the citizen suit provision therein.[6]

U.S. EPA promulgated the Military Munitions Rule that addresses RCRA requirements for munitions.[7] Where munitions are discharged offsite, into the environment, they must be retrieved. Where munitions accumulate underwater, it violates RCRA's prohibition on discarding solid waste. Accumulation presents an imminent and substantial endangerment to human health and the environment.

One need not show an actual release of munitions constituents, or any existing harm, for there to be a violation that requires retrieval.[8] Environmental enforcers including CDC therefore need not prove harm from abandonment of underwater munitions in order to seek retrieval at particular sites. Discarded munitions are harmful as both energetics and point source emitters of toxic materials, which is why Congress prohibits abandonment and legislates retrieval.

The submerged lands of lakes and oceans, upon which munitions lie, are owned by the states and held in trust for the benefit of the public.[9] Underwater munitions do not therefore sit on federally owned facilities. Underwater munitions are off range under the Military Munitions Rule. Off range munitions must be retrieved.

These are the statutes promulgated by the United States Congress pursuant to its Constitutional law-making role. Presented next is a discussion how the DoD, on behalf of the Executive at Federal Facilities, manages these off-site obligations.

U.S. Munitions Policy

The story of U.S. abandonment of munitions repeats itself all over the country;

- accumulations of munitions off Vieques,
- barrels of munitions dumped by the Army Corps into Lake Superior,
- munitions forming reefs off Hawaii,
- munitions rolling up the shallow shore in Lake Erie, and
- lead and artillery munitions in Lake Michigan surrounding public drinking water intakes, just to name a few.

The problem is that allowing the waste originator to run the cleanup where its decisions affect its own budget leads to a conflict of interest that always plays out in

the same way: DoD spends $1 million in highly detailed assessments that take decades, to delay spending $300 million to retrieve munitions as mandated by law. A rough estimate puts total cost to retrieve munitions in the Great Lakes at between $10 billion and $12 billion.

The DoD employs various tactics of denial and delay in an effort to wear down active stakeholders, including elected officials, eventually outlasting their initial burst of activism.

The DoD begins by denying there is an issue in the first place and forces the stakeholder to prove there are underwater munitions. The DoD therefore fails, initially, to be proactive at off-range underwater sites for which its own information repositories contain the only historic record of its activities. DoD waits and reacts if local citizens notice the issue. This is a dangerous proposition for stakeholders.

Puerto Rico

Where stakeholders suspect the issue, DoD denies there is a problem. In Vieques, Puerto Rico, DoD misled the President, its commander, President Clinton, through Admiral Fallon's presentation at the President's bi-partisan commission on Vieques in fall of 1999, where Admiral Fallon stated "there aren't any munitions underwater on Vieques, and if there were, we would have done something about it." The attorney general of Puerto Rico then had his expert James Barton film the AG diving next to an underwater 2000lb bomb, just to get DoD to admit the munitions exist.

A presenter for the U.S. Government at the 2012 Fourth International Dialog on Underwater Munitions held in Vieques PR raised the issue that the Endangered Species Act might prohibit any retrieval of munitions around Vieques as potentially disturbing protected coral. During the question and answer session that followed, the presenter could not articulate why the presenter's agency had not raised the issue with DoD, or the DoD itself as lead agency, while the practice bombs were falling on the protected coral.

Minnesota

In Duluth MN, the Army Corps dumped 1,400 barrels of munitions into Lake Superior in the 1960's but has spent decades advancing stories about the barrels only containing hand grenade casings whose design we were trying to hide from enemies. In five decades that activists have been fighting for the barrels to be removed, only some have come out of the water from the shallowest sites, but not one from the deeper water where the most dangerous barrels, that potentially contain radioactive materials, would be located.[10] DoD is not even looking and is in fact planning to extrapolate results from the contents of the shallow barrels to avoid looking for the deeper barrels. The law requires retrieval without regard to the contents of one subset of barrels so the analysis of the contents and paralysis it causes is unnecessary under the law.

