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Legal Issues Affecting Blue Carbon Projects on Publicly-Owned Coastal Wetlands

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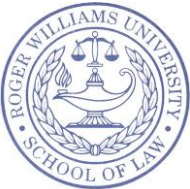
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Legal Issues Affecting Blue Carbon Projects on Publicly-Owned Coastal Wetlands

February 2020



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This study is a product of the Marine Affairs Institute at Roger Williams University School of Law and the Rhode Island Sea Grant Legal Program. The authors of this study were Read Porter, Senior Staff Attorney; Cody Katter, Rhode Island Sea Grant Law Fellow; and Cory Lee, Rhode Island Sea Grant Law Fellow. All errors and omissions are the responsibility of the Marine Affairs Institute and the authors. This study is provided only for informational and educational purposes and is not legal advice.

This study was prepared by Restore America's Estuaries and the Marine Affairs Institute using Federal funds under awards NA16NMF4630113 from NOAA, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the NOAA or the U.S. Department of Commerce. These environmental data and related items of information have not been formally disseminated by NOAA, and do not represent and should not be construed to represent any agency determination, view, or policy.

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- *Educate the next generation of marine law and policy professionals both within the classroom and in the community;*
- *Serve as a legal and policy resource for the marine community by producing high quality research in partnership with stakeholders in Rhode Island, New England, the US, and around the world; and*
- *Convene diverse experts to discuss cutting-edge issues in marine law and policy.*

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About Restore America's Estuaries

Restore America's Estuaries (RAE) is dedicated to the protection and restoration of bays and estuaries as essential resources for our nation. RAE is a national leader in understanding the economic importance of estuaries, advancing blue carbon science, creating an imperative for living shorelines, and promoting strategies to enhance coastal resilience. We work with strategic partners to advance this mission regionally and as an advocate in the nation's capital. RAE and its alliance members create a powerful and unified voice for coastal habitat restoration and the well-being of coastal communities.

Legal Issues Affecting Blue Carbon Projects on Publicly-Owned Coastal Wetlands: Executive Summary

Coastal wetlands play an important role in sequestering atmospheric carbon, but these ecosystems are under threat from sea level rise, land use conversion, and other causes. Restoration projects in coastal wetlands can provide a range of benefits for habitat and ecosystems, including by increasing sequestration of “blue carbon.” Coastal wetland restoration projects that effectively sequester carbon and meet the requirements of the voluntary carbon market can generate tradeable carbon offsets, which have a monetary value and can be used to finance all or part of the restoration needed to generate them. Blue carbon offsets thus represent a promising tool to promote effective restoration and maintenance projects on threatened and degraded coastal wetlands.

Agencies must be confident that they will not violate the law before they commit to deployment of blue carbon offset projects on public coastal wetlands. Federal, state, and tribal agencies are critical partners in wetlands restoration projects because they control a substantial portion of the nation’s coastal wetlands. However, land management agencies may justifiably worry about violating their legal mandates if they participate in wetland restoration projects funded through blue carbon offsets. In the absence of past models of successful blue carbon offset projects on public lands, and without explicit authorization for this activity, agency staff can benefit from an analytical framework to understand what legal issues may occur in a blue carbon offset project and how to design projects to avoid legal problems to the extent possible. This study begins to provide that framework by identifying legal considerations for blue carbon offset projects on public coastal wetlands.

Agencies are faced with the difficult challenge of both complying with all relevant laws and satisfying the conditions necessary to qualify projects for offsets under voluntary standards. Key conditions for offset markets with legal implications include: (i) *additionality* – the project must actually sequester carbon; (ii) *permanence* – the project must provide the promised sequestration benefit over a long time period; and (iii) *unambiguous ownership* – the entity registering the carbon offset must be the only one able to reasonably claim it. Each of these three core conditions may result in potential legal issues when applied to blue carbon-financed restoration projects on public coastal wetlands. Based on an evaluation of representative federal, state, and tribal law, this study divides these legal issues into two broad categories: (i) title and property rights; and (ii) legal authority.

Title and Property Rights

Agencies can directly control activities only on lands that they own in full. Coastal wetlands raise complex ownership and jurisdiction issues that may undermine agency authority in several ways.

- *Property boundaries at the coast are complex.* The owner of upland areas often does not own submerged lands, and the precise boundary between these two properties differs from state to state. This is a particular challenge for coastal wetlands, which often include intertidal areas that may be owned by multiple entities. In such cases, careful work is needed to ensure that the offset is unambiguously owned by the entity claiming it.
- *Coastal property boundaries are ambulatory.* In other words, boundaries move over time with changes in sea level and coastal features. In a time of rising sea levels, a location that is upland today may be submerged in the future, which could result in a loss or change of sequestration benefits and change the ownership of the defined project area. Similarly, coastal wetlands may shift inland in response to changing conditions, which could implicate additional property owners. These ambulatory boundaries thus could raise issues related to both permanence and unambiguous ownership.
- *Public lands may be subject to private property rights or control even if owned by the government.* These conflicting property rights claims may be a result of, for example, past sale of mineral estates or government acquisition of easements rather than fee simple ownership. Where a public landowner is

not the sole owner of rights to a property, it may not be legally authorized to exclude activities by the other owner that could be inconsistent with carbon sequestration, thus posing a risk to permanence of a blue carbon project.

Legal Authority

Agencies must have statutory authority in order to participate in blue carbon projects that meet the needs of multiple project partners, including restoration funders, service providers, and other government and private landowners. Fundamental questions of whether agencies are appropriately authorized to engage in offset project activities may pose substantial challenges to the feasibility of blue carbon offset projects that may require creativity to resolve.

