

## **Dredging Best Practices**

### THE HISTORY OF CORPS OF ENGINEERS DREDGING THE NATION'S WATERWAYS FOR NAVIGATION

The capacity of the nation's natural coastal and inland waterways to accommodate domestic and international shipping has been significantly expanded by the U.S. government through the construction and maintenance of various navigation aids, harbors, shipping channels and related facilities. Many of these water bodies in their natural state could only accommodate vessels with shallow drafts (2-6 feet). To meet the increasing demands of the shipping industry, the US Congress authorized the U. S. Army Corps of Engineers (USACE) to dredge 136 federal harbors and 745 miles of navigation channels to a depth of 30 feet or more to facilitate domestic and international maritime commerce.

Nationally, including coastal waters, the majority of USACE annual dredging program is accomplished by contracting the private dredging industry. The remaining work is performed by the USACE federal dredge fleet (Government-owned and operated dredges). Estimates of the average cubic yardage dredged by USACE District using Government and contractor equipment, categorized by class of work (maintenance and new work), during Fiscal Years (FY) 2008-2012 are presented in Figure 1-1 on the following page.

The average annual quantity of lake, river and harbor sediment removed for navigation purposes during this period is approximately 212 million cubic yards (152 million cubic meters).<sup>1</sup> Since dredge spoil is legally categorized by state and federal statutory definitions as a pollutant<sup>2</sup> and dredge spoil (consisting mostly of sand) weighs approximately 1.5 ton/cubic yard it could mean 318 million tons of pollution is being produced from navigation system dredging each year if spoils or spoil transport return water is discharged into public waters.<sup>3</sup>

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<sup>1</sup> Source of data and referenced figures from USACE Dredging and Dredged Material Management Manual No. 1110-2-5025 - 31 July 2015 accessed by internet at:  
[https://www.publications.usace.army.mil/portals/76/publications/engineermanuals/em\\_1110-2-5025.pdf](https://www.publications.usace.army.mil/portals/76/publications/engineermanuals/em_1110-2-5025.pdf)

<sup>2</sup> [See footnotes explaining why dredge spoil is a pollutant under Federal and State laws cited later in this report]

<sup>3</sup> Annual spoil volumes have increased significantly since these data were collected in 2008-2012 (for reasons discussed later in this document) so the quantity of potential pollution from spoil disposal as calculated here and shown in the figures has also increased accordingly.

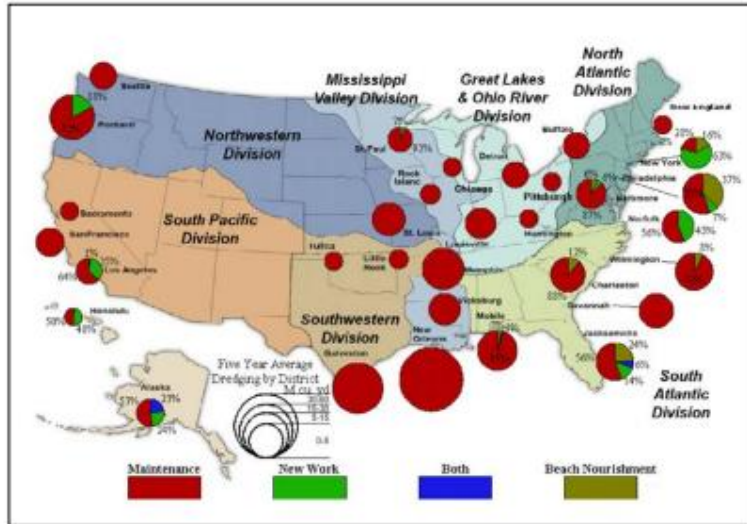


Figure 1-1. USACE Dredging Program—Average Annual Dredging FY 2008-2012, Including both USACE and Contractor Dredging, Broken Down by Location and Class of Work

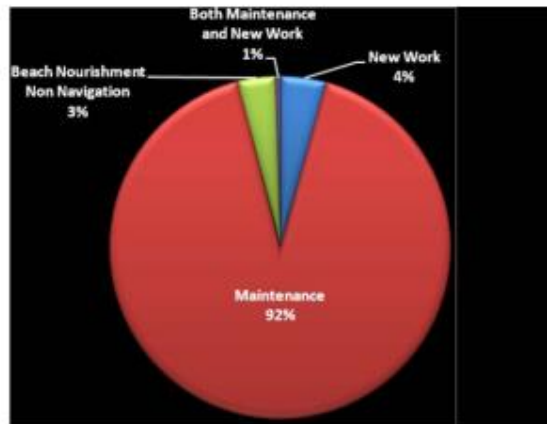


Figure 1-2. USACE Dredging Program—Percentage of Average Annual Yardage of Dredged Material FY 2008-2012, Including both USACE and Contractor Dredging, Broken Down by Class of Work

Of course, dredged spoil is not just sand but is nearly always a mixture of sand, silt, clay with widely varying amount of organic material typically found in harbor, lake and river sediments. Since many dredged harbors and river channels have historically been extensively developed in close association with pollution prone industries and cities, dredge spoil is commonly contaminated by industrial and municipal wastes.

It should be kept in mind however, that even if sediments are not contaminated by these pollution sources, so-called “clean” dredge spoil can seriously pollute receiving waters and harm fish and other aquatic life in a variety of significant ways.<sup>4</sup> At the ecosystem level improper treatment or disposal of dredge spoil (and its transporting water in the case of hydraulic dredging) exerts considerable stress on aquatic ecosystems in five of the seven major ways discussed later in this discussion<sup>5</sup> (see page 5).

Little or no long-term assessment of the overall ecological impacts from the establishment of this navigation system on natural lakes and waterways since the system was first constructed in the early part of the last century. It was simply assumed that these water bodies existed primarily for transportation and would easily accommodate all forms and volumes of transportation without negative consequences. Therefore, the alterations of these water bodies by dams, harbor deepening, channel dredging and associated infrastructure has been widely welcomed and supported economically and socially. In this mode of thinking, commerce and the transport of people and goods became (and to some degree remains) the ultimate “best use” (along with waste disposal) of these water bodies. All other direct or indirect benefits (also known as ecosystem services) such as drinking water supply, fisheries, wildlife, recreation and aesthetics have taken distant second places. Historians of the Mississippi River have observed that:

*“It’s a challenge to tease out all the impacts of dredging and sand placement. The upper Mississippi has already been chopped into 29 pools, each ending in a lock and dam to keep water high enough for shipping navigation. Since Congress required the 9-foot shipping channel in 1930, that navigation mission remains first and foremost for the Corps on the river. “Nearly a century of engineering has fundamentally transformed the characteristics of the river system”, said John Anfinson, a historian who wrote a book about the upper Mississippi.”<sup>6</sup>*

As the environmental sciences have advanced to better understand the myriad services terrestrial and aquatic ecosystems provide beyond transportation, not only for humans but for all life forms, more and more questions have arisen about the wisdom of these significant alterations to the nation’s water bodies. Society is only now becoming aware that human existence depends on the sustained flow of ecological services natural water bodies provide. It is becoming more and more evident that as these and other large

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<sup>4</sup> Kerr, S. J. (1995). Silt, turbidity and suspended sediments in the aquatic environment: an annotated bibliography and literature review (pp. 1–277). Ontario Ministry of Natural Resources Technical Report TR-008, Southern Region Science and Technology Transfer Unit, Ontario, Canada.