Hawaii

In Hawaii, the Navy dumped significant numbers of munitions from its Barber Point Naval Air Station. DOD obstructs the public knowing the scope of the problem by withholding from NOAA the true location of dense concentrations of bombs, rockets, projectiles, and bulk ammunition.[11] DoD sits by, allowing NOAA to study a far less dense site, the focus of a survey costing tens of millions of dollars. Congress demanded these studies in its 2007 Defense Authorization Act.[12] It thus appears DoD is doing something, but its actions are only meant to delay, and eventually

discard the munitions by perpetrating a fraud upon NOAA and Congress. More is presented on this in Part I.

Ohio

Sometimes the stakeholders already know the scope of the issue and demand retrieval. The DoD accommodates this by conducting slow moving and underfunded studies that take decades to complete. Congresswoman Marcy Kaptur of Ohio has been after the DoD for decades to address the issue of munitions rolling up the shallow lakebed in Lake Erie near the Erie Army Depot. These munitions have ruined property values and prevented local residents from using their lakefront property for business and recreational activities. The Army Corps reluctantly conducted a wide area assessment to plot out the hundreds of thousands of live munitions littering the lakebed, as seen in the attached slide, but has no plan to retrieve those munitions. Instead, the long-term plan is to send divers out every year to pick up only the closest munitions that roll up the shore. DoD lied to state elected officials and state regulators by asserting there is no technology for getting all the munitions. The DoD is fighting with everything it has to avoid contracting for existing technology that could “mow the grass" for underwater munitions and clean up the entire site. It would be costly, this Erie Army Depot site alone would run $330 million to retrieve all the munitions and dispose of them with zero emissions.[13]

The appearance of action through assessments is used to satisfy those who believe the DoD operates according to law as a lead agency, but those who come to realize the fraud of endless studies with unfounded limitations built in to mask abandonment, usually find other pursuits after decades of delay. The studies become DoD's method to avoid spending money on its retrieval obligations.

The picture you see in the first attached slide shows the location and density of 300,000 munitions in Lake Erie, fired from the Erie Army Depot, Ohio.[14] Some of these munitions during World War I and II were likely test fires of chemical munitions as required from each lot produced from the nearby war efforts. The dud ratio for munitions fired into water is between 10% and 50%. Additionally, lethal chemical munitions deemed in excess or defective were decommissioned by DoD by either burial on land or dumping underwater, there being no other forms of decommissioning at the time. Because there is no way to tell which of the 300,000 munitions found are "lethal chemical munitions" without retrieving each one and testing it, because there are no records kept of fire locations or dump sites, the CDC's focus exclusively on this single type of underwater munition would be artificial and unworkable based upon the practice at the time. Any solution to the limited issue still requires retrieval of all unexploded underwater ordnance in order to address just "lethal chemical munitions.

Additionally any sole focus on "lethal chemical munitions" discounts the lethality of the tons of RDX, TNT, Tetryl, PETN, mercury, lead and other toxic munitions constituents which in quantities of 100's of thousands and greater, accumulates to significant endangerment and impairment of fresh surface water resources in the Great Lakes from which millions of residents use as a source of fresh drinking water. Firing positions were generally located at forts and bases in populated areas along the lakes. The lethality of these chemicals in munitions would require assessing both the quantity of the chemicals and the pathways that could affect human health and the environment such as through drinking water, dermal contact and the food chain.

Illinois

Finally, we briefly discuss the citizen suit for enforcing the law against the Executive. The citizen suit allows anyone to sue any other person, including the President, for any violation of the Clean Water Act and RCRA. It is a clear waiver of sovereign immunity purporting to allow suit for enforcement against the Executive. When the Coast Guard proposed conducting live fire exercises and provided faulty environmental studies to support discarding its lead into the Great Lakes, an environmental group, Blue Eco Legal Council, filed suit against the President for these discharges; and also the FBI firearms training facility in North Chicago, IL where it discharges lead munitions into Lake Michigan.

