

WHAT'S IN A NAME? BENEFICIAL USE CATEGORIES

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WHAT'S IN A NAME? BENEFICIAL USE CATEGORIES



OUTLINE

- ❖ USACE Beneficial Use Introduction/History
- ❖ Past Categories
- ❖ 2023
- ❖ A Few Examples of Beneficial Use



USACE BENEFICIAL USE HISTORY



Historical (Pre-Clean Water Act) view: GET RID OF IT!



Lots of side-casting, open water dumping.



BUT NOT JUST DUMPING!



A number of “sediment disposal projects” were what we’d now call beneficial use.

Some of these projects date back >100 years.

- Jetty Island, Washington (island creation started in 1890’s)
- Buttermilk Sound, Georgia (island creation in 1960’s, planted in 1970’s)
- Nott Island, Connecticut (island enhancement, upland habitat since 1930’s)
- Intercoastal Waterway, Florida (island construction, various years)
- Mayport, Florida (beach nourishment)
- East Potomac Park (upland area filled and used for recreation, 1912)



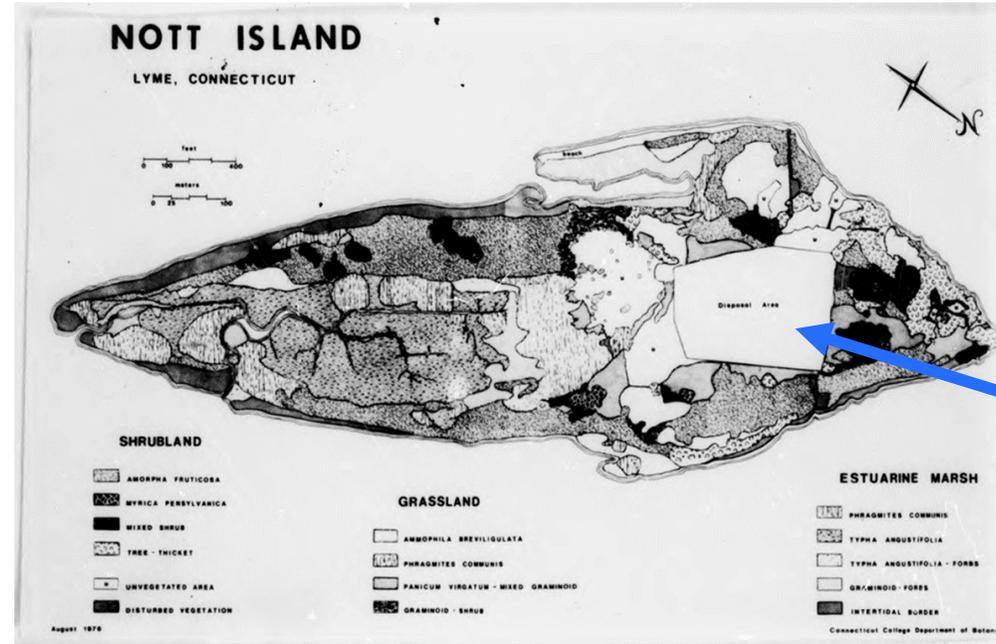
Jetty Island
1946



UNCLASSIFIED



Nott Island
upland
habitat
area,
1978



Typical
dredged
material
island,
Florida,
c. 1975



Mayport,
Florida
1972

UNCLASSIFIED



1987: EM 1110-2-5026 BENEFICIAL USES OF DREDGED MATERIAL



“Dredged material disposal provides opportunities for a number of environmental, economic, and aesthetic beneficial uses.”

10 Categories:

- Habitat development (wetland, upland, island, aquatic, including migratory and nesting use by waterbirds, shorebirds, waterfowl, and other groups).
- Beach nourishment.
- Aquaculture.
- Parks and recreation (commercial and noncommercial).
- Agriculture, forestry, and horticulture.
- Strip mine reclamation and solid waste management.
- Shoreline stabilization and erosion control.
- Construction and industrial use (including port development, airports, urban, and residential).
- Material transfer (fill, dikes, levees, parking lots, roads).
- Multiple purpose.



2015: EM-1110-2-5025 DREDGING AND DREDGED MATERIAL MANAGEMENT



*“Planning, designing, developing, and managing dredged material for **beneficial uses** while incorporating ecological concepts and engineering designs with environmental, economical, and social feasibility.*

Note: In this document, the terms “placement” and “disposal” are used synonymously to describe dredged material deposition after its removal from the dredging prism.”