<sup>5</sup> A critical analysis of the direct effects of dredging on fish, [Amelia S. Wenger](https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12218) et al, (2017) accessible on line at <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12218>

<sup>6</sup> John Anfinson, a historian who wrote a book about the upper Mississippi as quoted in Star Tribune article – **Dredging Kept the Mississippi River Open This Year But Creates Its Own Problems** – Chloe Johnson – Minneapolis Tribune, December 13, 2023 accessed by internet at: <https://www.startribune.com/mississippi-river-dredging-sand-island-army-corps-engineers-navigation-barge/600326490/>

ecosystems, aquatic and terrestrial alike, all over the globe have been degraded more and more people and property are being and will be harmed.

Scientists have categorized the primary degrading drivers (stresses) on terrestrial and aquatic ecosystems into the following seven groups.

1. Land Cover and Surface Water Use Conversion.
2. Over-extraction-Over Use (mining, logging, fishing, ground water, shipping etc.).
3. Intensifying Agriculture.
4. Pollution of all forms.
5. Non-native Species Introductions.
6. Habitat Fragmentation; and
7. Climate change

All of these degrading stressors are either directly or indirectly associated with dredging impacts.

Society is only now beginning to realize that surface transportation (commercial, industrial and recreational navigation) will need to take a more balance place lower in the hierarchy of ecosystem services water bodies provide in order to protect the ecosystem services necessary for human well-being.

#### New Environmental Laws in the 1970's Required Changes to Dredging

Prior to passage of the Clean Water Act and state statutes such as Minnesota's pollution control laws sediment dredged from navigation facilities was often simply "side cast" or discharged as a hydraulic slurry into adjacent waters of lakes, rivers, wetlands and flood plains. In port communities on rivers and around the Great Lakes, this "fill" created new land spaces that were often quickly developed by waterfront industries seeking to expand capacity for using the highly efficient water-based shipping system.

In the 1970s and 80's following passage of the Clean Water Act and state's adoption of water quality standards, a series of lawsuits<sup>7</sup> followed by a clarifying amendment to the Clean Water Act<sup>8</sup> made it clear that the dredged spoil was by law a pollutant and that

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<sup>7</sup> In Minnesota the Minnesota Pollution Control Agency and the Minnesota Conservation Federation each filed lawsuits against the Corps' dredging practices in the 1970's focusing primarily on the Duluth/Superior Harbor. The Wisconsin Department of Natural Resources also filed similar suits under the Clean Water Act and state water quality rules but focused primarily on the Upper Mississippi River Navigation Channel. Wisconsin policy has been more consistent than Minnesota supporting use of confined disposal facilities for dredged spoil while Minnesota appears to have capitulated on its policy for both the harbor and the river.

<sup>8</sup> Clean Water Act - Section 404 (t)- "Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation."

disposal of this pollutant, whether by the Army Corps or by private industry would need to comply with state permitting requirements and meet both state and federal water quality standards.

More specifically, the Federal Clean Water Act defines “pollutants” to include dredged spoil along with other wastes such as solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes and biological materials.<sup>9</sup> And in Minnesota, the Pollution Control Agency’s enabling legislation also defines dredged spoil as a pollutant.<sup>10</sup> In both the Federal and State Law a “pollutant” is defined as any sewage, industrial waste, or *other wastes* discharged into a disposal system or to waters of the United States or waters of the state. And construction of treatment facilities for discharging any such pollutants to waters of the state requires a permit and compliance with applicable water quality standards.<sup>11</sup>

It is important to mention here that the promulgation of state water quality standards is a rigorous and transparent rule-making process. And these state standards are based on federal “water quality criteria” established through extensive testing of pollutant impacts on life forms and humans by the U.S. Environmental Protection Agency (USEPA).

#### The Industry Balks and Begins to Undermine These Laws

These well-established water quality standards and the EPA criteria they are based on have been quietly but effectively challenged, supplanted or cast in doubt by the Corps and special interests who can benefit from more relaxed standards. Alternative testing methods and criteria development pathways have been ongoing ever since the Clean Water Act imposed stricter requirements on dredge spoil disposal. These “alternative” methods are specifically designed to put dredged sediments in a special class different from all other pollutants in ways that evade these laws. Placing dredge spoil in this new class has worked to significantly reduce environmental and human health testing and protection requirements thus significantly reducing dredge spoil disposal costs. Dredging, even hydraulic dredging where the pollution discharges from the end of a pipe, was later claimed to be a “non-point source” of pollution. As a non-point source dredge spoil disposal is subjected only to voluntary controls such as “best management practices” that required no permits, effluent limits or monitoring.

These and other CWA “avoidance” strategies will be described in more detail later in this document.

The other problem originally facing both the US Army Corps of Engineers (USACE) who is responsible for the maintenance of navigation channels, and the port authorities that manage the harbors was how to dispose of the dredge spoils from channels and harbors

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<sup>9</sup> 33 U.S.C. Section 1362 sub. 6 - Definitions

<sup>10</sup> Mn Statues Chapter 115.01- Definitions.

<sup>11</sup> Mn Statutes Chapter 115.04 & Mn. Statutes Chapter 115.07

while protecting water quality and important aquatic habitats now protected by these new laws. Compliance with the Clean Water Act was not immediate and disputes over required environmental review under both NEPA and MEPA went on for several years.

After several years of business as usual, in a strongly worded 1985 letter to the U.S. Army Corps of Engineers the Minnesota Pollution Control Agency confronted the Corps with their non-compliance with NEPA's and MEPA's environmental review requirements, as well as with applicable permitting and water quality standard requirements for its dredging activities in the Duluth/Superior Harbor<sup>12</sup>. The letter clarified that it was the intent of congress that open water disposal of dredge spoil was to be discontinued and that the CWA amendment had clarified the state's jurisdiction over Corps dredged spoil disposal practices. The letter also indicated that MPCA permits would not likely be issued unless a more thorough environmental review was completed. Up until this point, only a broad (draft) Federal Environmental Assessment of the navigation system on Lake Superior had been completed and it was not detailed in assessing the specific impacts on the St. Louis River estuary or Lake Superior.<sup>13</sup>

Subsequent to this stern MPCA letter and intense negotiations the Corps began submitting required permit applications and constructing confined disposal facilities (CDFs) for dredge spoil designed to meet water quality standards, not only in the Duluth/Superior Harbor but on the Upper Mississippi Navigation Channel as well.

Unless they are periodically maintained by removing sediment from these CDFs, which are owned by states or port authorities and operated by the USACE, have a finite capacity. In many Great Lakes ports<sup>14</sup> and all along the Upper Mississippi, sufficient sediments have not been removed from CDFs to other more permanent disposal or acceptable fill utilization sites and these facilities are reaching their capacity. Cleaning out or replacing CDFs is expensive and complicated, requiring significant financial contributions from non-

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<sup>12</sup> See attached 1985 MPCA Letter to the U.S. Army Corps of Engineers

<sup>13</sup> It should be noted that to date, no comprehensive Federal or State environmental review has been performed addressing the overall impacts of the harbor's original creation or the impacts of its on-going maintenance. An EIS was completed for channel dredging and spoil disposal on the Mississippi River in (insert date of EIS and link).