In reality, the federal courts are hostile to citizen suits against the Executive and abuse the concept of standing to create clever twists of facts and procedure to shuffle citizens out of court without a hearing on the merits of their case. In Blue Eco's case the U.S Department of Justice obstructed justice and perjured itself to win and allow the FBI to continue discarding its munitions from its range in North Chicago, IL. It argued that FBI discharges of lead were from North Chicago (about 35 miles north of Chicago) a discrete area of the lake. Blue Eco group members were mostly from Highland Park, 13 miles to the south of the range, a different discrete area of Lake Michigan the DOJ argued. Blue Eco countered that the lake rotates to the south, thereby carrying the lead towards the Highland Park, IL drinking water intake in the lake. The Seventh Circuit Court of Appeals refused to accept as general knowledge that the lake rotates to the south and dismissed the suit for lack of standing. Despite finding no standing the Court of Appeals stated "**Here, not only has the firing range** [Operated by U.S. Navy and FBI] **admitted to discharging lead into the lake, it has admitted to doing so without a permit over the course of decades.**") *Pollack v. U.S. Dept. of Justice,* 577 F.3d 736, 745 (7th Cir., 2009)(Cudahy Concurring).

The obstruction was this: the government had during discovery withheld the citations section of an environmental assessment despite being ordered by the federal judge to turn over the complete report, that referenced a 1977 report by the Illinois Geological Survey. That study once obtained after litigation explained the southern flowing, sediment carrying, littoral current in the area between North Chicago and Highland Park.

At oral argument at the 7th Circuit, a federal appellate judge asked the government attorney if she was aware of the lake rotation to which she replied: "There again your honor, the record doesn't tell us anything about that whirlpool effect and I'm not familiar with it." So the DOJ knew about lake rotation, redacted its discovery to cover up its knowledge, argued there is no lake rotation, and then lied about its knowledge to federal judges. That is how far the Executive will go to advance its policy of abandonment of underwater munitions.

The Executive is therefore violating the very laws it is charged with faithfully executing under the Constitution. And in the case of the Coast Guard and FBI's ongoing discharges, it also violates the Great Lakes Water Quality Agreement with Canada.[15]

We should ask ourselves, why is the DoD the lead agency in charge of underwater munitions cleanups? Why not the CDC or U.S. EPA? When Congress created these environmental laws, it delegated enforcement authority to the Executive generally. But by virtue of Executive Order 12580, administrations since President Reagan have delegated enforcement authority to the agencies owning federal facilities, and

to U.S. EPA for most everything else, and perhaps also the CDC for offsite discharges of munitions in the nation's waters.

There is technology available to retrieve underwater munitions

In the attached slide is presented an artist concept of robotic technology already developed for demonstration, and found by DoD to be feasible (although unselected) in an official assessment of feasible alternatives to retrieve munitions at a DoD cleanup site.

DoD has however, engaged in a decades long effort to ignore this technology for the safe mass removal of discarded munitions that pose an imminent and substantial endangerment to our drinking and coastal waters. It reluctantly admits to accumulations of underwater munitions only when presented proof of their existence. Only then does it grudgingly conduct wide area assessments, extolled at conferences as proof of it is taking some action. But the DoD has no plans to employ technology to retrieve all of its munitions. Instead it lies to stakeholders saying there is no technology and falsely asserting the need to put EOD divers in harms way. Panel members have often heard DoD representatives make this false assertion of no technology available and need for diver removal of underwater unexploded ordnance.

It will be expensive.

$10 billion to $12 billion is estimated just to clear the U.S. side of the Great Lakes of discarded munitions. But abandonment comes with its own costs; the public good lost through damage to our natural resources. Damages include drinking water contamination, beaches closed, lost economic development for marinas and

businesses, and other environmental harms. But this $10 billion is part of the cost of running the Department of Defense. Just as OSHA laws require workplace safety in its buildings, and minimum wage laws increase its costs, so too do environmental laws govern DoD operations. The DoD seems willing to comply with some laws but not these environmental laws requiring retrieval.

Recommendation is to let the DoD off the hook. Relieve it of its financial liability and relieve it of its duty to act as lead agency. The lost public good from its obstruction is greater than the DoD's financial liability. It is more important that these munitions get out of the water than it is to make sure the waste originator pays.

It is important to remember that the DoD is part of the permanent Executive Branch of government and this policy may not even be known by the elected part of the Executive branch. DoD likely never briefs new Presidents as to its munitions abandonment policy despite known environmental obligations. DoD may therefore be thwarting civilian control over military operations and endangering human health and the environment by keeping the issue within its own operations and away from the true Executive. We therefore propose that CDC raise the issue with the President that Executive policy is illegal abandonment of munitions on state owned property.