Defines 13 disposal categories, not all Beneficial Use.

References the BU categories in 2007 EPA/USACE Identifying, Planning, and Financing Beneficial Use Projects Using Dredged Material; Beneficial Use Planning Manual

- Habitat Restoration and Development
- Beach Nourishment
- Parks and Recreation
- Agriculture, Forestry, Horticulture, and Aquaculture
- Strip-Mine Reclamation and Solid Waste Management
- Construction/Industrial Development
- Multiple-Purpose Activities

Combined Aquaculture
Deleted Shoreline stabilization
Deleted Material transfer



2023

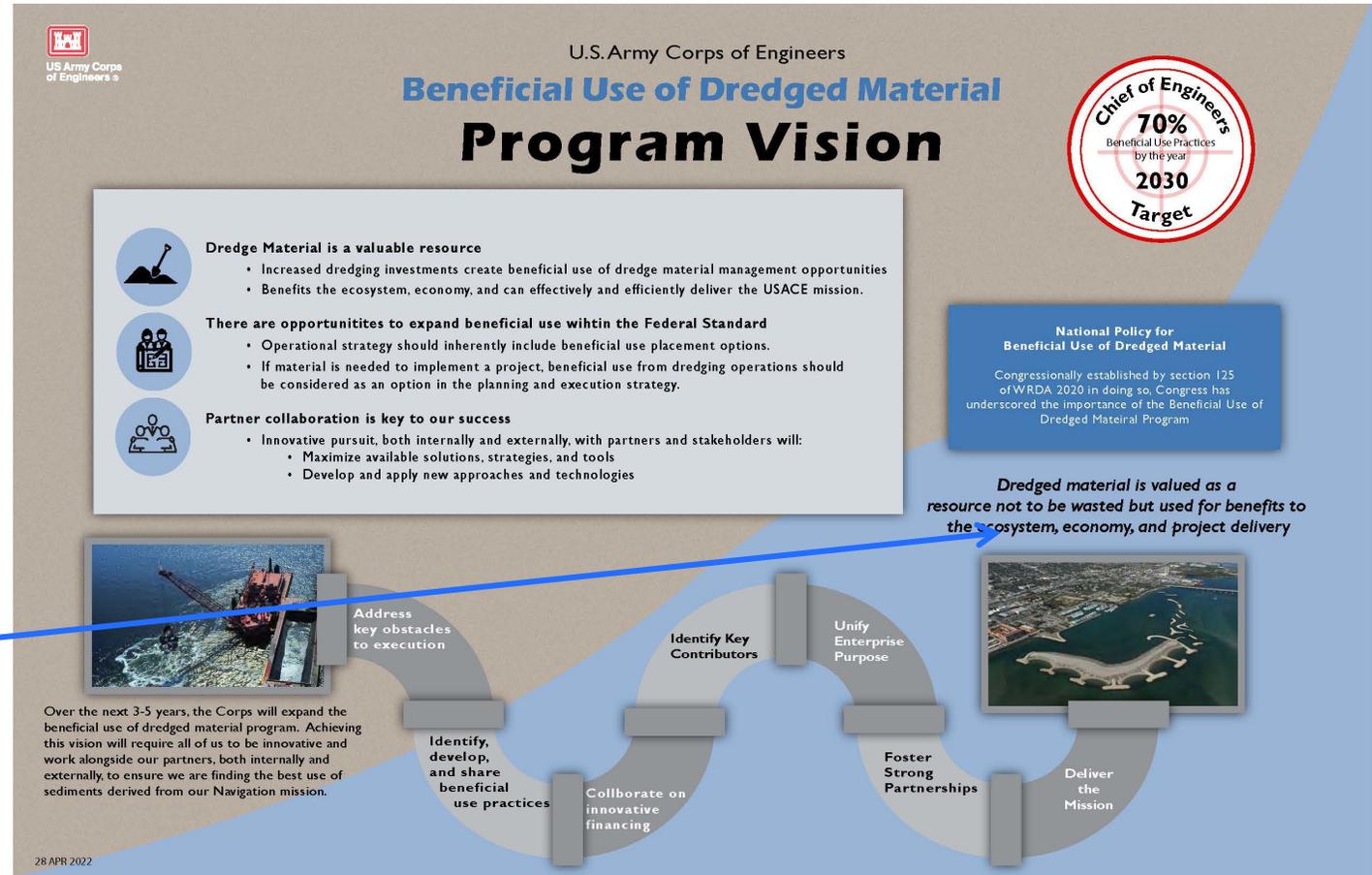


Two Significant USACE Documents

1. 70/30 Vision

Gen. Spellmon's programmatic goal that 70% of navigation dredged sediment is beneficially used by 2030.