<sup>14</sup> "To complete dredging in 2022, the Buffalo District received over \$20.9 million in federal funds to dredge seven of Ohio's commercial harbors (Toledo, Sandusky, Lorain, Cleveland, Fairport, and Conneaut, and Ashtabula), and dredging is scheduled for all but one harbor. Conneaut Harbor does not currently have a placement site available which meets the State of Ohio's 2020 law limiting open lake placement, and the Corps of Engineers will not dredge there this year." - U.S. Army Corps of Engineers Ohio Dredging Newsletter - Updated August, 2022 - accessed by internet at: <https://www.lre.usace.army.mil/Portals/69/docs/Navigation/FY22/Great%20Lakes%20Strategic%20Communication%20and%20Initiative%20Information/Ohio-Dredging-Newsletter-AUG2022.pdf?ver=PipWMPoJ1459KXLh2Qxwnw%3D%3D>

federal partners and sometimes requires the use of port or other shore property highly valued for other uses or for development.

But shipping interests and the port communities that have benefitted economically have combined to form a formidable lobby in favor of the status quo or even greater expansion of these facilities thus generating even more dredge spoil. For example, these interest groups are advocating for massive replacement of aging dams and enlargement of the locks to accommodate greater volumes and sizes of barges on the upper Mississippi River.<sup>15</sup> And proposals for harbor expansions and deepening are occurring regularly all over the nation as ships have gotten bigger and are carrying heavier payloads.

Meanwhile, climate change induced extremes of weather have caused wide fluctuations in lake and river levels have increased sediment loading from contributing watersheds. These developments have greatly increased adverse impacts from the existing navigation system from ever-increasing amounts of sediment choking river channels and filling harbors at river mouths. This greatly increasing the demands for dredging when harbors or channels get too shallow, especially during low water periods such as is now happening on the Mississippi River.<sup>16</sup>

Addressing increasing volumes of sediment from contributing watersheds was urged by the MPCA in their 1985 letter to the Corps as a more cost-effective way to reduce dredging volumes and costs. The co-benefits of preventing soil losses and stream erosion from watersheds and resultant dredging cost and environmental harm reductions remain as unrealized opportunities to this day.

So, the problems have grown for the Corps and cooperating local cities and port authorities as the volume of dredge spoil has increased, the places to put the spoils have filled up and new sites are much harder to find. Other, even older federal law<sup>17</sup> has placed the burden of cleaning out existing dredge spoil disposal facilities or finding new ones on local “nonfederal partners”; the states and cities where dredging occurs, and disposal facilities exist. Extensive searches for new disposal sites and brainstorming for alternative uses

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<sup>15</sup> " 'At some point, we're going to need some major rehabilitation of these structures,' Kristin Moe, navigation business line manager for the Army Corps' St. Paul District, told the Journal Sentinel earlier this year. Groups that represent the shipping industry contend that instead of making repairs to existing locks, the Army Corps should be constructing new ones that have a 1,200-foot chamber to more efficiently accommodate larger groups of barges than the current chambers, which are 600 feet long." -Madeline Heim- Milwaukee Journal Sentinel – December 7, 2023 accessed by internet at: <https://www.jsonline.com/story/news/2023/12/07/why-are-there-locks-and-dams-on-the-mississippi-river/71746116007/>

<sup>16</sup> **Dredging Kept the Mississippi River Open This Year But Creates Its Own Problems** – Chloe Johnson – Minneapolis Tribune, December 13, 2023 accessed by internet at: <https://www.startribune.com/mississippi-river-dredging-sand-island-army-corps-engineers-navigation-barge/600326490/>

<sup>17</sup> Principally the Rivers and Harbors Act and Corp of Engineers Policy

(some possibly beneficial) for dredge spoil are going on here in Minnesota and all across the nation. More distant disposal or beneficial use options for dredge spoil are almost always more expensive and thus pressures are mounting for cheaper options in or near the point of origin. Finding legitimate ways to dump spoil back in the water looked economically attractive to the shipping industry and to local port communities once again.

### How Sediment Resuspended by Dredging Became a Purposely “Muddied” Issue?

Impacts of turbidity and suspended solids observed in the St. Louis River Estuary, Lake Superior and on the Mississippi River where dredging activities have been the suspected source have often been minimized because dredged sediments have been represented as “clean” or the turbidity effects described as being “temporary” or minor when compared to natural sources such as storm runoff events.

Sediments enter waterways through a wide variety of transport mechanisms, including surface water transport, bank and bed sloughing, and atmospheric deposition. The effects of sediments on receiving water ecosystems are complex and multi-dimensional and are further compounded by the fact that a certain amount of sediment flux is natural and actually vital for aquatic ecosystems.<sup>18</sup>

The whole issue of natural vs. dredging sources of sediment was recently “muddied” even more by an article by National Public Radio where dredge spoil was characterized as a valuable “hot” commodity.<sup>19</sup> Dredge spoil can be useful in some circumstances however use of dredge spoil to supplant natural sources of sediment, offered as a “beneficial” augmentation for nature or as a cure for a “deficiency of nature” can be an apple and orange comparison.

Reduction, reuse and recycling of any waste material is generally good public policy. But as has been revealed about solid waste recycling in general, all is not as it first appears. Most plastics, for example labeled as “recyclable” but only certain kinds actually are. This is the case for dredge spoil as well. The nuances of these comparisons have been manipulated by special interests such that the public and policymakers have become confused.

### The Myth of “Clean Sediment”

Sediments contaminated with various pollutants or excess nutrients, even if undisturbed, present extraordinary stresses on biological systems. So, in addition to the impacts from resuspended sediment, plants and animals in a natural environment are exposed to mixtures of chemical and physical stressors which can combine to cause adverse effects that may not be observed when a stressor such as suspended sediment is considered

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<sup>18</sup> Natural sediment sources can be distinguished from man-made sources by careful monitoring.

<sup>19</sup> [In A Hotter Climate, Dirt and Mud Are Hot Commodities: NPR.](#)



individually. Contaminated sediments will be addressed later in this discussion; so-called “clean sediments” will be addressed here.

The excerpt below is from a very authoritative source, the USEPA and the Corps itself<sup>20</sup>. It is recommended reading for anyone who has doubts about the polluting potential of “clean” dredge spoil. The following is an excerpt:

*“Excessive sediments in aquatic systems contribute to increased turbidity leading to altered light regimes which can directly impact primary productivity, species distribution, behavior, feeding, reproduction, and survival of aquatic biota.*

*“Humans are also affected by the lack of water clarity - turbid water is generally not as aesthetically pleasing as clean for swimming or other recreational activities, or for drinking water. Other direct effects of increased suspended solids include physical abrasion and clogging of filtration and respiratory organs. **The concentrations of suspended sediment required to cause these sorts of effects are generally very high but may occur in certain situations such as near dredges** (Wilber and Clarke, 2001). Eventually these effects reach even the top predators, such as eagles and humans... The effects of suspended or bedded sediment (SABS) in streams were reviewed by Waters (1995). SABS have two major avenues of action in streams and rivers: 1) direct effects on biota and 2) direct effects on physical habitat, which results in indirect effects on biota. Examples of direct effects on biota include suppression of photosynthesis by shading primary producers; increased drifting of, and consequent predation on, benthic invertebrates; and shifts to turbidity-tolerant fish communities. Indirect effects on biota will occur as the biotic assemblages that rely upon aquatic habitat for reproduction, feeding, and cover are adversely affected by habitat loss or degradation of this habitat. A noteworthy example of indirect effects of suspended and bedded sediments in streams and rivers is the loss of spawning habitat for salmonid fishes by an increase in embeddedness, caused by the entrapment of fine material in the gravel. Increased sedimentation can limit the amount of oxygen in the spawning beds which can reduce hatching success or trap the fry in the sediment after hatching.” (Bolding added for emphasis).*

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<sup>20</sup> Primary source for this section is: **The Biological Effects of Suspended and Bedded Sediment (SABS) in Aquatic Systems: A Review Internal Report** - August 20, 2003 by the United States Environmental Protection Agency Office of Research and Development National Health and Environmental Effects Laboratory Atlantic Ecology Division, Narragansett, Rhode Island and the United States Environmental Protection Agency Office of Research and Development National Health and Environmental Effects Laboratory Midcontinent Ecology Division, Duluth, Minnesota. Document accessible at: <https://archive.epa.gov/epa/sites/production/files/2015-10/documents/sediment-appendix1.pdf>

A more detailed analysis of dredge spoil disposal impacts on fish can be found in the 2017 article entitled “A Critical Analysis of Direct Impacts of Dredging Impacts on Fish” in Fish and Fisheries<sup>21</sup> and the reference Kerr in footnote seven on page 5.