There are outside experts that can retrieve DoD's munitions. The only impediment to retrieval is the DoD itself. CDC should seeks direct Congressional funding for the full cost of retrieval of abandoned munitions so that the necessary funds are not appropriated out of DoD's budget to compete with DoD's other priorities. Both decision-making authority and budget liability should be taken away from DoD.

Rescind Executive Order 12580 and allow CDC or U.S. EPA to administer federal environmental law underwater, on state owned land. By having U.S. EPA request cleanup funds directly from Congress, DoD would have no more reason to oppose development and implementation of underwater retrieval technology. DoD can even be paid out of the budget for its participation when necessary. Only then will DoD willingly go along with cleanup of the nations waters from its past operations for the benefit of the public good.

ENDNOTES

[1] Steven B. Pollack is a licensed attorney in the State of Illinois, USA. He is director of Blue Eco Legal Council, an environmental group dedicated to enforcement of environmental laws at federal facilities around the Great Lakes. Law office of Steven B. Pollack, 49 Sherwood Terrace, Suite 49-X, Lake Bluff, IL 60044 847-436-9566 steve@ecoesq.com

Blue Eco has brought citizen enforcement suits in federal court against the FBI, U.S. Navy, Coast Guard, Army, and Department of Defense for issues related to munitions in the environment and the adequacy of remedies chosen at closing federal facilities.

[2] The Clean Water Act ("CWA") requires a National Pollution Discharge Elimination System ("NPDES") permit for the 1) *discharge of any pollutant*, including toxic pollutants, 2) *from a point source* 3) *into the navigable waters* of the United States. 33 U.S.C. § 1342(a)(1) (emphasis added); *Froebel v. Meyer*, 217 F.3d 928, 937 (7th Cir. 2000); 33 U.S.C. § 1311(a) ("Except as in compliance with [the § 1342 NPDES permit program], the discharge of any pollutant by any person shall be unlawful.")

[3] "Discharge of a pollutant" means "any addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12). "Pollutant" means "solid waste . . . munitions . . . discharged into water." Id. at 1362(6). Munitions discharged into the waters of the United States are therefore pollutants under the plain text of Clean Water Act. *see Long Island Soundkeeper Fund v. New York Athletic Club,* 1996 WL 131863, 15 (S.D.N.Y. 1996):

> Given the statute's broad mandate, case law interpreting the meaning of 'pollutants' within the CWA, and the arguments of the EPA and [The New York State Department of Environmental Conservation], shot and target debris generated by operation of Defendant's trap shooting range constitute pollutants within the meaning of the CWA.

[4] *Pollack v. U.S. Dept. of Justice,* 577 F.3d 736, 745 (7th Cir., 2009)(Cudahy Concurring)("Here, not only has the firing range [Operated by U.S. Navy and FBI] admitted to discharging lead into the lake, it has admitted to doing so without a permit over the course of decades.")

[5] The Resource Conservation and Recovery Act (RCRA) grants authority to all district courts to order all relief necessary to remedy "any solid or hazardous waste which may present an imminent and substantial endangerment to health or the environment." 42 U.S.C. § 6972(a)(1)(B). "The district court shall have jurisdiction . . . to restrain any person who has contributed or who is contributing to the past or present handling, storage, treatment, transportation, or disposal of any solid or hazardous waste referred to in paragraph (1)(B), to order such person to take such other action as may be necessary, or both." 42 U.S.C. § 6972(a).

[6] RCRA authorizes two types of citizen suits, based on either regulatory or statutory violations:

> [*42 U.S.C. § 6972(a)(1)(A)*] enables private citizens to enforce the EPA's hazardous waste regulations and – according to 40 C.F.R. § 261.1(b)(1) – invokes the narrow *regulatory* definition of solid waste. The second type of citizen suit, under section 7002(a)(1)(B), *42 U.S.C. § 6972(a)(1)(B)*, authorizes citizens to sue to abate an 'imminent and substantial endangerment to health or the environment.' . . . Consequently, the broader *statutory* definition of solid waste applies to citizen suits brought to abate imminent hazard[s] to health or the environment.