- *Public land management agencies are not explicitly authorized to participate in blue carbon offset projects, but offset project activities are consistent with existing agency mandates.* In the absence of explicit authorization, agencies must determine whether their general land management authority is broad enough to cover participation in coastal wetland restoration projects. This study reviewed agency authority and found that existing authority appears sufficiently broad to conduct a wide range of restoration activities consistent with blue carbon offset projects.
- *Blue carbon projects often require that agencies be able to accept donations, for which statutory authority is required and usually present.* Blue carbon offset projects require land managers to partner with non-governmental entities, often in complex transactional relationships involving donations by non-governmental entities and various forms of contractual transactions among private and governmental project partners. Most land management agencies have relevant authority allowing them to acquire lands and accept donations. However, the extent and conditions on acquisitions and gifts may differ by agency. Key differences across agencies with respect to authority to accept donations include: (i) whether an agency can accept donated money and land; (ii) whether donations can be dedicated to particular agency activities or sites; and (iii) whether a quasi-governmental foundation is available to accept donations.
- *Carbon rights are an interest in property with monetary value, which many agencies are not authorized to transfer away from public ownership.* Agencies have limited authority to transfer public property rights from public lands because such transfers may threaten the purposes for which these lands were set aside. While examples of authorized transactions involving interests in land abound, these transactions require that land management agencies have statutory authorization. While “multiple use” agencies charged with seeking economic returns from public land may have the requisite authority, many land management agencies lack appropriate authority, precluding transfers of carbon rights. Without a transfer of carbon rights, carbon markets may not accept that non-government project funders have unambiguous ownership of the carbon rights. As a result, transfer of carbon rights may pose the greatest challenge to successful use of carbon offsets in the coastal wetland restoration context. Additional research is needed to clearly delineate the extent of legal certainty required for unambiguous ownership of offsets and whether and how relevant agencies may be able to structure project memoranda of agreement that satisfy carbon market needs.

Guidance for Land Managers

After identifying potential legal hurdles to successful implementation of blue carbon projects on publicly-owned coastal wetlands, this study identifies four areas of guidance to assist project managers in identifying and avoiding or overcoming these hurdles. Development of blue carbon offset projects is inherently site-specific,

occurring in the context of a particular ecosystem, array of cultural uses, project partners, and suite of laws and regulations. As the relevant legal standards and authority will differ substantially from place to place, this study cannot provide guidance on the legal challenges associated with any specific blue carbon offset project. Instead, the following guidance is intended to provide generalized considerations to assist project proponents in navigating the most substantial legal challenges that were identified in this study.

- *Identify All Owners of the Project Site Throughout the Offset Project Period Required for Permanence:* Sea level rise and coastal erosion are likely to substantially change the geographic location of the property boundary between submerged lands and uplands as well as the location of coastal wetlands in upland areas. Blue carbon offset project sites are likely to need to migrate with coastal dynamics in order to ensure continuing sequestration benefits and avoid permanence problems, and projects that do not account for geographic change are at risk of violating unambiguous ownership requirements of voluntary carbon markets. To avoid these problems in the future, project proponents may use coastal change models to identify reasonable expectations for migration of the coastline and the relevant coastal wetland area throughout the offset project period. The expected future locations of the coast and wetlands can be used to identify any relevant property owners of the project site, including upland owners of areas where marshes may migrate and submerged lands owners who may take title to the current project site. Project proponents will also benefit by identifying any severed estates or competing property rights to the project site that could require the public landowner to accommodate development inconsistent with the offset project. Each of these property owners may need to waive their rights, including potential future offset claims, through an easement or other mechanism that survives transfers of property ownership in order for the unambiguous ownership and permanence expectations to be met.
- *Determine Whether and How Public Agencies Can Transfer Carbon Rights to the Project Site:* The ability of public agencies to transfer carbon rights to a private owner is likely to be among the most substantial challenges to blue carbon project success. Land managers working to develop blue carbon offset projects thus must determine whether the relevant public agencies are authorized to alienate carbon rights as a property rights transaction (such as a leasehold). For agencies without explicit authority to transfer property rights, project proponents will require alternative mechanisms, such as non-binding MOAs or use of newly-acquired lands (rather than existing public lands), to ensure that the public offset investor has adequate ownership interest in the carbon rights to meet the requirements of the voluntary carbon market. For example, past FWS projects have primarily occurred on private lands subsequently added to the NWR system—reserving the carbon rights on those lands to the offset owner. Similar attention to siting and transaction structure may be able to overcome legal hurdles in other contexts by locating projects on inholdings or conservation lands or by using non-governmental foundations as part of project transactions to obligate maintenance funds for site-specific uses.

As failure to reach agreement on the acceptable form of carbon rights transfers could effectively halt an offset project, determination of the structure of these transactions is an important early consideration for project proponents. These consultations may need to include not only the agency, investor, and conservation provider partners, but also carbon market representatives, to ensure that rights transactions satisfy market standards. Successful delineation of the structure of carbon rights transfers will be likely to drive project design and will thus provide important guiderails for the technical and site-specific planned actions.

- *Address Time Limits on Public Lands Transactions:* Blue carbon offset projects may require maintenance of sequestration for up to 100 years. This long time period is a challenge for public agencies due to

limitations on the term of required leaseholds or other legal agreements needed to transfer carbon rights for the entirety of the project period. Where limitations on transaction length are shorter than the period required for permanence, project proponents may need to determine whether alternative legal arrangements satisfy carbon markets. For example, shorter-term carbon rights transactions with a limited right of renewal may satisfy both carbon market standards and public land agency mandates. Alternatively, as for authority for transfers of carbon rights, transactions that do not require a leasehold or other property transaction may be required to satisfy agency mandates; in such cases, project proponents may need to obtain assurance from the relevant carbon market that the proposed structure is acceptable.

- *Review Site-Specific Legal Framework:* While not covered in detail in this report, individual land management units, such as National Parks, may be subject to site-specific legislation. This legislation (and associated regulations) may alter factors such as what the activities allowed on individual public land units and how the relevant agency is required to manage the site. In addition, projects on specific sites are subject to additional requirements of federal, state, and/or tribal law that may not be covered in this report. Consideration of these site-specific requirements is necessary for successful implementation of projects on sites subject to these individualized management requirements.

