Coastal Barrier Resources Act

Frequently Asked Questions for Nonstructural Shoreline Stabilization Projects

Overview

The Coastal Barrier Resources Act (CBRA) (16 U.S.C. § 3501 et seq.) prohibits most new federal expenditures and financial assistance within the John H. Chafee Coastal Barrier Resources System (CBRS or System), including projects to prevent the erosion of or to otherwise stabilize any inlet, shoreline, or inshore area.

CBRA's **legislative history** emphasizes that the Act was intended to reduce federal involvement in activities that are detrimental to coastal barrier ecosystems included within the CBRS, including dredging activities and the construction of hurricane and erosion control projects. House Report 97-841 Part 1 states:

> Intense development and human use of coastal barriers have also caused diminished productivity in these important natural resource areas. Disposing sewage effluents, dredging canals and channels, filling wetlands, leveling dunes, clearing vegetation, constructing hurricane and erosion control projects, stabilizing inlets, and other activities often spell trouble for the coastal barrier ecosystems that protect and sustain natural resources of immense aesthetic and economic value.…
>
> …The intent of the legislation is that all forms of direct Federal assistance for projects…be precluded. Federal assistance for erosion control would also be prohibited, except where an emergency threatens life, land, or property immediately adjacent to a System unit.[1]

Keenan Adams, USFWS

Sand dunes at Bon Secour National Wildlife Refuge.

Notwithstanding these prohibitions, federal agencies, after consultation with the U.S. Fish and Wildlife Service (Service), may make expenditures and financial assistance available within System Units for projects and activities that meet one or more of CBRA's exceptions (16 U.S.C. § 3505). The final determination regarding whether a particular project or activity is allowable under CBRA rests with the funding agency. Each affected agency is independently responsible for issuing guidance and regulations as necessary to ensure compliance with CBRA and certifying annually to the Secretary of the Interior that they are in compliance (16 U.S.C. § 3506). CBRA does not prohibit the expenditure of private, state, or local funds. Additionally, CBRA does not prevent federal agencies from issuing permits or conducting environmental studies.

CBRA's exception at 16 U.S.C. § 3505(a)(6)(G) is for "nonstructural projects for shoreline stabilization that are designed to mimic, enhance, or restore a natural stabilization system." Federally funded projects under this exception are also required to be consistent with the purposes of CBRA (16 U.S.C. § 3501(b)). In most cases, federally funded projects that seek to dredge sand from *within* the CBRS for nonstructural shoreline stabilization *outside* of the CBRS are not eligible for consideration under this exception. Federal agencies may consider using alternative borrow sites outside of the CBRS or alternative funding sources (i.e., state, local, or private) for dredging within the CBRS.

The following questions and answers provide information and considerations for federal agencies planning shoreline stabilization projects using exception 6(G). While the statutory provisions of CBRA contain legally binding requirements, the information provided in this document is not regulatory and does not impose legally binding requirements on any federal agency or other entity.

1) What factors should be considered for nonstructural shoreline stabilization projects under 16 U.S.C. § 3505(a)(6)(G)?

The following factors should be considered through the consultation process:

a) Is the shoreline being stabilized located within the CBRS?

This exception is specifically intended for the nonstructural stabilization of shorelines located *within* the CBRS. The dredging of sand from *within* the CBRS to stabilize a shoreline that is located *outside* of the CBRS is not an excepted activity under 16 U.S.C. § 3505(a)(6)(G).

Note: There is another exception, 16 U.S.C. § 3505(a)(7), that allows dredging *within* System Units to support beach nourishment *outside* of the CBRS for certain federal coastal storm risk management projects in New Jersey, North Carolina, and South Carolina. See Shoreline Stabilization and the Coastal Barrier Resources System for more information.

b) Is the shoreline stabilization project nonstructural?