Connecticut Coastal Fishermen's Association v. Remington Arms Co., Inc., 989 F.2d 1305, 1311 (2nd Cir. 1993)(emphasis added). "RCRA regulations apply the broader statutory definition of solid waste to imminent hazard suits[,]" *Id.* at 1316, which "lie against any 'past or present' RCRA offender 'who has contributed or who is contributing' to 'past or present' solid waste handling practices that 'may present an imminent and substantial endangerment to health or the environment.'" *Id.* (quoting 42 U.S.C. § 6972(a)(1)(B)).

RCRA's *statutory* definition of solid waste "contains the concept of 'discarded material,' 42 U.S.C. § 6903(27), but it does not contain the terms 'abandoned' or 'disposed of' as required by the regulatory definition." *Id.*; 40 CFR 261.2(a)(2), (b)(1).

The U.S. EPA filed an amicus brief in *Connecticut Coastal*, advising the court that the Agency had interpreted "the statutory definition of solid waste as encompassing the lead shot and clay targets" at issue in that case because they were "discarded." 989 F.2d at 1316. EPA stated that the materials were discarded because they had been "left to accumulate long after they ha[d] served their intended purpose." *Id.* The Second Circuit "agree[d] that the lead shot and clay targets in Long Island Sound ha[d] accumulated long enough to be considered solid waste." *Id.* In *Connecticut Coastal*, lead shot and clay targets had accumulated in navigable waters during "nearly 70 years of use" as a gun club impact zone. *Id.* at 1308.

[7] 62 Fed.Reg. 6622, 6626-30. EPA's *Military Munitions Rule* has clarified RCRA's applicability to shooting operations of military entities, which may, without limitation, include the Department of Defense, Coast Guard, Navy, and Marines. *See* 62 Fed.Reg. 6622, 6626-30. Section G of the Rule states that military munitions "are not a solid waste for regulatory purposes: (1) when a munition is used for its intended purpose. . . Under RCRA, the use of products for their intended purpose, even when the use of the product results in deposit on the land, does not necessarily constitute 'discard', is not waste management, and is not subject to regulation." Id. at 6628. However, "*munitions that land off range that are not promptly rendered safe (if necessary) and/or retrieved, are statutory solid wastes* under RCRA section 1004(27), potentially subject to RCRA corrective action. . . [A] *failure to render safe and retrieve a munition that lands off range would be evidence of an intent to discard the munition*." *Id.* at 6632 (emphasis added); see also 40 C.F.R. § 266.202(d). *See also Otay Land Company v. U.E. Limited, L.P.,* 440 F.Supp.2d 1152, 1180 (S.D.Cal. 2006) (noting that "fired military munitions that land off-range become a statutory solid waste at a certain point, potentially subject to RCRA remedial authorities.")

[7] Under RCRA § 6972, "it is not necessary that Plaintiffs show that the contamination is harming, or will harm, human health or the environment. A finding that an activity may present an endangerment does not require a showing of actual harm. The term 'endangerment' has been interpreted by courts to mean a threatened or potential harm." Maine People's Alliance v. Holtrachem Mfg. Co., 211 F.Supp.2d 237, 246 (D.Me. 2002). An endangerment is considered ongoing as long as the waste has not been cleaned up and the environmental damage has not been "sufficiently remedied." Prisco v. New York, 902 F.Supp. 374, 395 (S.D.N.Y. 1995).

U.S. EPA's "Guidance on the Use of Section 7003 of RCRA", at 10-22 (October 1997) (citations omitted) agrees that the phrase "may present an imminent and substantial endangerment" has been broadly construed by EPA and by the courts:

> An 'endangerment' is an actual, threatened, or potential harm to health or the environment. . . neither certainty nor proof of actual harm is required, only a risk of harm. Moreover, neither a release nor threatened release, as those terms are used in CERCLA, is required. No proof of off-site migration is required if there is proof that the wastes, in place, may present an imminent and substantial endangerment.
>
> An endangerment is 'imminent' if the present conditions indicate that there may be a future risk to health or the environment even though the harm may not be realized for years. It is not necessary for the endangerment to be immediate or tantamount to an emergency.
>
> An endangerment is 'substantial' if there is reasonable cause for concern that health or the environment may be seriously harmed. It is not necessary that the risk be quantified.