Dredged Material is valued as a resource not to be wasted but used for benefits to the ecosystem, economy, and project delivery.



2. Memo: Expanding Beneficial Use of Dredged Material in the USACE



EXPANDING BENEFICIAL USE OF DREDGED MATERIAL IN THE USACE



- ❖ Defines 2 categories of disposal, 1 category that depends, and 10 categories of beneficial use
- ❖ These specific categories are used to track all USACE navigation dredging starting in 2022. Reported in the USACE Dredging Information System.

Disposal Categories

- Confined Aquatic Disposal
- Confined (Diked) Placement
- Open Water Placement*

*Open water placement may be disposal, transitional, or beneficial use, depending on the placement location and the fate of the material.



RSM SEDIMENT PLACEMENT DATA VIEWER

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RSM Sediment Placement Data Viewer

Home About the Data Data Viewer

Beneficial Use is defined as the productive and positive uses of dredged material, which cover broad use categories ranging from fish and wildlife habitat development to human recreation to industrial/commercial uses.

Beneficial Use of Dredged Material Philosophy

On 25 January 2023, LTG. Scott A. Spellmon issued a "Beneficial Use of Dredged Material Command and Philosophy Notice" outlining USACE's goal to beneficially use 70% of its dredged material by the year 2030. Achieving the Beneficial Use (BU) goal of 70% by 2030 will require innovation and commitment as we focus on dredged material as a resource with benefits to the ecosystem, economy, and project delivery.

To ensure the nation's navigable channels are constructed and maintained to authorized dimensions, the USACE performs periodic construction and regular maintenance dredging activities. These activities occur on coastal, intracoastal, and inland systems, for both deep draft and shallow draft ports and channels. While the characteristics and quality of the material differs across the enterprise, it is important to innovate and explore the broad range of opportunities for beneficial use of dredged material, which can provide environmental, recreational, coastal storm risk reduction, and economic benefits.