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1 Introduction

Coastal wetlands play an important role in sequestering atmospheric carbon, but these ecosystems are under threat from sea level rise, land use conversion, and other causes.¹ Restoration projects in coastal wetlands can both sequester “blue carbon” and enhance habitat.² Blue carbon projects³ that meet requirements for the voluntary carbon market can generate tradeable carbon offsets, which have a monetary value and can be used to finance a portion of the restoration projects that are needed to generate them.⁴ Thus, blue carbon offset projects represent a promising tool to promote effective restoration and maintenance of threatened and degraded coastal wetlands.

Legal certainty is a key hurdle to the deployment of successful blue carbon offset projects. Federal, state, and tribal agencies are critical partners in these projects because they control a substantial portion of the nation’s coastal wetlands. Land management agencies are constrained by legal authorities, and therefore may not be confident in their ability to use this funding mechanism absent explicit authorization. In the absence of such explicit authorization, agencies may benefit from an analytical framework to assess whether and how legal issues may affect their ability to participate in blue carbon offset projects.

This study identifies key legal authorities and principles that affect whether and how government land management agencies can participate in blue carbon offset projects. While the principles identified here are applicable to any jurisdiction, this analysis focuses on a selection of federal, state, and tribal agencies and jurisdictions as case studies. These include the federal National Park Service and Fish and Wildlife Service; the states of Florida, Massachusetts, Washington, and Louisiana; and the Tulalip Tribes of Washington. Legal research applicable to these agencies and jurisdictions identified two primary categories of legal challenges:

- **Title and Property Rights:** Agencies can directly control activities only on lands that they own and control. Coastal wetlands raise complex ownership and jurisdiction issues because they may straddle property and jurisdictional boundaries at the coast, and these boundaries move over time with changes in sea level and coastal features. In addition, these lands may be subject to private property rights or control even if owned by the government.
- **Legal Authority:** Statutes provide government agencies with authority to carry out actions. Agencies cannot go beyond the authority provided by the legislature, but explicit authorization for them to conduct blue carbon projects is lacking. Agencies therefore must determine whether blue carbon projects are authorized by more general land management authority. In addition, blue carbon projects often require that authority to accept donations of money, labor, and land and the authority to transfer ownership of carbon rights from public lands to non-governmental entities. Authority to transfer carbon rights may pose the greatest challenge to land managers, as key agencies lack authority to enter into leases with private entities for this purpose.

¹ Elizabeth McLeod et al., *A Blueprint for Blue Carbon: Toward an Improved Understanding of the Role of Vegetated Coastal Habitats in Sequestering CO₂*, 9 FRONTIERS IN ECOL. & ENV'T 552 (2011)

² Winnie W.Y. Lau, *Beyond Carbon: Conceptualizing Payments for Ecosystem Services in Blue Forests on Carbon and Other Marine and Coastal Ecosystem Services*, 83 OCEAN & COASTAL MGMT. 5 (2013).

³ This study defines a “blue carbon project” as any coastal wetland restoration project funded in whole or part through the generation of carbon offsets.

⁴ Roger Ullman et al., *Introducing Blue Carbon in Climate Market Mechanisms*, 83 OCEAN & COASTAL MGMT. 15 (2013).

After explaining the scope of this study in section 2, section 3 provides an overview of carbon offsets in the context of coastal wetlands. Section 4 examines past carbon offset and analogous projects on public lands. Part 5 discusses the two categories of legal challenges affecting blue carbon offset projects on federal, state, and tribal public lands. Finally, Part 6 concludes with guidance for land managers assessing legal authority to participate in blue carbon projects and in structuring these projects to avoid potential pitfalls.

2 Scope of Analysis

This study is based on legal research and analysis intended to determine whether and how federal, state, and tribal government agencies can participate in blue carbon offset projects on publicly owned coastal wetlands. It focuses on entities and locations of particular interest for blue carbon offset projects. These entities are not the only possible government entities with blue carbon responsibility, but were selected to serve as exemplars to understand and illustrate how legal principles may play out in practice.

Multiple agencies have responsibility for management of public coastal wetlands in the U.S. These agencies can be divided into two categories: those with land management authority and those with regulatory authority over activities in wetlands. These divisions occur at both federal and state levels.

At the federal level, this analysis focuses on the U.S. Fish and Wildlife Service (FWS or “the Service”) and National Park Service (NPS), which are the two land management agencies expected to have the broadest responsibility for coastal wetlands.⁵ FWS manages the more than 92 million acres of the National Wildlife Refuge (NWR) system under the National Wildlife Refuge System Improvement Act of 1997 (NWRISA).⁶ NPS manages the National Park System pursuant to the National Park Service Organic Act of 1916, as amended (OA, or Organic Act).⁷ Wetlands actions under federal law must be consistent with these agencies’ land management authority and may be subject to permitting by the U.S. Army Corps of Engineers (USACE) under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act.⁸

State land management echoes that at the federal level, with multiple agencies with land management authority and wetlands regulatory authority. This study uses Florida, Louisiana, Massachusetts, and Washington as examples to illustrate how state land management may interface with blue carbon offset programs. These states were selected because they have substantial acreage of public coastal wetlands and are drawn from diverse geographies and legal traditions. The responsible agencies and relevant authority follow.

- The Board of Trustees of the Internal Improvement Trust Fund (Board) holds state lands, including coastal wetlands, in trust for the public.⁹ These lands are administered by the Florida

⁵ Four agencies manage 94% of federal lands. GORDON SMITH, CLIMATE ACTION RESERVE, [FOREST OFFSET PROJECTS ON FEDERAL LANDS](#) 7-8 (2012). In addition to FWS and NPS, these include BLM, which manages public lands not included in a specific unit pursuant to FLPMA, 43 U.S.C. §§ 1701-87, and the U.S. Forest Service, which manages the National Forest System and National Grasslands pursuant to the National Forest Management Act of 1976, 16 U.S.C. §§ 472A-1614.