Courts must defer to reasonable Agency interpretations of governing statutes. *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.,* 467 U.S. 837, 843 (1984).

[8] Under RCRA § 6972, "it is not necessary that Plaintiffs show that the contamination is harming, or will harm, human health or the environment. A finding that an activity may present an endangerment does not require a showing of actual harm. The term 'endangerment' has been interpreted by courts to mean a threatened or potential harm." Maine People's Alliance v. Holtrachem Mfg. Co., 211 F.Supp.2d 237, 246 (D.Me. 2002). An endangerment is considered ongoing as long as the waste has not been cleaned up and the environmental damage has not been "sufficiently remedied." Prisco v. New York, 902 F.Supp. 374, 395 (S.D.N.Y. 1995).

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[9] Submerged Lands Act 43 U.S.C. §§ 1301- 1311

> **(a) Confirmation and establishment of title and ownership of lands and resources; management, administration, leasing, development, and use**
>
> It is determined and declared to be in the public interest that

> (1) title to and ownership of the lands beneath navigable waters within the boundaries of the respective States, and the natural resources within such lands and waters, and
>
> (2) the right and power to manage, administer, lease, develop, and use the said lands and natural resources all in accordance with applicable State law be, and they are, subject to the provisions hereof, recognized, confirmed, established, and vested in and assigned to the respective States or the persons who were on June 5, 1950, entitled thereto under the law of the respective States in which the land is located, and the respective grantees, lessees, or successors in interest thereof;

43 U.S.C. § 1311(a)(1),(2).

The states' ownership of submerged lands is not absolute but is held in trust for the people of the states under the public trust doctrine. See *State of Illinois v. Illinois Cent. R. Co.*, 146 U.S. 387, 452-3 (1892)(State allowed to take back submerged lands previously sold to railroads because public trust prevented state from fully alienating the rights of trust beneficiaries)

[10] Blue Eco Legal Council's expert on munitions asserts that the procedure of the day was to take the most dangerous materials to be dumped further away from the coast. His research indicates the location of the deeper barrels are in 600ft to 700ft deep water. His research further indicates that the Twin Cities Ammunition Plant was a repository of Manhattan Project waste and conducted fuel rod research. These more toxic materials would be the type to be dumped in the deeper water. It is not appropriate, therefore, to make any assumptions about all the barrels from the toxicology of the closer in barrels. These are all pollutants pursuant to the Clean Water Act and solid waste under RCRA. They cannot therefore be abandoned and must be retrieved.

[11] James Barton personally conducted dives at the true Ordnance Reef and asserts that its location is approximately three miles south, in 135 feet of water, in the direction of Barber's Point, from where NOAA actually conducted its wide area assessment off Pokai Bay. The true location of Ordnance Reef contains dense concentrations of bombs, rockets, projectiles, and bulk ammunition. Barber's Point Naval Air Station is not even mentioned in NOAA's final assessment as the facility from which the munitions were discarded.

[12] National Defense Authorization Act for Fiscal Year 2007, Sec. 313, 314

[13] Blowing munitions in place on the beach exposes the environment and residents to toxic munitions constituents. Environmentally friendly demilitarization options exist including water jet cutting, blast containment chambers, and zero emission incinerators.

[14] The slides to this presentation are produced after these endnotes.

[15] Great Lakes Water Quality Agreement of 1978

1. **Article II – Purpose**

Consistent with the provisions of this Agreement, it is the policy of the Parties that:

a. The discharge of toxic substances in toxic amounts be prohibited and the discharge of any or all persistent toxic substances be virtually eliminated;

Slides Follow on Next Page:

Clean Water Act

Prohibits discharge of pollutants into U.S. waters without a permit. Defines munitions as pollutants