There are both structural and nonstructural methods of shoreline stabilization. This exception allows for only those projects that are nonstructural. Disqualifying factors include the construction, maintenance, or expansion of structural elements in the project (e.g., jetties, groins, seawalls, geotubes, and bulkheads). However, the mere presence of pre-existing structures on the ground in a project area that are not being constructed, maintained, or expanded as part of the project under consultation does not disqualify it from being considered nonstructural. Examples of nonstructural measures include the planting of vegetation and beach nourishment.

c) Is the project designed to mimic, enhance, or restore a natural stabilization system?

Natural features are created through the action of physical, biological, geologic, and chemical processes operating in nature, and include marshes, beaches, and dunes. Nature-based features are created by human design, engineering, and construction to mimic as closely as possible conditions which would occur in the area absent human changes to the landscape or hydrology. Natural and nature-based shoreline stabilization measures may be considered under 16 U.S.C. § 3505(a)(6)(G); however, determinations regarding whether such projects meet the exception are made on a case-by-case basis during the consultation process.

Kaiti Titherington, USFWS

Piping plovers at Rachel Carson National Wildlife Refuge.

Examples of issues to address through a consultation may include, but are not limited to:

- Whether the sand will refill the borrow site over time through natural littoral drift, and if so, how long it is expected to take.
- Whether dredging sand from an inlet or nearshore area will affect the shoreline laterally up and down the coast from the project, and to what extent.
- Whether littoral drift will be impeded by existing hard structures such as groins and jetties.
- Whether the project includes the removal of sand from an inlet or nearshore area, where the volume of sand removed is substantial enough to interfere with the natural function of the coastal barrier system.
- Whether the project includes the construction of artificial dunes designed to prevent natural processes, such as overwash and erosion.
- Whether the sediment to be used in beach nourishment exhibits the appropriate characteristics (e.g., color and grain size) present in the natural system, thereby promoting the integrity of restored beaches for seabirds, shorebirds, sea turtles, and other flora and fauna.

d) Does the project meet the purposes of CBRA?

The purposes of CBRA, as described in 16 U.S.C. § 3501(b), are "to minimize the loss of human life, wasteful expenditure of Federal revenues, and the damage to fish, wildlife, and other natural resources associated with the coastal barriers along the Atlantic and Gulf coasts and along the shore areas of the Great Lakes by restricting future Federal expenditures and financial assistance which have the effect of encouraging development of coastal barriers, by establishing the [CBRS], and by considering the means and measures by which the long-term conservation of these fish, wildlife, and other natural resources may be achieved." Projects or actions must be consistent with the purposes of CBRA in order to meet the requirements of the exception at 16 U.S.C. § 3505(a)(6)(G).

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Sea oats by the Gulf of America at Bon Secour National Wildlife Refuge.

i. Does the project minimize the loss of human life, wasteful federal expenditures, and damage to fish, wildlife, and other natural resources?

Many species depend upon natural, dynamic sediment exchanges amongst barrier island environments. Dredging of inlets for sand changes the shape of the seafloor, which may alter sediment exchanges through the inlet and to nearby barrier islands. Sand removal may alter the benthic community, possibly reducing the system's ability to support a full suite of inlet habitats. Additionally, beach nourishment used to protect existing structures and communities may attract further development in vulnerable areas,[2] thus requiring greater need for future sand replenishment or more drastic stabilization measures.[3]

It is the Service's opinion that federal agencies need not demonstrate that projects specifically reduce the loss of human life to meet the requirements of the exception. The intent of CBRA is to minimize loss of human life by restricting future expenditures and financial assistance that have the effect of encouraging development of coastal barriers. If it can be shown that the project is not likely to result in increased development of coastal barriers, and therefore there is no additional risk to human life resulting from the project, then it may satisfy the "minimize the loss of human life" condition under the exception.

Examples of issues to address through a consultation may include, but are not limited to:

- Whether the project will result in the degradation or loss of coastal-dependent species or their habitat.
- Whether the project may encourage development on coastal barriers, thus resulting in higher populations in hazard-prone areas.
- Whether the project will likely need repair or repeated nourishment and what the expected frequency and costs may be.
- Whether the project is designed to protect structures that were constructed within the CBRS after designation.

ii. Does the project consider the means and measures by which the long-term conservation of the fish, wildlife, and other natural resources may be achieved?