⁶ Pub. L. No. 105-57, 111 Stat. 1252, codified at 16 U.S.C. § 668dd.

⁷ Pub. L. No. 62-235, 39 Stat. 535, codified as amended at 54 U.S.C. §§ 100101 *et seq.*

⁸ 33 U.S.C. §§ 1344, 403.

⁹ FL. STAT. §§ 253.001, 253.03 (vesting in the Board, *inter alia*, “swamp and overflowed lands,” “lands owned by the state by right of its sovereignty, “tidal lands,” and “lands covered by shallow waters”). Certain lands, such as transportation corridors and water management district lands, are not vested in the Board. *Id.* § 253.03.

Department of Environmental Protection (FDEP) Division of State Lands, except where responsibility has been delegated to another entity, such as a water management district, the Department of Agriculture and Consumer Services, or the FDEP Aquatic Preserve Program.¹⁰ FDEP also regulates activities in wetlands.¹¹

- The Louisiana Office of State Lands (OSL), within the state Division of Administration, administers public lands, including water bottoms, in the state.¹² The Office of State Parks (OSP) manages protected state lands, including state parks, preservation areas, and preservation sites.¹³ Projects involving the use of state-owned lands or water bottoms are subject to the coastal use permitting program, which is administered by the Department of Natural Resources (LDNR) Office of Coastal Management under the Louisiana State and Local Coastal Resources Management Act (LCRMA).¹⁴
- Massachusetts state lands are held by several agencies, including the Division of Conservation and Recreation (DCR) within the state Department of Environmental Management (recreation lands)¹⁵ and the Division of Fisheries and Wildlife within the Department of Fish and Game (MassWildlife) (wildlife management areas, wildlife sanctuaries, and nature preserves).¹⁶ Activities that may affect wetlands on state lands are subject to the Massachusetts Wetlands Protection Act, which is administered by municipal Conservation Commissions under the oversight of the state Department of Environmental Protection (MassDEP).¹⁷
- Public lands in Washington are managed by the Department of Natural Resources (WDNR), including state lands, forest lands, and aquatic lands.¹⁸ Other state-owned lands are managed by different entities, including the State Parks and Recreation Commission (state parks and parkways)¹⁹ and the Department of Fish and Wildlife (WDFW) (wildlife areas, water access areas, and working lands).²⁰ The Washington Department of Ecology (WDE) manages wetlands permitting in Washington pursuant to the state Water Pollution Control Act (WPCA) and Shoreline Management Act (SMA).²¹

Blue carbon projects on tribal lands raise additional unique issues. Tribal law is *sui generis*²² (unique) and raises challenging legal issues that are often unique to particular tribes and may differ substantially

¹⁰ *Id.* §§ 253.002; 375.031 (“All land, water areas, and related resources hereafter needed by the state for outdoor recreation, wildlife management, forestry management, nature preservation, water conservation and control, and other similar or related purposes shall be acquired by the Division of State Lands of the Department of Environmental Protection pursuant to the procedures set forth in chapter 253.”).

¹¹ See ASSOCIATION OF STATE WETLAND MANAGERS, [FLORIDA STATE WETLAND PROGRAM SUMMARY](#) 3-5 (2015) (providing overview of state regulation of wetlands).

¹² LA. STAT. §§ 41:1, 41:14 (water bottoms), 41:1701-1714 (management of water bottoms).

¹³ LA. STAT. §§ 56:1682 (purpose of OSP), 1684 (classifications of lands under OSP authority).

¹⁴ LA. STAT. § 49:214.21 *et seq.*

¹⁵ MASS. GEN. LAWS ch. 21, § 1 (“The division of state parks and recreation shall have control over the state parks, forests, parkways, waterways, rinks, pools, beaches and other recreational lands and facilities”).

¹⁶ MASS. GEN. LAWS ch. 131, §§ 1A, 6 (wildlife sanctuaries), 10A (nature preserves); 321 Mass. Code Regs. 3.01 (wildlife management areas).

¹⁷ MASS. GEN. LAWS ch. 131, § 40.

¹⁸ WASH. REV. CODE §§ 79.02.010 (defining public lands), 79.105.010 (aquatic lands); *see also id.* § 79.02.010 (“‘Aquatic lands’ means all state-owned tidelands, shorelands, harbor areas, and the beds of navigable waters as defined in RCW 79.105.060 that are administered by the department.”).

¹⁹ *Id.* § 79A.05.020.

²⁰ *Id.* § 77.12.037; *see also* WDFW Lands, WDFW, <https://wdfw.wa.gov/about/wdfw-lands> (describing land units).

²¹ WASH. REV. CODE §§ 90.48.030 (jurisdiction under Water Pollution Control Act), 90.58.020 (Shoreline Management Act findings).

²² Cherokee Nation v. Georgia, 30 U.S. 1, 17 (1831).

based on geography, treaty status, treaty language, and other factors. A comprehensive evaluation of tribal authority related to blue carbon projects therefore would require intensive analysis that would be beyond the scope of this study. Instead, this study attempts to highlight key legal issues relevant to tribal authority and considers the laws of the Tulalip Tribes of Washington as an example of how these general principles may play out in practice.

The scope of the analysis presented here is necessarily limited in substantive breadth as well as geography. First, this analysis focuses only on key provisions of applicable legal authority that relate directly to the legality of offset activities. The vast potential array of project designs, environmental contexts, effects on non-governmental agencies, and interpretation of these factors by decision-makers precludes any attempt at a comprehensive overview. To avoid missing authority that is important in the context of a particular project and to focus on those issues that are most directly relevant, this analysis avoids any attempt at completeness.