RCRA

Requires proper handling of all waste, including retrieval of discarded waste

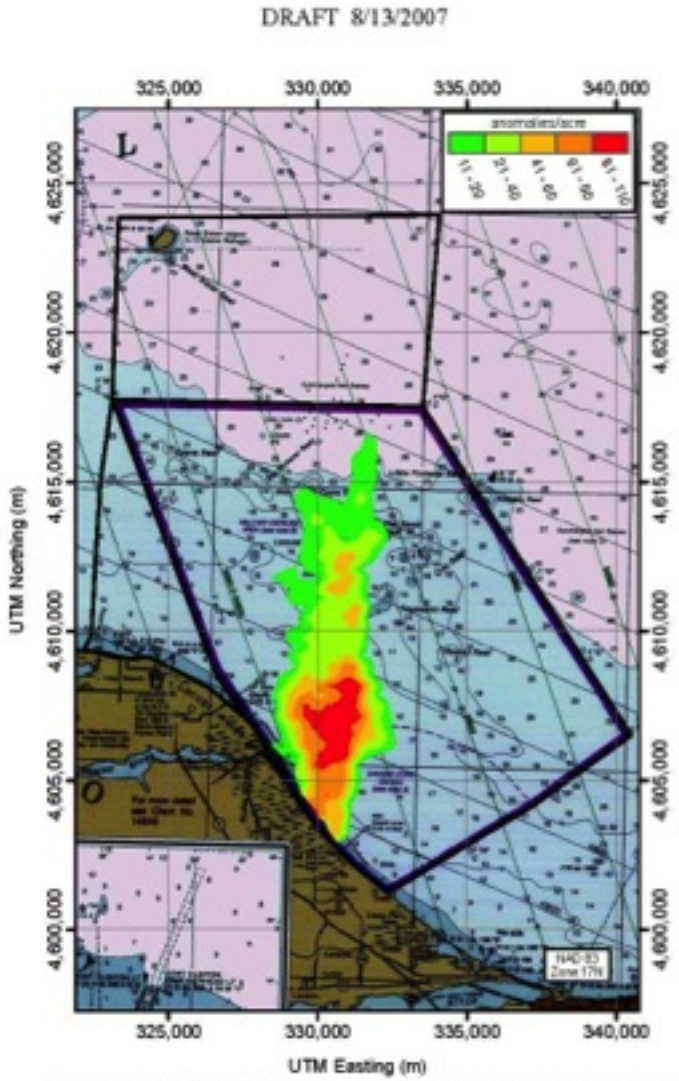


Figure 15. Estimate of the extent and density of munitions contamination in Lake Erie. The highlighted area contains approximately 300,000 targets and encompasses about 8,000 acres.

Military Munitions Rule

"*munitions that land off range that are not promptly rendered safe (if necessary) and/or retrieved, are statutory solid wastes*...potentially subject to RCRA corrective action... [A] *failure to render safe and retrieve a munition that lands off range would be evidence of an intent to discard the munition.*"

62 Fed.Reg. 6622, 6626-30

Underwater Munitions are Off Range

(a) Confirmation and establishment of title and ownership of lands and resources; management, administration, leasing, development, and use

It is determined and declared to be in the public interest that

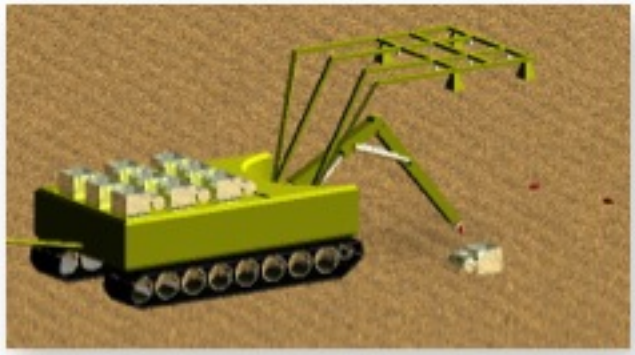
(1) title to and ownership of the lands beneath navigable waters within the boundaries of the respective States, and the natural resources within such lands and waters, and