Because “clean” sediments may also contain significant amounts of organic matter disposal of dredge spoil can exert biological oxygen demand (BOD) reducing oxygen available to aquatic life.

Once in the system as bottom sediment, resuspension and redeposition by dredging activity can “recycle” sediments, reintroducing them into the water column where they endure at far higher levels and for longer periods than natural sources and when settling to the bottom again, they can smother bottom dwelling organisms. As the above reference makes clear, turbidity from dredging “clean sediments” has significant potential for harm.

#### Dredging Sediments with Low Levels of Contaminants

In 1990, the International Joint Commission challenged the governments of Canada and the United States to develop a program to virtually eliminate a group of “The Nine” persistent, toxic and bioaccumulative pollutants. The governments responded to this challenge by creating the “Binational Program to Restore and Protect the Lake Superior Basin.” The goal of the Zero Discharge Demonstration Program (ZDDP) is to achieve zero release of certain designated persistent bioaccumulative toxic substances in the Lake Superior basin. Mercury is one of the nine bioaccumulative toxic pollutants for which the zero-discharge goal was set. Yet mercury is still being discharged into Lake Superior by dredging.

Mercury is just one of many heavy metals along with a long list of organic chemicals that remain as low-level contaminants in dredged sediments even after remediation efforts are complete.

Gary E. Glass, PHD, retired Senior Research Chemist with the U.S. EPA’s Water Quality Laboratory in Duluth recently performed standard calculations for lake loadings of mercury from Duluth/Superior Harbor dredging. Mercury is just one harbor sediment contaminant known to be present in harbor sediments as legacy pollutants from industrial discharges in the watershed. Using the Corps’ own pre-dredge sediment sampling and analysis for mercury concentrations Dr. Glass found that in one summer’s dredging operation that discharged 48,000 cubic yards of spoils on the Duluth city beach up to 10.6 pounds of mercury had been added to the total lake loading of mercury. Dr. Glass calculated that

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<sup>21</sup> A Critical Analysis of Direct Impacts of Dredging Impacts on Fish – Fish and Fisheries – March 27, 2017 accessed on line at: <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12218>. Keep in mind that this study only addresses fish impacts. Dredging impacts on all aquatic flora and fauna are also fairly well studied but studies of ecosystem wide impacts are largely lacking.

10.6 lbs. of mercury were sufficient to contaminate 10.6 million lbs. of Lake Superior fish up to the US FDA action level of 1 ppm.

Pollutant loading to receiving waters is a specific requirement of most states and particularly Minnesota's antidegradation assessment under CWA Section 401 certification. Yet the MPCA issues 401 certification for dredging without requiring the Corps to perform the calculations on all dredge spoil contaminants like Dr. Glass produced for mercury.

Dr. Glass revealed these calculations in reports to the Duluth/Superior Harbor Technical Advisory Committee (HTAC), to the Park Point Community Club and to the City of Duluth<sup>22</sup> to alert them to this previously undisclosed impact of dredge spoil disposal in Lake Superior.

The Corps and MPCA publicly refuted Dr. Glass' analysis explaining that dredge spoil hydraulically discharged on beaches is in fact on-land disposal and therefore not subject to water quality standards at all. Instead, they claimed that the pre-dredge sediment analysis showed that the spoil met the human health criteria the agencies substituted for lake loading and water quality criteria. And, since dredging was a non-point source rather than a point source where such water quality standards might be a factor, the agencies have held that only "best management practices" need to be applied.

Then, since beach nourishment was "on-land" disposal human health exposure criteria previously developed for land application of soils containing low levels of hazardous waste was the appropriate measure of safety. As proof that human safety limits were met, the MPCA requested the Corps collect samples of spoils applied to Minnesota Point and have them analyzed, but just for one contaminant: dioxins. But beach samples were not collected and analyzed for dioxin until the following spring after the disposal.

The results, predictably came back well within human health exposure guidelines partly because the spoils had been weathered by natural forces, thoroughly washed by several months of Lake Superior wave action. Thus, the beach nourishment was pronounced safe and in compliance with all state and federal requirements. Except for the next problem; garbage!

#### Solid waste contamination in dredged sediments caused public beach closure.

Some sediment contaminants, unlike mercury or dioxin, are very visible to the public and pollution by these contaminants is as predictable as they are preventable.

Spoils deposited on both ends of Minnesota point in 2019 and 2020 as "beach nourishment" offered to restore eroded shores were found to also contain legacy municipal

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<sup>22</sup> See Gary Glass May 27, 2021, letter to Duluth Mayor Emily Larson attached.

solid wastes. Old metal beverage cans, glass and plastic bottles in the sediments were shredded into fragments and shards by dredging operations.<sup>23</sup>

Can and bottle fragments and shards continued emerging on the beach for many months even after being collected daily by citizens. Lake waves continued to wash away the finer dredge spoil sediments that buried the fragments revealing enough refuse that it presented a serious and on-going health hazard to recreational beach users. The Corps posted signs warning the public of the hazards while they devised methods to clean up the beach. Delays in cleanup and persistence of the public hazard ultimately caused closure of the beach for several weeks.

As with other chemical or biological contaminants pollution of the lake and its shores refuse pollution in dredge spoil is preventable with proper treatment. Pre-dredge sediment sampling revealed the presence of this refuse as documented by the Corps own reports. But the Corps failed to take available actions to prevent the refuse entrained in hydraulic dredge slurry from reaching the beach.

Municipal refuse can be expected to show up again in harbor dredge spoil and must not be allowed to impact public recreation or pollute Lake Superior.

#### How Regulatory Capture Began

Ever since the Clean Water Act placed restrictions on dredging and spoil disposal shipping interests have sought off ramps from the new rules. But court challenges and a clarification of the Clean Water Act described earlier proved too much to overcome. Sometime during the 1990s and early 2000s, Minnesota and other states began to quietly (and arguably arbitrarily) relax their requirements for confined disposal of dredged spoil and open water discharges resumed. The political pressures for these relaxations were explained above and the reasons were primarily economic. It has not been clearly established who started this relaxation or just how it was being done so willingly by staff in regulatory agencies. Many have come to attribute the change to “regulatory capture”, the phenomenon where the interests of the regulated polluter become more important to agencies than the interests of the public.

What is clear is that the process for allowing exceptions to water quality standards through a formal variance procedure that could include a public hearing as required by law and fully outlined in the MPCA’s 1985 letter have not followed to get to this point. All the changes and relaxations were behind closed doors.

That is until citizens saw what was happening.

#### Informed Citizens Get Involved

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<sup>23</sup> Discharging such refuse into the nation’s waters violates provisions of the Rivers and Harbors Act of 1899, the oldest environmental law in the nation.

