## Department of Examinations and Assessment

Louisiana State Licensing Board for Contractors

LSLBC

# Coastal Restoration and Habitat Enhancement

### Classification Description:

Refers to projects which have a primary purpose of enhancing, restoring or creating coastlines, inland waterways, islands, beaches, dunes, marshes, swamps, other wetlands, etc. and wildlife and aquatic habitats. Scope of work includes the construction, reconstruction, or improvement of coastal inlets, beaches, seawalls, bulkheads, quay walls, breakwalls, retaining walls, groins, jetties, navigational aids, weirs, levees, berms, revetments, dolphins, other mooring features, related access roads, forestation/reforestation, ecosystem management, grass and mangrove planting, sand fences, dunes, islands, waterway diversion, terraces, reefs, caissons, gabions, geotubes, Jack structures, Eco Bails, articulated concrete mats, dikes, armor units, rip rap, sand bags, sheet piles, other erosion control features, drainage canals, ditches, and related stormwater piping and pump stations. Also includes related excavation, grading, trenching, dredging and placement or disposal of dredged materials, clearing, grubbing, snagging, and platform removal.

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#### Coastal Restoration and Habitat Enhancement is a closed book

examination with 100 multiple-choice questions covering the basics of coastal restoration and habitat enhancement projects.

You will have **four hours** to complete this examination.

#### **Content Outline**

Project Administration/Management	15%	Barrier Construction (Gabions, Rip Rap,	
<b>Environmental Assessment &amp; Management</b>	10%	Silt Fencing, Sheet Piles, Levees, Berms)	11%
Dredging (Hydraulic, Mechanical)	13%		
Surveying	10%	Reef Building (Oyster, Finfish)	6%
Safety	12%	Terraces	7%
Earthwork (Non-Dredging )	9%	Marine Structures	<b>7</b> %

Listed below is only a sample of the many good references available on this subject, which may be helpful in preparing to work in this field or in studying for this examination. This is not a comprehensive listing. Please note that it is not necessary to read all of the books in order to pass the examination. Nor will the reading of these references fully prepare one to take on projects of this nature or to pass this examination. Rather, this list is intended to suggest what types of books might be useful in helping to acquire the basic knowledge needed to perform this type of work.

Some references listed below show a website address for obtaining the reference. From time to time, website addresses may change and no longer be available. In such cases, please search for the appropriate new website.

<u>Fundamentals of Hydraulic Dredging</u>, Second Edition; Turner, Thomas M.; American Society of Civil Engineers; Reston, VA; 1996.

Handbook of Dredging Engineering, Second Edition; Herbich, John B.; McGraw-Hill; New York; 2000.

<u>Pile Driving by Pile Buck</u>; Warrington, Don C., P.E., Editor; Pile Buck International, Inc.; Vero Beach, FL; 2007.

<u>Soils in Construction</u>, Edition: 5; Schroeder, W. L., et. al.; Pearson Prentice Hall; Upper Saddle River, NJ; 2004.

<u>Applied Wetlands Science and Technology</u>, Second Edition; Kent, Donald M., editor; CRC Press, LLC; Boca Raton, FL; 2001.

<u>Project Management in Construction</u>, Seventh Edition; Levy, Sidney M.; McGraw-Hill; New York; 2018.

<u>Construction Surveying: Layout and Dimension Control</u>; Jack Roberts, Ph.D.; Delmar Publishers, Inc.; New York; 1995.

<u>Construction of Marine and Offshore Structures</u>, Third Edition; Gerwick, Ben C., Jr.; CRC Press; Boca Raton, FL; 2007.

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<u>Plant Guide for U.S. Coastal Restoration and Protection</u>; Nikitin, Ciktor and Esposito, Carment, Editors; Nova Science Publishers; New York; 2011.

Excavation & Grading Handbook Revised; Third Edition; Nick Capaci & John Capachi; 2006.