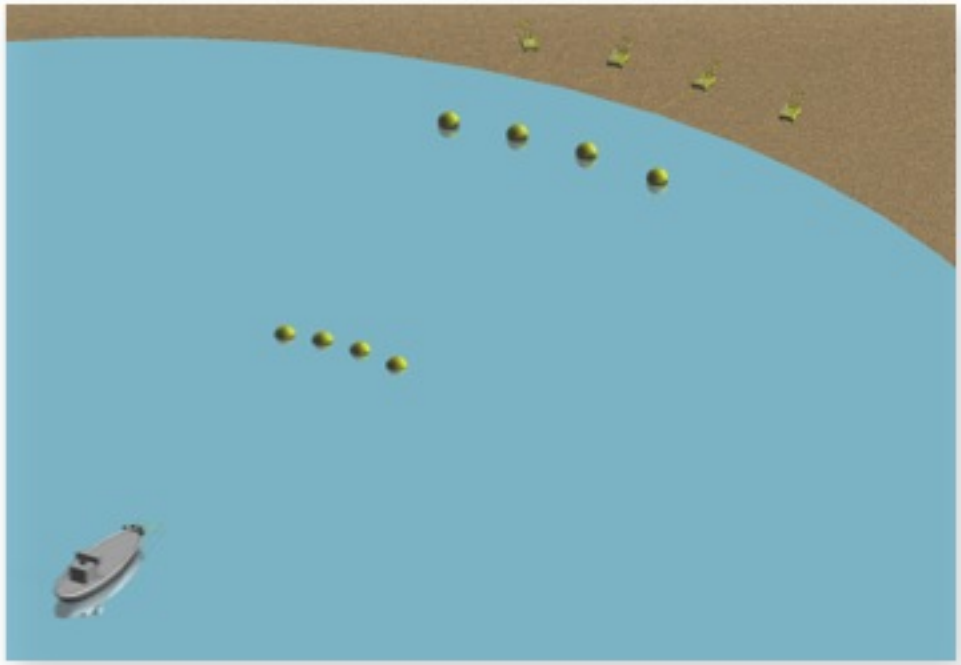
(2) the right and power to manage... said lands and natural resources all in accordance with applicable State law... are... assigned to the respective States...

Submerged Lands Act 43 U.S.C. §§ 1301- 1311

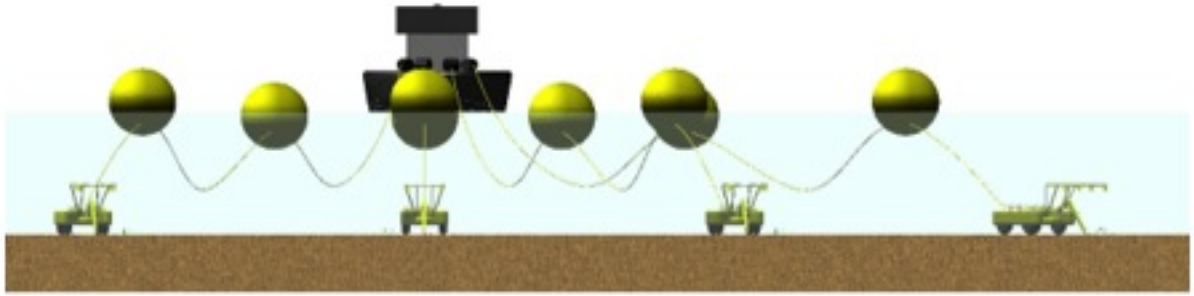
National Policy Negotiated Locally

Underwater Ordnance Recovery - Harvester





No personnel in blast radius



Abandonment Savings Versus Lost Public Good

DoD externalizes cost of operation onto environment

Damage to Natural Resources

- Two million tonnes UXO in Great Lakes
- Damage to drinking water
- Closed beaches
- Lost economic development
- Damage to coral reefs in oceans

Save $10 Billion in One-Time Retrieval Costs

Suggestions for U.S. Munitions Policy

- Recognize that the lost public good exceeds DoD's liability
- Bring to President's attention his policy of abandonment, and that Executive Order 12580 enables this unlawful act
  (US EPA and NOAA as Lead Agency at all UWUXO sites)
- Relieve Department of Defense of financial liability
  (Lead Agency seeks funds from Congress for UWUXO retrieval)
- <u>Less assessing, START retrieving</u>
  (Zero emission demilitarization, not blow-in-place)