In 2019, a group of citizens (including several Izaak Walton League Minnesota Division members) discovered instances of open water disposal of dredge spoil were resuming in the Duluth/Superior Harbor and in Lake Superior off Minnesota Point. Later it was discovered that this practice had resumed in the Upper Mississippi as well. League members joined a coalition of citizen groups and individuals who challenged the MPCA to enforce the laws cited in the original 1985 letter to the Corps. The purpose of the challenge was to once again stop the dredge spoil disposal practices known to pollute public waters.

An April 8, 2021, coalition letter<sup>24</sup> to the MPCA cited the very same laws and rules referenced in the 1985 MPCA letter to the Corps. The concern was that some of these laws and rules might have changed, unbeknownst to the citizens. The letter included this paragraph:

*“Members of our ad hoc Coalition presented this letter to your staff during a February 18th, 2021, virtual meeting and requested a review of its contents. We sought your agency’s guidance in affirming the application of law and rule applied to dredging as outlined in this letter. If your staff agreed that these requirements were still valid, we requested an explanation as to why the MPCA was no longer holding the Corps responsible for meeting these procedural and substantive requirements. On the contrary, if your staff believed any of the provisions of this letter were no longer operative or applicable, we requested information on the process by which these deviations from past policy were made. To date, we have not received a reply. Our requested meeting is intended to address these open questions.”*

The MPCA refused to meet with the coalition to address the issues raised in the letter. And, more importantly, the agency did not refute that the laws and rules cited in the original 1985 MPCA letter and referenced again in the coalition’s letter were still applicable and in force. Instead, the MPCA sent a “stonewalling” reply letter<sup>25</sup> cutting off future communication stating in part:

*“MPCA staff have participated in a number of meetings and phone conversations over the last few months on this topic with community members and other interested stakeholders. We have also responded to email inquiries and fulfilled data practices act requests. We do not believe another meeting to revisit the same topics is necessary or constructive at this time. Thank you for your continued advocacy and commitment to protecting Lake Superior.”*

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<sup>24</sup> See attached April 18, 2021, Coalition letter to MPCA Commissioner Laura Bishop on Minnesota Conservation Federation letterhead. Signatories on the letter included: The Minnesota Conservation Federation, The Save Lake Superior Association; Clean Water Action, The National Wildlife Federation, Great Lakes Office, The North Shore Surfrider Foundation, a former Minnesota Pollution Control Agency Executive Director and a former Minnesota Pollution Control Agency Regional Director.

<sup>25</sup> See attached MPCA April 27, 2021, letter to Brad Gausman, Executive Director of Minnesota Conservation Federation and spokesperson for the coalition signed by Katrina Kessler, MPCA Assistant Commissioner for Water Policy and Agriculture on behalf of Commissioner Bishop

At that point, it became clear to the League and other coalition members that serious regulatory backsliding had been going on for some time. And that the agencies were now firmly entrenched in their positions.

It has taken several years of research to unravel the process by which Corps’ dredging and spoil disposal was deregulated, and serious pollution was sanctified.

Subtle Ways to Unravel or Avoid Environmental Laws

To follow the devolution of the regulatory framework governing dredging and dredge spoil disposal requires a transitional glossary of terms that introduces a lexicon of obfuscation and a reframing of the narrative of dredging in environmentally glowing terms. This new lexicon serves to “greenwash” dredging and actually “virtue signals” dredge spoil disposal. This shift in terminology signaled a change in regulatory perspective/attitude even though the laws and rules for dredge spoil had not changed at all.

Below is a table of original (historical) dredging terms and their regulatory significance paired with the more recent terminology with consequent meaning changes clearly intended to frame dredging and dredge spoil disposal in a more attractive light.

<b>ORIGINAL TERMS AND CHARACTER</b>	<b>NEW TERMS or CHARACTERIZATIONS</b>
<b>Dredge Spoil</b> – a pollutant by federal and state laws	<b>Dredged Material</b> – A harmless, even desirable commodity with virtually unlimited beneficial uses
<b>Dredge Spoil and Transport Water Discharge/Disposal</b> – a point source requiring permits and meeting WQ standards	<b>Dredge Material Placement</b> – a non-point source requiring no permits and only voluntary Best Management Practices (BMPs) to reduce impacts
<b>Open Water Disposal (Prohibited)</b> - type A - on or near lake shore or stream bank – may or may not be eroded	<b>Beach Nourishment</b> – implies sediments were needed to satisfy an appetite
<b>Open Water Disposal (Prohibited)</b> - type B - in shallow off-shore water that results in emergent mounds.	<b>Island Creation/Restoration</b> – correcting nature’s oversight putting an island where it should have been or was eroded away
<b>Open Water Disposal (Prohibited)</b> – type C - in deeper water making it shallower	<b>Aquatic Habitat Creation/Restoration</b>
<b>Open water Disposal – Prohibited</b> year-round due to aquatic life, fish or wildlife impacts	Environmental Dredging Window – allows open water disposal during select seasons if certain life-stage period (window) of a selected species is avoided.
<b>On-Land Disposal</b> near water of origin	Terrestrial Habitat Creation/Restoration
<b>Open Water Disposal- any discharge to public waters</b>	Open water means deep water far offshore but does not include “near-shore” or on-shore near water sites.
<b>Dredge Spoil (Wastewater) Treatment Facility</b> - Ponds required and designed to meet WQ standards by discharge water	<b>Confined Disposal Facility (CDF)</b> – Intended only for highly contaminated sediments – no

	permits required but WQ standards may apply to discharge.
<b>Mixing Zones</b> - area of receiving water within which WQ standards may be exceeded – very limited and not allowed across river mouths or near drinking water intakes	<b>Dredging Project Area</b> – flexible area of receiving water impacted by dredging activity expanded to edge of turbidity plume if necessary to achieve acceptable visual levels (not necessarily WQ stds).
<b>Water Quality Standards and Criteria</b> – Regulatory standards that apply to all discharges to surface waters of the U.S. or the state including dredge spoil based on EPA guidelines.	<b>Human Health (exposure) Standards or Criteria</b> - Alternative criteria now applied to beach nourishment situation where the public could be exposed to dredge spoil contaminants based on hazardous waste disposal and human exposure standards.

DRAFT

## A Paper Trail of Abdication is Discovered

In 2021, further traces of the regulatory devolution were discovered in a 2014 document unceremoniously posted on a MPCA website. Here the agency published a guidance manual entitled “*Managing Dredge Materials in Minnesota*”. In this guidance the MPCA, (without notice to the public or opportunity to comment) makes a significant shift in policy dividing the state’s roles between the agency and the Minnesota Department of Natural Resources (MDNR) based on whether the dredge spoil was to be placed on land or in the water. The MPCA’s role was changed to only regulating “on-land disposal” while the MDNR would regulate “in-water” disposal simply as “fill” below the ordinary high-water mark. It should be noted that the Minnesota Legislature did not authorize this shift in roles nor did the state agencies involved notify the public of the policy shift through rulemaking or any other means. This website posting appears to be the only way the public could have learned of the shift. The Corps, Port Authorities and dredging contractors most certainly were made aware, and this guidance was clearly directed at them. The guidance states in part:

***“The MPCA's permitting role in the dredge program is for authorizing the on-land disposal or reuse of dredge materials, not the dredge activity itself. In-water disposal of dredged material is an activity that is regulated by the Minnesota Department of Natural Resources (MDNR) and/or the United States Army Corps of Engineers’ (USACE), depending on the destined site of placement of the dredged material.”<sup>26</sup>***

With this “guidance” statement the MPCA blatantly abdicated the agency’s statutory jurisdiction over in-water disposal of dredge spoil as a pollutant requiring state permits and compliance with established water quality standards. It reassigns this responsibility to the DNR that has no such authority. DNR does regulate placement of fill below the ordinary highwater mark in the bed of public waters, but it does not have, nor does it have authority to establish water quality standards similar to the MPCA’s for this activity.