Shoreline stabilization activities along coastal areas may negatively impact coastal-dependent species, many of which are at-risk or federally protected, further exacerbating their vulnerability and endangerment. Furthermore, shoreline alteration may result in desired short-term stability; however, the long-term resiliency of the coastal barrier system may be compromised.[4] Examples of issues to address through a consultation may include, but are not limited to:

- Whether appropriate pre- and post-project data collection and monitoring is in place to ensure that the project does not threaten the long-term conservation of the fish, wildlife, and other natural resources.
- Whether the project incorporates reasonable and prudent conservation measures and Best Management Practices to ensure the long-term conservation of the fish, wildlife, and other natural resources.

Beach renourishment activities also have the potential for positive impacts. For example, expansion or restoration of degraded or damaged beaches can provide habitat for threatened and endangered species, such as birds and sea turtles, when it otherwise might not exist. Benefits of shoreline stabilization measures should also be considered as part of the consultation process.

2) What are some examples of nonstructural shoreline stabilization activities or projects that may qualify under 16 U.S.C. § 3505(a)(6)(G)?

Examples of nonstructural shoreline stabilization activities or projects that may be eligible under this exception (following consultation with the Service) include:

- Planting of vegetation (e.g., native plants to stabilize dunes) under certain circumstances.
- Nonstructural beach nourishment in undeveloped areas within the CBRS (for purposes other than protecting development that occurred after the CBRS designation).
- Nonstructural beach nourishment within the CBRS for excluded areas in the CBRS units (generally pre-existing pockets of development that were mapped out of, but surrounded by, CBRS units).
- Living shorelines[5] that are comprised of vegetation, sediment, and other nonstructural materials. Given that this exception specifies that the projects must be nonstructural, the use of hard

structures is not allowable under the exception. Living shorelines using structural materials should be considered under another exception that does not specify that the projects be nonstructural.[6]

3) Is there a provision under CBRA for emergency actions immediately adjacent to the CBRS?

CBRA prohibits a wide variety of federal expenditures including "the carrying out of any project to prevent the erosion of, or to otherwise stabilize, any inlet, shoreline, or inshore area, except that such assistance and expenditures may be made available…in all units, in cases where an emergency threatens life, land, and property immediately adjacent to that unit" (16 U.S.C. § 3504(a)(3)). There may be limited cases where it is appropriate for federal agencies to carry out projects within the CBRS in accordance with this provision. It is the responsibility of the federal funding agency to determine what constitutes an emergency that threatens life, land, and property immediately adjacent to a unit.

Unlike most of CBRA's exceptions, there is no requirement for federal agencies to consult with the Service under this provision. However, the Service does appreciate a notification when this provision is exercised. Federal expenditures that are deemed appropriate under this provision of CBRA do not have to be consistent with the purposes of CBRA.

4) Are there any other CBRA exceptions under which shoreline stabilization may be conducted?

Yes. There is an exception under CBRA for "projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats, including… stabilization projects for fish and wildlife habitats, and recreational projects" (16 U.S.C. § 3505(a)(6)(A)). Federal expenditures that meet this exception must also be consistent with the purposes of CBRA. Examples of shoreline stabilization projects that may meet this exception (following consultation with the Service) include:

- Beach nourishment projects designed specifically for the benefit of fish and wildlife resources and habitats.
- Nature-based measures for shoreline stabilization such as living shorelines that protect or enhance habitat, which may include structural and non-structural components such as sand fill, vegetation, and oyster/mussel reefs.

There are also other exceptions under CBRA where dredging and shoreline stabilization may be allowable, see Exceptions to Limitations on Federal Expenditures.

5) Where can I get information on the effects of sediment removal and placement on coastal barriers?