<u>Hydrographic Surveying</u>, EM 1110-2-1003; US Army Corps of Engineers; Washington, DC; 2013. https://plainwater.com/pubs/EM-1110-2-1003.pdf

Identifying, Planning, and Financing Beneficial Use Projects Using Dredged Material: Beneficial Use Planning Manual; Oceans and Coastal Protection Division, Office of Wetlands, Oceans, and Watersheds, Office of Water, U.S. Environmental Protection Agency; Washington, DC; 2007. <a href="https://www.epa.gov/sites/production/files/2015-">https://www.epa.gov/sites/production/files/2015-</a>
08/documents/identifying planning and financing beneficial use projects.pdf

<u>Wetlands Engineering Handbook</u>, ERDC/EL TR-WRP-RE-21; Olin, Trudy J., et. al.; U. S. Army Corps of Engineers, Engineer Research and Development Center, Wetlands Research Program, Environmental Laboratory; Vicksburg, MS; 2000.

http://www.csu.edu/cerc/researchreports/documents/WetlandsEngineeringHandbookUSACE2000.pdf

<u>Dredging and Dredged Material Management</u>, EM 1110-2-5025; Department of the Army, U.S. Army Corps of Engineers; Washington, DC 2015.

https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM\_1110-2-5025.pdf

<u>Louisiana's Comprehensive Master Plan for a Sustainable Coast</u>; Coastal Protection and Restoration Authority of Louisiana; Baton Rouge, LA; 2017. http://coastal.la.gov/resources/library/reports/

<u>Navigation Rules and Regulations Handbook</u>; Department of Homeland Security, U.S. Coast Guard; Washington, DC; 2014.

https://www.navcen.uscg.gov/pdf/navRules/Handbook/CG NAV Rules 29Apr2020.pdf

<u>Safety and Health Requirements Manual</u>, EM 385-1-1; U.S. Army Corps of Engineers; Washington, DC; 2014.

https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM 385-1-1.pdf

<u>A Louisiana Marsh Manager's Permitting Handbook</u>; Audubon Louisiana; Baton Rouge, LA; 2017. <u>http://eowind.com/Pages/PermittingHandbook.html</u>

#### References Continued

<u>Louisiana Wildlife Action Plan</u>; Holcomb, Samuel R. et. al.; Louisiana Department of Wildlife and Fisheries; Baton Rouge, LA; 2015.

https://www.wlf.louisiana.gov/assets/Resources/Publications/Wildlife\_Action\_Plans/Wildlife\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Action\_Plans\_Actio

<u>Guidance for Considering the Use of Living Shorelines 2015</u>; U.S. Department of Commerce, National Oceanic and Atmospheric Administration; Washington, DC; 2016.

https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines 2015.pdf

<u>Beneficial Uses of Dredged Material</u>, EM 1110-2-5026; Department of the Army, U.S. Army Corps of Engineers; Washington, DC; 1987.

https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM\_1110-2-5026.pdf?ver=2013-09-04-072948-840

<u>Use of Geotube Dewatering Containers in Environmental Dredging</u>; Mastin, B.J., and Lebster, G.E.; p. 1481; Watersolve, LLC; Grand Rapids, MI.

https://gowatersolve.com/downloads/GeoAmericas 2008 Mastin and Lebster Use of Geotube Dew at.pdf

An Assessment of Techniques for Removing Offshore Structures; National Academies Press, National Research Council; Washington, DC; 1996. <a href="https://www.nap.edu/catalog/9072/an-assessment-of-techniques-for-removing-offshore-structures">https://www.nap.edu/catalog/9072/an-assessment-of-techniques-for-removing-offshore-structures</a>

<u>Weir Jetties at Coastal Inlets: Part 1, Functional Design Considerations</u>; ERDC/CHL CHETN-IV-53; Seabergh, William C.; U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center; Vicksburg, MS; 2002. <a href="https://apps.dtic.mil/dtic/tr/fulltext/u2/a588889.pdf">https://apps.dtic.mil/dtic/tr/fulltext/u2/a588889.pdf</a>