According to the guidance, MPCA only retains permitting authority for certain types and volumes of “on-land” disposal or reuse of dredge material (spoil). On-land disposal in Confined Disposal Facilities (CDFs) is thus subjected to MPCA permitting and effluent standards while the discharge untreated dredge spoil directly into public waters is not. Where sediments have exceeded certain pre-dredge sediment criteria for contaminants,

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<sup>26</sup> Managing Dredge Spoil in Minnesota – MPCA, April 2014, p. 1 accessible at: <https://www.pca.state.mn.us/business-with-us/dredged-materials-management> and: <https://www.pca.state.mn.us/sites/default/files/wq-gen2-01.pdf>



including heavy metals, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins, and furans, it has generally been placed in a confined disposal facility (CDFs). State Disposal System permits are required, and effluent water quality standards are applied to these CDFs and to certain other totally inland disposal sites that discharge transport water back into natural water bodies. Superfund cleanups that involve discharging dredged spoil as “caps” over contaminated sediments have been exempted from water quality standards and permits by Superfund laws and rules.

But other in-water or near-water disposal was left entirely to the MDNR to permit and regulate. The MPCA dredging guidance goes on to explain its purpose and objectives as:

***“To facilitate the proper management of dredged material by providing assistance to project managers and governmental entities.***

***The objectives of this guidance manual are to:***

- Provide a consistent and understandable regulatory framework for managing dredged materials***
- Promote consistency in the characterization and risk assessment of dredged material***
- Identify best management practices (BMPs) at dredged material sites to protect water quality at project sites & to***  
***Identify environmentally appropriate placement levels and management options for dredged material management in land-based systems.***

Regulatory Capture was well under way. But more was revealed.

#### Antidegradation Form Become the Ticket for Degradation

The MPCA did retain Clean Water Act Section 401 Certification authority delegated from the USEPA for fill placed in waters of the United States and waters of the state. That authority had not been transferred to the MDNR. This certification is designed for the express purpose of assuring the public that any “fill” activity subject to CWA Section 404 complies with state water quality standards and meets a series of “antidegradation” requirements in Minnesota’s Antidegradation Rule<sup>27</sup> that are mandatory for any state having such Clean Water Act delegation authority.

Once again, these rigorous “antidegradation” rules, (that are exacting but can be met) have been effectively disabled simply by substituting a very simplified application form. The application form simplifies, glosses over or omits the detailed information needed for

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<sup>27</sup> Mn Rules Chapter 7050.0265 - ANTIDegradation STANDARDS WHEN CHANGES IN EXISTING WATER QUALITY ARE REASONABLY QUANTIFIABLE, accessible on line at: <https://www.revisor.mn.gov/rules/7050.0265/>

independent review by the agency itself. The form allows the applicant (the Corps in these dredging cases) to simply declare the analysis was done, that no prohibited degradation would occur and that all other water quality standards would be met.

Therefore, as was described above, instead of applying water quality standards, antidegradation review and pollutant loading calculations to these activities, only non-point source type Best Management Practices (BMPs) are required.

And the calculations for loading of pollutants, especially toxic and bioaccumulative pollutants like mercury required by antidegradation rules were no longer required.

Thus, on-land disposal of dredge spoil is treated as a non-point source similar to urban stormwater, construction site runoff or certain agricultural runoff situations and is only subjected to loosely enforced, voluntary BMPs rather than obligatory effluent standards based in MPCA water quality and antidegradation rules.

Furthermore, and possibly more importantly the MPCA's substitution of an application form instead of applying detailed provisions the Antidegradation Rules has allowed the Corps to avoid assessing ecosystem service losses suffered through the initial construction and on-going maintenance of the Corps navigation system. The (law) rule requires this be done, but the MPCA has not enforced it.

The losses of aquatic ecosystem services due to the initial construction of the nation's navigation system have been enormous but never quantified holistically. And the on-going maintenance, primarily dredging, continues to exacerbate those historical impacts by not allowing these ecosystems to heal themselves. Estuaries are among the most biologically diverse and resilient ecosystems on the planet and their "services" besides that of navigation are vital to the existence of life as we know it. Cumulative losses of ecosystem services on the planetary level have alarmed scientists all around the world. Global level bodies like the United Nations Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES) have issued stark assessments<sup>28</sup> warning that vast quantities (areas) of both aquatic and terrestrial ecosystems still undeveloped must be preserved and up to 50% of the earth's original ecosystems. restored to maintain the necessary stability.

Estuaries, located at the mouths of rivers, were the obvious places for creation of navigation harbors for a number of obvious reasons. And river channels between trade centers and ocean front ports were obvious targets for channelization. It will be difficult, if not impossible for society to fully realize the lasting damage that has been inflicted on our life-sustaining ecosystems by over-developing and maintaining this navigation system.

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<sup>28</sup> <https://www.ipbes.net/global-assessment>

Antidegradation review, done properly, can begin to reveal the full ecosystem service level impacts of just the maintenance part of this navigation system. The impacts of the system's initial construction may be bigger than we dare examine.

#### Pre-dredge Sediment Quality Criteria Are Substituted for Effluent Standards

Preceding this shift of policy in Minnesota, the Corps, in collaboration with supporting states sought to change the approach to dredge spoil management away from the more restrictive effluent standards and pollutant loading reductions in state permits to a complex set of pre-dredging assessment of sediments. A totally different set of criteria were developed that were designed to supplant federal water quality criteria, the EPA established guidelines that support state ambient water quality standards and, in turn are used to set effluent discharge standards. For dredging, the criteria are applied to the sediments proposed to be dredged before the dredging activity rather than to the water column at the dredging site or the disposal site during dredging. Analysis of representative samples of to-be-dredged sediment are said to be predictive of impacts and focus on sediment contaminant levels rather than the impact of discharged sediments (dredge spoil) themselves a pollutant. Depending on contaminant concentrations sediment are classified as to their degree of contamination. Highly contaminated sediments are directed to confined disposal facilities while less contaminated sediment is deemed suitable for indiscriminate, unconfined disposal or available for various "beneficial" uses.

#### The Great Lakes Dredging Team – Minnesota's Abdication Goes National

For several decades, the Corps and the Great Lakes and Upper Mississippi state regulatory agencies and dredging contractors have collaborated extensively, apparently to assure consistency for pre-dredge sediment criteria, policies and procedures as the go-to-alternative to effluent standards for dredge spoil disposal through an organization called the Great Lakes Dredging Team (GLDT)<sup>29</sup>. The Team convenes annually and operates under the auspices of the Great Lakes Commission<sup>30</sup>.

The GRDT has been co-chaired and convened by staff from the U.S. Army Corps of Engineers and the Minnesota Pollution Control Agency. As stated above, the Team's members include representatives of the several Great Lakes State's regulatory agencies, the Corps, and several other federal agencies, local port authorities, port city officials and a number of private dredging contractors from member states.