Second, the analysis focuses on the legality of offset projects *from the perspective of land management agencies*. That is, it considers whether government land management agencies are authorized by law to participate in blue carbon offset projects on their land independent of permitting. Thus, this analysis largely excludes detailed analysis of wetlands permitting or other environmental planning and permitting requirements. This limitation recognizes that wetlands restoration—including blue carbon offset projects—is consistent with the goals and requirements of wetlands protection law. Approval of projects under these laws may be lengthy and challenging in particular instances, and careful project design and consultation is needed to ensure that these permits issue in a timely and effective manner. However, this analysis presumes that restoration projects are capable of approval under these conditions.

Third, this analysis does not address community partnerships or associated liability in blue carbon offset projects. The success of carbon offsets projects often turns not only on legal authority of the government land manager, but on factors such as acceptance and participation by abutting private landowners or unrelated agencies (e.g., Departments of Transportation for culvert replacement).²³ These factors are extremely complex, highly location-, jurisdiction-, and project-specific, and may turn on personal, political, or financial considerations rather than legal authority. This analysis therefore avoids speculating or generalizing about these factors in this study.

Finally, this analysis does not evaluate potential conformity of blue carbon projects on public lands to specific carbon offset standards. At least one prior assessment has assessed whether and how particular types of public lands projects interface with specific standards.²⁴ This study does not attempt a similar assessment, as results may differ based on the provisions of various voluntary and regulatory offset market standards. Instead, this study focuses on the authority of government regulators to enter into transactions that meet relevant, generally-applicable offset principles, as set forth below.²⁵

²³ See, e.g., *Herring River Tidal Restoration Project*, NPS CAPE COD NATIONAL SEASHORE, <https://www.nps.gov/caco/learn/nature/herring-river-tidal-restoration-project.htm> (describing project complexity).

²⁴ SMITH, *supra* note 5 (assessing forestry projects under Climate Action Reserve standard).

²⁵ While demonstration of real sequestration under applicable standards and methodologies in blue carbon offset projects on public lands may pose practical challenges, this issue is unlikely to pose legal hurdles as public land management agencies have broad authority to engage in restoration activities, as discussed in part 5.2 below. In addition, this study assumes that transactions can assure access to public lands for verification purposes. If carbon rights can be transferred to private entities by governments, those governments surely also will be authorized to provide guaranteed access to private sites for monitoring and verification. See *id.* (“verification of GHG reductions resulting from federal forestlands need not be problematic”).

- *Additionality*: “GHG reductions must be additional to any that would have occurred in the absence of . . . a market for GHG reductions.”²⁶
- *Permanence*: “[A]ny net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.”²⁷
- *Unambiguous ownership*: “No parties other than the registered project developer must be able to reasonably claim ownership of the GHG reductions.”²⁸

These principles are addressed where appropriate in the sections that follow.

3 Blue Carbon Offsets: Overview

Coastal wetlands are valuable, but threatened, habitats that require investment in restoration and long-term maintenance. Coastal wetlands, such as mangroves, tidal salt marsh, and seagrass, provide a range of benefits to society, such as flood protection, supporting sustainable fisheries, and improving water quality by filtering water pollution.²⁹ However, sea level rise, land use conversion, and other problems are causing the loss and degradation of coastal wetlands, undermining the ecosystem services and other benefits they provide to society.³⁰ Maintenance and restoration of coastal wetlands therefore are needed to protect and enhance these habitats today and in the decades to come.³¹

Carbon offsets can be an important tool for coastal wetland restoration funding. While a variety of grants and funding sources support coastal wetlands restoration,³² these sources may not meet restoration project needs.³³ Proponents therefore may need to identify alternative or supplemental funding sources for restoration projects to succeed. A variety of arrangements, broadly known as “payments for ecosystem services” (PES),³⁴ can provide funding for restoration through market mechanisms. This study focuses on one type of PES: the carbon offset. Kollmuss et al. describe carbon offsets as follows: “By paying someone else to absorb or avoid the release of a tonne of CO₂ elsewhere, the purchaser of a carbon offset can aim to compensate for or, in principle, ‘offset’ their own emissions.”³⁵ In the wetlands context, carbon offsets allow external funders to pay for restoration activities that sequester carbon.

²⁶ *Id.* at 5-6.

²⁷ *Id.* at 6.

²⁸ *Id.*

²⁹ T.E. DAHL & S.M. STEDMAN, U.S. FISH AND WILDLIFE SERV. & NAT’L MARINE FISHERIES SERV., STATUS AND TRENDS OF WETLANDS IN THE COASTAL WATERSHEDS OF THE CONTERMINOUS UNITED STATES 2004 TO 2009 6 (2013).

³⁰ Elizabeth McLeod et al., *A Blueprint for Blue Carbon: Toward an Improved Understanding of the Role of Vegetated Coastal Habitats in Sequestering CO₂*, 9 FRONTIERS IN ECOL. & ENV’T 552 (2011)

³¹ See Kevin L. Erwin, *Wetlands and global climate change: the role of wetland restoration in a changing world*, 17 WETLANDS ECOL. MGMT. 71 (2008) (discussing long-term restoration and management needs for wetlands in a changing world).

³² See ENVTL. PROTECTION AGENCY, *Federal Funding for Wetlands*, <https://www.epa.gov/wetlands/federal-funding-wetlands> (listing funding sources).

³³ Lau, *supra* note 2, at 5 (“[A] common and frequent barrier to achieving full effectiveness and wider adoption of [marine and coastal resource management] tools is the lack of adequate financing.”)

³⁴ Definitions of PES are disputed, but include “(1) voluntary transactions (2) between service users (3) and service providers (4) that are conditional on agreed rules of natural resource management (5) for generating offsite services.” Sven Wunder, *Revisiting the concept of payments for environmental services*, 117 ECOL. ECON. 234, 241 (2015).