<u>Guidelines for Marine Artificial Reef Materials</u>, Second Edition; Lukens, Ronald R. and Selberg, Carrie; Artificial Reef Subcommittees of the Atlantic and Gulf States Marine Fisheries Commissions; Ocean Springs, MS, and Washington, DC; 2004.

https://www.gsmfc.org/pubs/SFRP/Guidelines for Marine Artificial Reef Materials January 2004.pdf

<u>Louisiana Inshore and Nearshore Artificial Reef Plan</u>; Louisiana Department of Wildlife and Fisheries; Baton Rouge. <a href="http://www.wlf.louisiana.gov/sites/default/files/pdf/page/37323-inshore-nearshore-plan/inshorenearshorereefplan.pdf">http://www.wlf.louisiana.gov/sites/default/files/pdf/page/37323-inshore-nearshore-plan/inshorenearshorereefplan.pdf</a>

<u>Design and Construction of Retaining Dikes for Containment of Dredged Material</u>; Hammer, David P. and Blackburn, Edward D; U.S. Army Engineer District, Savannah Soils Section, Savannah, GA; 1977. <a href="https://apps.dtic.mil/dtic/tr/fulltext/u2/a045311.pdf">https://apps.dtic.mil/dtic/tr/fulltext/u2/a045311.pdf</a>

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<u>Deck Barge Safety</u>; U.S. Department of Labor, Occupational Safety and Health Administration; Washington, DC; 2009. https://www.osha.gov/Publications/3358deck-barge-safety.pdf

<u>Guidance Notes on Job Safety Analysis for the Marine and Offshore Industries</u>; American Bureau of Shipping; Houston, TX; 2013. <a href="https://ww2.eagle.org/content/dam/eagle/rules-and-guides/current/other/198">https://ww2.eagle.org/content/dam/eagle/rules-and-guides/current/other/198</a> jobsafetyanalysis/jsa gn e.pdf

<u>Contractor's Guide to Contract Administration</u>; US Army Corps of Engineers; Sacramento CA; 2002. https://rms.usace.army.mil/datafiles%5CContractors%20Guide.PDF

<u>Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites</u>, EPA-833-R-06-004; U.S. Environmental Protection Agency; Washington, DC; 2007.

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<u>Louisiana Underground Utilities and Facilities Damage Prevention Law</u>, La. R.S. 40:1749.1 to 1749.27. https://www.louisiana811.com/index.php/dig-law

NASCLA Contractors Guide to Business, Law and Project Management; Louisiana, 12<sup>th</sup> Edition; National Association of Contractors Licensing Agencies; Phoenix, AZ; 2015.

<u>How to Estimate the Cost of Mechanical Dredging</u>; Jones, Patrick T.; Association of Professional Estimators; Nashville, TN; 2012.

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<u>The American Practical Navigator</u>; Bowditch, Nathaniel, LL.D.; National Imagery and Mapping Agency; Bethesda, MD; 2002. <a href="https://msi.nga.mil/Publications/APN">https://msi.nga.mil/Publications/APN</a></u>

<u>Technical Standard for Water-Table Monitoring of Potential Wetland Sites</u>, ERDC TN-WRAP-05-2; U.S. Army Corps of Engineers, Wetlands Regulatory Assistance Program; 2005. <a href="https://www.nrcs.usda.gov/Internet/FSE\_DOCUMENTS/16/nrcs143\_020656.pdf">https://www.nrcs.usda.gov/Internet/FSE\_DOCUMENTS/16/nrcs143\_020656.pdf</a>

<u>Safety and Health Regulations For Construction</u>; 29 CFR 1926; Occupational Safety and Health Administration; Washington, DC. <a href="https://www.govinfo.gov/content/pkg/CFR-2011-title29-vol8/pdf/CFR-2011-title29-vol8.pdf">https://www.govinfo.gov/content/pkg/CFR-2011-title29-vol8.pdf</a>