The GRDT, on the Corps' website claims to: *"Employ an open, transparent process that respects views of individuals and groups interested in Corps activities"*. At the Team's

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<sup>29</sup> More information on the Great Lakes Dredging Team, their mission and reports from current and past meetings can be found at this Corps of Engineers' website: <https://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Dredging-Team/>

<sup>30</sup> See Great Lakes Commission Mission and Strategic Plan at: <https://www.glc.org/>

September 2022 meeting in Milwaukee Wisconsin<sup>31</sup>, team leaders were especially proud that the team had developed alternative dredge material disposal options that were saving port cities a lot of money. However, these team leaders went on to say that these options could not have been developed and implemented nearly as quickly if the Team and member states had involved the public in any way.

At this same meeting problematic water quality impacts such as turbidity (or suspended solids) and PFAS compounds were informally discussed and a brief report from a subcommittee formed to find solutions was given. Essentially, no effective solutions to turbidity of PFAS were offered except to say that enlarging the dredging “project area” was being tried in several situations to address turbidity issues. What this means is the Corps (and cooperating regulatory agencies) would agree that any state BMP approvals would stipulate that monitoring point (whether visual or metered) for excessive turbidity could be extended to some greater radius from the discharge point. Thus, more distant observation or monitoring would take place at locations where suspended dredged sediments would have had greater dilution and dispersion.

Dilution became, once again, the preferred solution to pollution by regulatory agencies!

#### Sometimes, Dilution of Pollution is Legally Allowed

Such allowances for dilution, called “mixing zones” in effluent receiving waters is actually sometimes permitted for treated effluent but is subject to mixing zone guidance from the U.S. Environmental Protection Agency<sup>32</sup>. EPA regulations give states, authorized tribes, and territories the flexibility to “waive” applicable WQC under certain circumstances. The two most common forms of such provisions are: (1) mixing zones; and (2) extreme flow conditions. Hence, mixing zones can be thought of as “spatial exemptions” and extreme flow conditions as “temporal exemptions” to water quality standards. Mixing zones exempt certain portions of a water body from meeting applicable designated uses and water quality criteria. Such exemptions are usually employed “downstream” of point source discharges.

Sometimes mixing zones are divided into subzones. In the innermost zone, which is the zone closest to the discharge pipe, exceedance of acute and chronic WQ Criteria may be allowed. In the outer zone, acute criteria must be met, but chronic criteria can be exceeded. The USEPA policy holds that mixing zones should never extend from bank to bank in a river. There should always be a “zone of passage” for fish migration in which all

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<sup>31</sup> Willis Mattison, IWLA Minnesota Division member attended the meeting as an uninvited guest and attests to what is stated here. He can be reached at email: [mattison@arvig.net](mailto:mattison@arvig.net)

<sup>32</sup> Guidance on EPA Mixing Zone can be accessed on line at: <https://www.epa.gov/sites/default/files/2014-12/documents/mt-mixing-zone.pdf>

WQ standards are met. Likewise, an entire lake or reservoir should not be encompassed by a mixing zone.

Often, mixing zones are not allowed to overlap with important areas, such as popular swimming beaches, shellfish beds, and critical habitat for commercially, recreationally, or ecologically important species.

However, since many dredging sites are at the mouths of rivers and near larger cities expanding mixing zones to extend across entire rivers or to include areas of municipal drinking water intakes as they do in Duluth Superior Harbor, should not be allowed. Dredging plumes have extended all across the St. Louis River estuary and all across the Mississippi. And the plume has been observed in the vicinity of the Duluth municipal water intake from Lake Superior. Thus, states like Minnesota have not complied with this EPA prohibition for mixing zones and apparently the EPA is willing to look the other way.

The MPCA has allowed a “mixing zone” in Lake Superior off Minnesota point to expand to nearly 4/5<sup>th</sup> of a mile in all directions from the hydraulic dredge discharge point. And the Great Lakes Dredging Team has proposed this zone be enlarged even further because citizens in Minnesota and other states have regularly complained of turbidity plumes extending for over a mile from the discharge points.

#### When is “Open-Water” actually Open Water?

The go-to disposal option for dredged spoil has historically been “open-water disposal” of all types and kinds. Congress, in drafting the Clean Water Act declared its intent that open water dumping of dredge spoil was to end. A work-around has emerged where the Corps and state agencies have parsed the term to apply only to sites in deeper water far offshore. Thus near-shore or onshore (near water) discharges are not “open water” and, as such, are permissible. As mentioned above, Corps and some state’s regulatory agencies agree that deep water or open lake disposal of sediment far from shore is subject to state environmental water quality permitting and approval but is generally prohibited in Ohio, Minnesota, and Wisconsin.

#### The Myth of Certain “Beneficial Uses” for Dredge Spoil May Lead to Misuses

Through the Great Lakes Water Quality Agreement amendments in 1978 the United States and Canada adopted a policy that the discharge of all persistent toxic substances be “virtually eliminated.” Timelines were established for municipal and industrial pollution abatement and control programs. The 1978 agreement also employed a broader ecosystem approach to basin management, recognizing that water, air, and land pollution were interlinked. In 1987 an annex was added to the GLWQA. It created Areas of Concern (AOCs) for the most polluted parts of the basin, with Remedial Action Plans (RAPs) to clean them up. In 2012, a protocol was added. The Great Lakes Water Quality Agreement was a

watershed moment for environmental protection and became an international model for regulating transboundary pollution. Yet, a year after the 50th anniversary of the first GLWQA, the Great Lakes are arguably more degraded today than they were in the 1960s. Fueled by climate change, many old problems – like toxic algae – are returning, while new problems are appearing: microplastics, agricultural runoff, and toxics such as PFAS.”<sup>33</sup>

Corps of Engineers dredging practices are strongly suspected to be contributing to many of these problems persisting or returning to the Great Lakes, the Mississippi and Minnesota Rivers.

The St. Louis River Area of Concern (SLRAOC), located on the western arm of Lake Superior and including the twin port cities of Duluth, Minnesota, and Superior, Wisconsin, was listed as one of 43 Great Lakes AOCs in 1987. Historical actions such as unregulated municipal and industrial waste disposal and unchecked land use practices, including dredging and filling of aquatic habitat and damaging logging and manufacturing practices, contributed to the complex set of issues facing the SLRAOC at the time it was listed. For the SLRAOC, remediation involves actions taken to address beneficial use impairments associated with sediments containing toxic or bio-accumulative contaminants. It includes actions taken to control, minimize, restore or eliminate potential or actual ecological and human health risks from exposure to contaminants.

Underwater sediments are the primary driver of beneficial use impairments (BUIs) in the St. Louis River Area of Concern because they are associated with contaminated sediments.<sup>34</sup> The goal of the AOC program is to improve these areas, so they are no more environmentally degraded than other comparable areas of the Great Lakes. When that improvement has been reached, the AOC can be removed from the list of AOCs, or “delisted.”

But the St. Louis River Remedial Action Plan for removing impairments (BUIs) includes an important disclaimer that reads in part:

*“DISCLAIMER: ... For BUI removal purposes, management actions are considered complete when **substantial completion of construction** is reached. Long-term monitoring, maintenance, and continuing obligations may be needed at some sites, but will not **restrict** BUI removal.” (bolding emphasis added).*

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<sup>33</sup> “History of the Great Lakes Water Quality Agreement-Some Progress, Some Problems- For Love of Water Newsletter article: December 11, 2023 at: [https://forloveofwater.org/history-glwqa-us-canada/?utm\\_source=FLOW+Newsletter&utm](https://forloveofwater.org/history-glwqa-us-canada/?utm_source=FLOW+Newsletter&utm)

<sup>34</sup> Draft 2023 Remedial Action Plan (RAP) for the St. Louis River Area of Concern (SLRAOC). <https://dnr.wisconsin.gov/sites/default/files/topic/GreatLakes/Draft2023StLouisRiverAOCRemedialActionPlanAccessibleReady.pdf>

This easily overlooked but outrageous statement on page ii of the plan removes all data-based accountability for claims that the remedial action was ever or could ever be successful. By this disclaimer-type loophole all responsible agencies for cleaning up the St. Louis River's Areas of Concern are admitting they may not be succeeding at all but are not responsible for failures to show results. They only hold themselves responsible for the effort involved! They leave the long-term monitoring for actual remediation outcome and any maintenance required to sustain that outcome to others who remain unnamed and who may never do so.