<p>Beneficial Use 2022-Present</p> <p>System of record for USACE in-house and contracted dredging work</p> <p>2022-Present</p> <p>All DIS data presented in this viewer is directly pulled from the DIS API. This dataset was last updated: 2024-02-14</p> <p>Open 2022-Present</p>	<p>Beneficial Use 1998-2021</p> <p>DIS records reviewed & modified by Districts</p> <p>1998-2021</p> <p>All DIS data presented in this viewer has been reviewed and modified from USACE District data stewards. This dataset was last updated: 2023-03-29</p> <p>Open 1998-2021</p>
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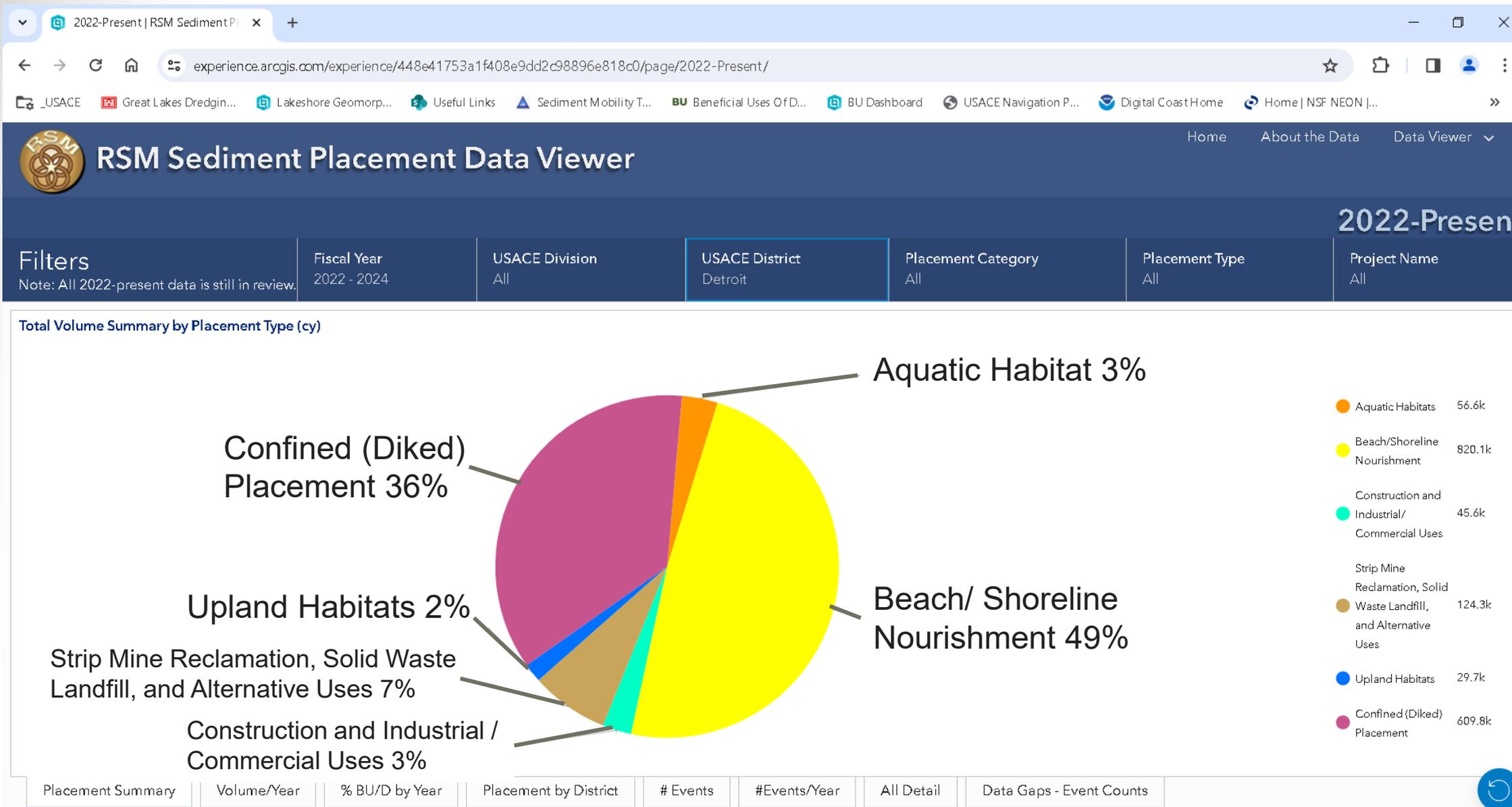
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<https://experience.arcgis.com/experience/448e41753a1f408e9dd2c98896e818c0/>

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EXAMPLE DATA



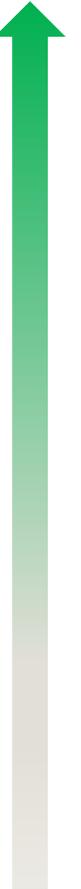


10 CATEGORIES OF BENEFICIAL USE



- Beach/Shoreline Nourishment
- Wetland Habitats
- Aquatic Habitats
- Island Habitats
- Upland Habitats
- Agriculture, Horticulture, Forestry and Aquaculture
- Parks and Recreation
- Construction and Industrial/Commercial Uses
- Strip Mine Reclamation, Solid Waste Landfill, and Alternative Uses
- Multipurpose Uses and Other Land Use
- Open-Water Placement

Increasing
economic,
environmental &
social benefits





BEACH/SHORELINE NOURISHMENT



“Beach nourishment is placement of material from a borrow area, channel, or rehandled stockpile directly onto a beach or river shoreline, in the littoral zone, nearshore, or shallow water with the intent to expand, stabilize or nourish the beach or shoreline.”



Beach placement,
Portage, IN



WETLAND HABITATS



“Material placed to construct or nourish wetland habitats, including freshwater and saltwater marshes, relatively permanently inundated freshwater marshes, bottomland hardwoods, freshwater swamps, bogs, and freshwater riverine and lake habitats.”