A 2021 joint report by the Service and the U.S. Geological Survey (USGS) assesses the impacts of sediment removal from and placement in coastal barrier systems. The report contains a comprehensive summary of the available scientific literature on the impacts of sediment management actions (e.g., dredging and beach nourishment) within coastal barrier systems. The report provides resource managers with valuable information they can use to evaluate sediment management practices and the effects they might have on coastal barrier

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Shoreline with vegetation including sea oats at Ten Thousand Islands National Wildlife Refuge.

systems, including: impacts to coastal sediment supply, sea bottom habitats, beach habitats, fish and other marine species, and long-term coastal resilience along the U.S. coasts. The report identifies the physical and biological data required for assessing and monitoring impacts of sediment management actions in coastal barrier island systems and provides a table of existing USGS data resources for the following five CBRS areas of interest: Hereford Inlet, NJ; Carolina Beach, NC; Masonboro Inlet, NC; New River Inlet, NC; and Folly Beach, SC.

Additional Resources

- CBRS Maps and GIS Data
- CBRA Project Consultation
- Exceptions to Limitations on Federal Expenditures
- Shoreline Stabilization and the CBRS

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Beach erosion at Pea Island National Wildlife Refuge.

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[1] U.S. Congress, House, Committee on Merchant Marine and Fisheries, *Coastal Barrier Resources Act: Report Together with Additional Views (to Accompany H.R. 3252)*, 97th Congress, 2d Session, 1982, H. Rep. 97-841, part 1, 10-11, 15.

[2] A 2016 research article exploring the relationship between nourishment and development had the following conclusion: "In a comprehensive, parcel-scale analysis of all shorefront single-family homes in the state of Florida, we find that houses in nourishing zones are significantly larger and more numerous than in non-nourishing zones. The predominance of larger homes in nourishing zones suggests a positive feedback between nourishment and development that is compounding coastal risk in zones already characterized by high vulnerability." Scott B. Armstrong et al., "Indications of a positive feedback between coastal development and beach nourishment," *Earth's Future* 4, no. 12 (2016): 626, accessed February 19, 2025, https://doi.org/10.1002/2016EF000425.

[3] Orrin H. Pilkey and Katharine L. Dixon, *The Corps and the Shore* (Washington, D.C.: Island Press, 1996), 78.

[4] A 2017 study by Jennifer L. Miselis (U.S. Geological Survey, St. Petersburg, FL) and Jorge Lorenzo-Trueba (Center for Environmental and Life Sciences, Montclair State University, Upper Montclair, NJ) found that "the longer humans intervene in the coastal system by fixing the barrier in place laterally and vertically, the faster drowning occurs, even if natural barrier island morphodynamics are restored after human intervention. This suggests that coastal management techniques that seek to maintain barrier positions and redistribute overwash deposits may result in more resilient coastlines initially but that increased vulnerability resulting from human alterations may not be reversible over longer time scales." Jennifer L. Miselis and Jorge Lorenzo-Trueba, "Natural and Human-induced Variability in Barrier-Island Response to Sea Level Rise," *Geophysical Research Letters* 44, no. 23 (2017): 11929, accessed February 19, 2025, https://doi.org/10.1002/2017GL074811.

[5] The National Oceanic and Atmospheric Administration (NOAA) describes living shorelines as: "a green infrastructure technique using native vegetation alone or in combination with low sills to stabilize the shoreline. Living shorelines provide a natural alternative to 'hard' shoreline stabilization methods like rip rap or bulkheads, and provide numerous benefits including nutrient pollution remediation, essential fish habitat structure, and buffering of shoreline from waves and storms. Research indicates that living shorelines are more resilient than bulkheads in protecting against the effects of hurricanes." NOAA, "What is a living shoreline?" National Ocean Service website, last modified June 16, 2024, accessed July 2, 2024, https://oceanservice.noaa.gov/facts/living-shoreline.html.

[6] Living shoreline projects that have structural components may qualify under the exceptions at 16 U.S.C § 3505(a)(6)(A) and (C).

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