So, without any evidence of successful remediation (save for the effort) any and all "areas of concern" for this site on Lake Superior, involved agencies have and will continue to deceive the public into believing the river and lake are once again clean and safe for all uses once the BUIs are "removed". It is unclear at this time whether this low bar for removing other Areas of Concern on the other Great Lakes has been accepted and applied in this manner.

#### The Myth of Beach Nourishment

Countless tons of dredge spoil, both "clean" and contaminated, have been used to replace Lake Superior shores and beaches eroded by wave action exacerbated by high lake levels and increasingly frequent and stronger storms. Without regard for the improper grain size of harbor sediment or contamination harmful to the lake, the Corps has offered dredge spoil to "nourish" the shores and beaches. Each year, much of this "nourishment" sand and silt is washed away into the lake, carrying with it not only the excess sediment and turbidity caused by dredge spoil but the trace contaminants such as mercury found unacceptable for discharge to Lake Superior. Solving beach erosion with dredge spoil is, in many cases, a myth. It is not sustainable nor is it protective of Lake Superior's water quality and aquatic life as prescribed by the Great Lakes Water Quality Agreement. In his letter to the Duluth Mayor referenced earlier, Dr. Glass goes into exhaustive detail to explain why such "nourishment" is a source of pollution but is also futile for addressing erosion and should be discontinued.

A Corps Section 111 study now underway will hopefully find the reasonable alternative sources of more suitable lake sediment (coarse sand and cobble) suggested by Dr. Glass and others a more sustainable and less polluting option for addressing beach erosion in the long term. (See details in Dr. Glass' letter attached)

#### The Myth of Environmental Dredging Windows

Early on in the regulatory capitulation for dredge spoil disposal some state fish and wildlife agencies along with citizen fishing advocates raised serious questions about potential adverse impacts of open water dredge spoil disposal on popular game fish in the Great Lakes and elsewhere. For several decades, State and Federal resource agencies have routinely requested that various aspects of dredging projects be restricted to avoid

seasonal time periods known to be sensitive for important fish species. Agencies began requesting these considerations soon after passage of the National Environmental Policy Act in 1969. To address this concern the Corps and the Great Lakes Dredging Team agreed to identify locations and conditions (usually seasonal timings for dredging discharges) that would ostensibly mitigate at least some of these impacts on economically important fish. So-called “environmental dredging windows”<sup>35</sup> have been developed for this purpose. These windows of opportunity are often narrowly based on a single selected target species and a particularly sensitive single life-stage of that species. For example, a lake trout “window” was established for dredging and is being used for Duluth Superior Harbor which limits dredging activity after November 1<sup>st</sup>, the beginning of a peak lake trout spawning period.

This ecologically narrow and selective method for choosing certain favorable windows of time to discharge dredge spoil is not based on sound science. It fails to acknowledge that a myriad of aquatic organisms have vastly different habitat needs and tolerance levels to dredge spoil impacts at different ages and times of the year. Turbidity alone, as discussed earlier, is a significant stressor for most species at all times of the year. While the “window” approach may mitigate to some degree, the impact of dredging on one life stage of one iconic species overlooks the fact that these organisms are interdependent and exist a part of a complex web system called an ecosystem. A window designed to protect one life-stage of one species may well devastate that species at other times of the year and many other species at all times of the year.

The notion of “environmental windows” should be challenged and discarded completely unless further science-based evidence is produced that can substantiate its validity.

#### Satisfaction of Citizen Complaints is Stymied by New Agency Interpretations of Old Law

MPCA and the Corps when applying voluntary BMPs for Duluth Superior Harbor dredging use only visual inspection rather than instrument monitoring watching for instances of “excessive turbidity” which when observed by the Corps only requires the them to re-examine and possibly beef up its BMP practices.<sup>36</sup> Citizen complaints of excessive turbidity off Minnesota Point during dredging activity were either dismissed as unfounded, mistaken or over-estimated. This, because the Corps was required to watch for and avoid it. Likewise, complaints of small algae blooms, substantial oil slicks and petroleum-like odors in the vicinity of harbor spoil discharge on the beach were also dismissed either as

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<sup>35</sup> For a detailed discussion of the origin of this concept and types of “windows” see Dredging Operations and Environmental Research (DOER) Technical Note DOER-E2 December 1998 - “Environmental Windows Associated with Dredging Operations” accessible on the internet at: <https://erdc-library.erdc.dren.mil/jspui/bitstream/11681/8735/1/TN-DOER-E2.pdf>

<sup>36</sup> [Note: To be Added: cite reference to MPCA CWA Section 401 Certification and responses to citizen complaints of large plumes of turbidity, oil slicks and petroleum type odors near “beach nourishment” sites on Minnesota Point.



mistaken for decaying organic matter or as normal (acceptable) impacts of other human activity. Even more frustrating is the fact that Minnesota agencies now block citizens access to results of any pollution complaints they may investigate.

Agency dismissal or obfuscations of citizen's pollution complaints (turbidity, oil slicks, odors, etc.) that were experienced by people living near or visiting Lake Superior beaches during "beach nourishment" with dredge spoil is yet another facet of the larger regulatory capture picture. The MPCA in particular, has received written complaints from citizens including photos and water samples as evidence. But the MPCA refuses to provide complainants with any results or findings of complaint investigations. When confronted, MPCA attorneys defend this practice by claiming obscure client confidentiality standards or Data Practices Act provisions that prohibit discussing with citizens any details of a case that could result in litigation should a violation actually be discovered while investigating such complaints.

So, citizens have not been able to hold regulatory agencies accountable for resolving obvious pollution problems associated with dredging because they encounter a "trumped up" code of silence and never know if their concerns were validated and if so, were ever resolved.

Contaminants of emerging concern such as PFAS are acknowledged as present in dredged sediments in discussions between the Corps and state agencies but have yet to be addressed in any public fashion.

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**THEREFORE, BE IT RESOLVED, that the Izaak Walton League of America, assembled in Convention in Cambridge, Maryland, July 16th, 2024, calls for the regulation of dredging effluents quality and "Beneficial Use" of dredge spoils, including:**

- 1. open waters disposals shall be formulated to address the resuspension and dispersal of contained pollutants within the dredge material,**
- 2. water effluent and dredge spoils shall be tested according to local, state, and federal regulations to assure all lands and waterways are protected from degradation,**
- 3. the establishment of a baseline of the current state of pollutants on adjacent land or waterways,**
- 4. requirement that any and all claims of "beneficial uses" of dredged spoil shall be supported by peer reviewed studies that clearly document such claims of social or environmental benefits from the proposed disposal practice are real, sustainable and significant; unsupported claims of such benefits shall not justify issuance of permits, variances or exceptions to applicable water quality standards,**
- 5. containment areas utilized for dredge spoils runoff shall be monitored and regulated as point source.**