³⁵ ANJA KOLLMUSS, HELGE ZINK & CLIFFORD POLYCARP, STOCKHOLM ENVIRONMENT INSTITUTE & TRICORONA, [MAKING SENSE OF THE VOLUNTARY CARBON MARKET: A COMPARISON OF CARBON OFFSET STANDARDS](#) 1 (2008).

Coastal wetlands have significant carbon offset potential. Wetlands are important carbon sinks: up to 40% of their soils may be carbon, and they hold 20-30% of all soil carbon on the planet.³⁶ Coastal wetlands thus absorb a substantial amount of atmospheric carbon and sequester this “blue carbon” for long periods.³⁷ Because of their effectiveness in sequestering carbon, coastal wetlands can offset substantial amounts of carbon, providing a strong economic basis for offset projects.³⁸ However, a metanalysis suggests that “blue carbon projects are not usually commercially attractive propositions” for purely private investment due to “institutional, administrative, and financial constraints.”³⁹ As a result, blue carbon projects are most likely to be attractive when project partners are motivated not only by a project’s climate mitigation benefits, but also by co-benefits such as habitat conservation, fisheries enhancement, or water pollution control.⁴⁰ Projects to restore publicly-owned coastal wetlands fit these conditions, as government agencies’ motivations extend beyond profit and include co-benefits produced by restoration.

Demand for carbon offsets may result from mandatory or voluntary controls on greenhouse gas emissions.⁴¹ Mandatory programs, also known as “compliance markets,” are created by legal authorities that establish cap-and-trade programs or otherwise require entities to offset certain greenhouse gas emissions.⁴² For example, the California Emissions Trading Program (ETP), established under the California Global Warming Solutions Act of 2006,⁴³ creates a cap on emissions by covered entities, but allows these entities to offset up to 8% of their compliance obligations through independently verified projects using approved protocols.⁴⁴ While efforts to develop an approved protocol for blue carbon projects under the California ETP were reportedly underway in 2014,⁴⁵ the state has not approved such a protocol to date,⁴⁶ so blue carbon projects cannot participate in this offset market to date. Studies suggest that blue carbon projects are also ineligible or limited in other compliance markets.⁴⁷ As a result, voluntary markets appear to be the primary mechanism for blue carbon offset projects at this time.

Voluntary offsets are not required by law. Instead, voluntary markets “cater[] to individuals, companies or governments who seek to buy carbon credits to voluntarily offset their own greenhouse-gas emissions although many of the participants in the voluntary market are buying credits in anticipation of

³⁶ A.M. Nahlik & M.S. Fennessy, *Carbon Storage in US Wetlands*, 7 NATURE COMM. 13835, doi: 10.1038/ncomms13835, at 2 (2016), citing WETLAND SOILS (M. J. Vepraskas & C. B. Craft, eds., 2d ed. 2016).

³⁷ See generally Mcleod et al., *supra* note 1 (reviewing importance of blue carbon in sequestering carbon).

³⁸ Sebastian Thomas, *Blue Carbon: Knowledge Gaps, Critical Issues, and Novel Approaches*, 107 ECOL. ECON. 22, 30-31 (2014) (“Preliminary biophysical and economic analysis of net present values (NPV) . . . of blue carbon resources globally suggests that protection might be viable at moderate carbon prices . . . and yield substantial positive mitigation and adaptation outcomes.”).

³⁹ *Id.* at 32.

⁴⁰ *Id.*

⁴¹ See generally Marco Kerste, Jarst Weda & Nicole Rosenboom, SEO ECON. RES., [CARBON TRADING: LITERATURE OVERVIEW](#) (2010) (providing overview of carbon markets).

⁴² See Ullman et al., *supra* note 4, at 15 (“a central authority sets a limit, or cap, on the amount of a greenhouse gas that can be emitted, and the cap is allocated or sold to entities in the form of credits which represent the right to emit a specific volume of the gas. The emitting entities are required to hold a number of credits equivalent to their actual emissions, and the total amount of existing credits cannot exceed the cap. Entities may then trade credits among themselves if they need to increase their emissions or have been able to reduce emissions.”).

⁴³ A.B. 32, 2006 Cal. Stat. ch. 488, CAL. HEALTH & SAFETY CODE § 38500 *et seq.*

⁴⁴ CAL. CODE REGS. tit. 17, §§ 95800-96022; see also *Compliance Offset Program*, CAL. AIR RES. BOARD, <https://ww3.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>.

⁴⁵ Ullman et al., *supra* note 4, at 16.

⁴⁶ *Compliance Offset Program*, CAL. AIR RES. BOARD, <https://ww3.arb.ca.gov/cc/capandtrade/offsets/offsets.htm> (listing approved protocols).

⁴⁷ Lindsay Wylie, Ariana E. Sutton-Grier & Amber Moore, *Keys to Successful Blue Carbon Projects: Lessons Learned from Global Case Studies*, 65 MARINE POL’Y 76, 83 (2016).

future compliance markets.”⁴⁸ Voluntary markets standards currently recognize blue carbon projects, allowing them to generate offsets. For example, the Verified Carbon Standard (VCS) recognizes “Wetlands Restoration and Conservation” (WRC) as an eligible project category, including for both “restoring wetlands ecosystems” and “conservation of intact wetlands.”⁴⁹ No WRC projects have been completed to date in the United States, although projects in terrestrial wetlands habitats—notably, bottomland hardwood areas of the lower Mississippi River valley—have occurred under the VCS afforestation project category.⁵⁰ Future WRC projects will need to conform to all applicable VCS requirements, such as demonstrating that they have the legal right to control and implement restoration activities⁵¹ and to ensure that the promised sequestration benefits are achieved over time (permanence).⁵² This study focuses on voluntary blue carbon offset projects, although the considerations discussed below would likely remain relevant in the context of a mandatory offset program.