This layer placement of sediment for marsh restoration, Pepper Creek, Delaware

See wetland restoration and thin layer placement case studies at

- USACE Thin Layer Placement website: <https://tlp.el.erdcdren.mil/>
- USACE Engineering with Nature website: <https://ewn.erdcdren.mil/>



AQUATIC HABITATS



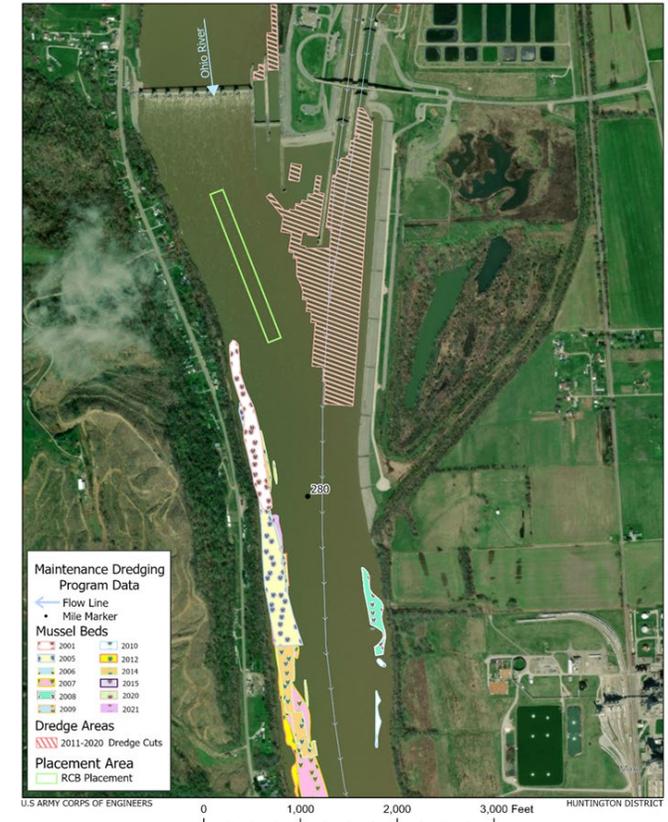
“Placed to improve submerged habitats extending from near sea, river, or lake level down several feet. Examples are tidal flats, oyster beds, seagrass meadows, fishing reefs, clam flats, and freshwater aquatic plant beds.”



Strategic sediment placement in the Ohio River, to nourish mussel beds.

See McQueen et al. 2024. WEDA Journal of Dredging Volume 21, Issue 1.

ROBERT C. BYRD LOCKS AND DAM
DREDGE AREA, PLACEMENT AREA MUSSEL SURVEYS





ISLAND HABITATS



“Placement activities that construct, improve, or maintain islands and/or high zone wetland habitats.”



Pig's Eye Lake Restoration Project, St. Paul, Minnesota

From the Pig's Eye Lake beneficial use success story at the USACE Beneficial Use of Dredged Material website:
<https://budm.el.erd.c.dren.mil/>

Cat Island, Wisconsin

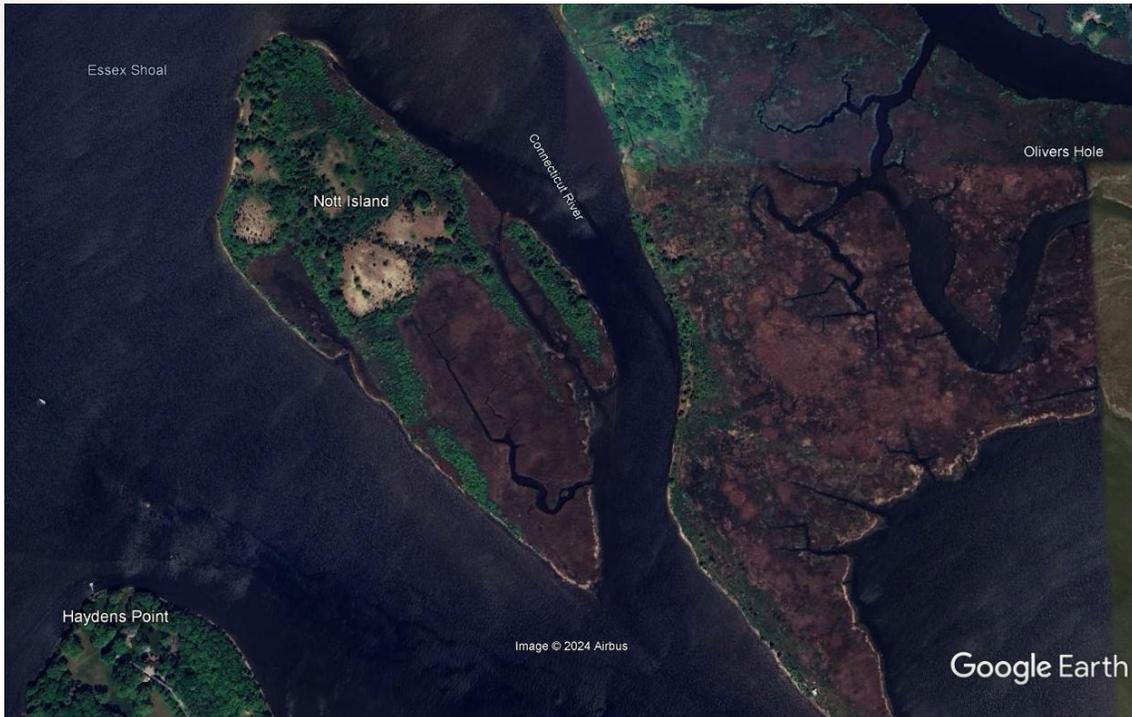




UPLAND HABITATS



“Material placed upland to construct or improve habitats. Upland habitat includes terrestrial communities not normally subject to inundation.”



Meadow creation at
Nott Island,
Conneticut



Northerly Island, Chicago, IL. See the Engineering with Nature Atlas Vol. 2, available at the USACE Engineering with Nature website: <https://ewn.erdcdren.mil/>



AGRICULTURE, HORTICULTURE, FORESTRY AND AQUACULTURE



“Material placed for use by the agriculture, forestry, horticulture, and aquaculture industries. Examples: provide livestock pastures, cattle bedding, incorporating dredged material into marginal soils.”



See past presentations on agricultural uses of sediment at the Great Lakes Dredging Team website:
<https://www.lre.usace.army.mil/Missions/Great-Lakes-Information/Great-Lakes-Dredging-Team/>

Rice Lake, IL sediment growing sunflowers. (Marlin and Darmody. 2018)



PARKS AND RECREATION

“Placement activities supporting the development of recreational areas range from simple projects such as fill for a recreation access to large and complex projects that support both public and private commercial and noncommercial recreation facilities.”



Sediment placement at the USX site in Chicago, now Steelworkers Park. (Marlin and Darmody. 2018)



CONSTRUCTION AND INDUSTRIAL/COMMERCIAL USES



“Placement activities to improve or construct harbor and port facilities, residential and urban areas, airports, dikes, levees and containment facilities, roads, and island and historic preservation areas. Material placed in a CDF and rehandled for construction activities would be classified in this category.”



Fox River superfund site reclaimed sand used at the US 41- Highway 29 intersection in Green Bay, Wisconsin.

From the Fox River beneficial use success story at the USACE Beneficial Use of Dredged Material website:
<https://budm.el.erdcdren.mil/>



STRIP MINE RECLAMATION, SOLID WASTE LANDFILL, AND ALTERNATIVE USES



“Material, including moderately contaminated material, used for the reclamation of abandoned strip mine sites, capping or protecting solid waste landfills, or manufacturing bricks and hardened materials such as road surfaces. Material placed in a CDF and rehandled for reclamation activities would be classified in this category.”



Capping a portion of the OMC superfund site, using Waukegan Harbor, IL sediment



MULTIPURPOSE USES AND OTHER LAND USE



“Combinations of uses, aquatic and/or land based. Purpose(s) does not need to be defined in DIS. Example: a park and recreational development built over an existing solid waste landfill using dredged material as a cap.”

OPEN-WATER PLACEMENT

“Open-water placement in riverine, lacustrine, estuarine, and marine environments with overlying volumes of water.

*Open-water placement areas are *Beneficial Use* when placement is intended for direct BU. If known, BU placement should be categorized based upon the specific intent of that placement “Aquatic Habitats”, “Beach Nourishment”, “Multipurpose”, etc.”



CONCLUSIONS



- ❖ Beneficial Use is here to stay! This represents a major change in attitude toward sediment. Sediment is a resource that we don't want to throw away.
- ❖ USACE now defines and tracks beneficial use categories, on the RSM Sediment Placement Data viewer.
- ❖ To help document beneficial use, USACE now has 13 categories of disposal and beneficial use.
- ❖ Using standard language and classifying projects in the defined categories will help reach the 70/30 goal.