4 Past Projects on Public Lands

Blue carbon offset projects may have their greatest impact on public lands for several reasons. First, as noted previously, economic studies indicate that blue carbon offsets are most justifiable when co-benefits are valued in addition to financial benefits, a condition that may not apply to private conservation agreements.⁵³ Indeed, many of the past afforestation projects registered under the VCS or other voluntary standards have occurred on NWR lands or inholdings.⁵⁴ Second, governments have robust ownership interests in coastal wetlands. Federal, state, and tribal governments own a substantial proportion of the upland coastal wetlands in the United States.⁵⁵ As discussed in section 5.1 below, states also own submerged and intertidal lands and manage these areas in the public trust. As a result, governments can be expected to be necessary partners in future blue carbon offset projects.

While no blue carbon offset projects on public lands were identified in the research for this project, past afforestation offset projects on public lands can illustrate how governments have structured carbon offset projects in a similar context. Research for this study identified several offset projects conducted in partnership with the FWS and a few projects with tribal governments,⁵⁶ but none with NPS or other

⁴⁸ Ullman et al., *supra* note 4, at 16.

⁴⁹ VERRA, [VCS STANDARD](#) 58-59 (v.4.0, 2019).

⁵⁰ See, e.g., DAVID SCHOCH ET AL., THE NATURE CONSERVANCY, [BAYOU BARTHOLOMEW PROJECT: VCS PROJECT DESCRIPTION](#) (2011) (describing project in bottomland hardwood habitat).

⁵¹ *Id.* §§ 3.6

⁵² *Id.* § 3.2.11 (“WRC projects shall demonstrate that the permanence of their soil carbon stock will be maintained. The maximum quantity of GHG emission reductions that may be claimed by the project is limited to the difference between project and baseline scenario after a 100-year time frame . . .”).

⁵³ See *supra* note 40 and accompanying text. Projects on private lands may meet these conditions in some cases, as where lands are owned by conservation organizations. However, these instances may be distinguished from offset projects implemented purely for entrepreneurial motives, as is common in wetlands mitigation banking. See Elan L. Spanjer, *Swamp Money: The Opportunity and Uncertainty of Investing in Wetland Mitigation Banking*, 113 Nw. U. L. REV. 371, 387 (2018) (noting private investment driver for growth of wetlands mitigation banking market: “An influx of capital investment into bank development has fueled the growth of mitigation banking activity, as investors and entrepreneurs have flocked to the market with hopes of capturing a share of the estimated \$1.3-\$2.2 billion annual market for wetland mitigation credits.”).

⁵⁴ See, e.g., THE CONSERVATION FUND, [RESTORING A LEGACY AT RED RIVER NATIONAL WILDLIFE REFUGE](#) (2009) (describing afforestation project on inholdings within Red River NWR pursuant to Climate, Conservation & Biodiversity Standards); JAMES M. EATON ET AL., TERRACARBON, [REFORESTATION ACROSS THE LOWER MISSISSIPPI VALLEY](#) (2011) (describing VCS project conducted exclusively on federal and state public lands).

⁵⁵ Rebecca Epanchin-Niell et al., *Threatened Protection: Sea Level Rise and Coastal Protected Lands of the Eastern United States*, 137 OCEAN & COASTAL MGMT. 118 (2017).

⁵⁶ Yurok Tribe, *Yurok Tribe Sustainable Forest Project*, California Air Resources Board Project CAFR0064, <https://ww3.arb.ca.gov/cc/capandtrade/offsets/earlyaction/projects.htm> (database of listed early action projects).

federal agencies or with state governments. The small number of past offset projects identified have been structured in two ways: (i) projects on private lands that are subsequently transferred to public or tribal ownership; and (ii) projects on lands already owned by the public or tribe. This section describes the structure of selected transactions, which are likely models for future transactions involving public lands, including coastal wetlands, as well as compensatory mitigation projects on state wetlands, which may be a useful model for future state blue carbon offset projects.

4.1 Afforestation Offset Projects on National Wildlife Refuge Lands

FWS has been involved in carbon offset projects since 1998.⁵⁷ “Early in the Service’s carbon sequestration program, partners simply restored natural vegetation on highly degraded lands already owned by the service.”⁵⁸ More recently, however, FWS has partnered with energy companies who fund restoration of privately-owned lands and donate them to the Service with funding for maintenance while retaining the carbon offsets generated by the project.⁵⁹ As of 2010, FWS claimed that such transactions in the lower Mississippi River valley had added more than “40,000 acres of habitat to the National Wildlife Refuge System and restored more than 80,000 acres with more than 22 million trees, sequestering 30 million metric tons of carbon over ... [a] 70-year [period].”⁶⁰ These transactions indicate the potential scale of offset transactions on federal lands.

The “Tensas River National Wildlife Refuge Afforestation Project” is a good example of how offset projects have been structured on private lands. This project began when a timber company sought to sell about 11,000 acres of land around the Refuge.⁶¹ FWS could not afford the asking price, so the Trust for Public Land (TPL) agreed to buy the tract and convey it piecemeal to FWS.⁶² TPL purchased the land with funding from investors including energy companies (Entergy Corporation, Detroit Edison), foundations (National Fish and Wildlife Foundation), and a voluntary offset re-seller (Carbonfund.org).⁶³ TPL contracted with Environmental Synergy, Inc to restore the tracts, then sought to transfer them to FWS, with carbon rights retained by investors for 99 years.⁶⁴ Carbonfund.org then certified the amount of greenhouse gas benefit on certain lands under the Climate, Community, and Biodiversity Standard (CCBS).⁶⁵ Thus, the project leveraged investment by investors seeking to offset emissions to fund acquisition and restoration of lands then transferred to the public for long-term stewardship.

The legal structure of the Tensas River NWR transaction was designed to satisfy the needs of carbon markets. The three parties to the transaction—FWS, TPL, and Carbonfund.org—signed two Memoranda of Agreement (MOA)—one for each of two tracts involved⁶⁶—establishing Carbonfund.org’s legal rights to the carbon offset, necessary project approvals, and other content.⁶⁷ Unfortunately, the text of these MOAs is not publicly available, nor are similar documents for similar transactions. However, comments

⁵⁷ ERKIN ÖZBERK & BRIAN MCFARLAND, CARBONFUND.ORG, [TENSAS RIVER NATIONAL WILDLIFE REFUGE AFFORESTATION PROJECT](#) 34 (2009)

⁵⁸ FWS, [CARBON SEQUESTRATION: RESTORING NATIVE WILDLIFE HABITAT AND CAPTURING CARBON](#) 2 (2010).

⁵⁹ *Id.*

⁶⁰ FWS, [RISING TO THE URGENT CHALLENGE: STRATEGIC PLAN FOR RESPONDING TO ACCELERATING CLIMATE CHANGE](#) 9 (2010).

⁶¹ Bill O’Brian, FWS, *Leadership with a Capital P (Perseverance)* (Apr. 12, 2011), https://www.fws.gov/refuges/refugeupdate/MarchApril_2011/capitalp.html

⁶² *Id.*

⁶³ ÖZBERK & MCFARLAND, *supra* note 57, at 6.

⁶⁴ *Id.* at 7.

⁶⁵ *Id.* at 4.

⁶⁶ *Id.* at 22.

⁶⁷ *Id.* at 34-36.

from TPL indicate that the MOAs serve critical functions from an offset market standpoint, including that:

- afforestation prior to government acquisition avoids potential financial and legal requirements that threaten additionality;
- federal ownership of the land subject to management requirements in the MOA provides permanence;
- the MOA requires FWS to allow TPL to access the site to conduct measurement, monitoring, and verification, including for replanting as needed to avoid reversals.⁶⁸

Some carbon offset projects have occurred on lands already within NWRs. For example, Entergy Corporation submitted a project entitled “Restoration of Bottomland Hardwood Forests at National Wildlife Refuges in the South Central US” to the American Carbon Registry in 2011.⁶⁹ The project restored planted areas of four NWRs in Arkansas and Louisiana, some but not all of which were in the Refuge system prior to the project.⁷⁰ Carbon offset rights were claimed by Entergy, and other project partners acknowledged and agreed not to claim the carbon rights, via a series of MOAs for each Refuge.⁷¹ While the complete MOAs are not available to the public, the project documentation includes excerpts, including the following language for lands in Overflow NWR owned by FWS prior to the project:

“This Agreement documents the understanding of the parties regarding the transfer of the Acquired Reforestation Tract to the Service, the planting and management of the Acquired Reforestation Tract, management of the Refuge Reforestation Tract by the Service, and the donations made and to be made by Entergy and The Conservation Fund under the Fish and Wildlife Act of 1956. The donations from Entergy are made expressly subject to the condition that Entergy reserves the right to report and may report, on its behalf and for its affiliates, sequestered carbon associated with the trees planted on the Acquired Reforestation Tract and the Refuge Reforestation Tract.”⁷²

This language provides conclusory evidence regarding the structure of the carbon rights arrangement on both existing Refuge lands and acquired lands to be newly added to the Refuge system. However, the excerpted language does not contain sufficient detail on the authority for FWS action to enable a meaningful assessment of how this agreement was structured and its relationship to legal limitations on FWS actions. However, the MOA was signed by FWS and thus suggests that the Service and its counsel were satisfied by the legality of this transaction.

4.2 Compensatory Mitigation on Public Wetlands

Compensatory mitigation may be a useful analogue for future carbon offset projects on state wetlands. Section 404 of the federal Clean Water Act (CWA) requires a permit from the U.S. Army Corps of

⁶⁸ Public Comment by Jad Daley, Climate Conservation Program Director, TPL, regarding Climate Action Reserve White Paper: Forest Offsets on Federal Lands (July 18, 2012), <http://www.climateactionreserve.org/wp-content/uploads/2011/02/Federal-Lands-White-Paper-Public-Comment-TTPL.pdf>.

⁶⁹ TERRACARBON LLC, ENTERGY CORP., RESTORATION OF BOTTOMLAND HARDWOOD FORESTS AT NATIONAL WILDLIFE REFUGES IN THE SOUTH CENTRAL US (2011) (on file).

⁷⁰ *Id.* at 19.

⁷¹ *Id.* at 79-80. Lands later added to the Red River NWR were transferred by contract to which FWS was not a party. Other transactions used MOAs signed by FWS. *Id.*

⁷² *Id.* at 80.

Engineers (USACE) to discharge “dredge or fill” material into wetlands.⁷³ “In order for a project to be permitted, it must be demonstrated that, to the extent practicable: steps have been taken to avoid impacts to wetlands and other aquatic resources, potential impacts have been minimized, and compensation will be provided for any remaining unavoidable impacts.”⁷⁴ Compensation may take four forms: (i) restoration of an existing wetland; (ii) enhancement of an existing wetland; (iii) establishment of a new wetland; or (iv) preservation of an existing wetland.⁷⁵ Compensatory mitigation can be provided through: “permittee-responsible compensatory mitigation, mitigation banks and in-lieu fee mitigation.”⁷⁶ These mechanisms—and particularly mitigation banks—are structured in a similar manner to carbon offset projects described above.

Federal compensatory mitigation projects may be located on public lands, despite criticisms of this structure. Commentators have noted critiques of mitigation projects on public lands based on unfair competition with private mitigation banks and additionality failures because the public wetlands are expected to be conserved without the mitigation funding.⁷⁷ USACE and EPA rejected these arguments and declined to limit compensatory mitigation on public lands.⁷⁸ “As long as mitigation banks or in-lieu fee projects established on public lands provide environmental benefits over and above what normal management activities provide, there should be no conflict. Credits secured by private developers can provide a source of income for public entities to conduct . . . activities that could not be done under their current budgets.”⁷⁹ The rule also declined to require governments to provide long-term financing for all mitigation sites, though it noted that financing will often be required in practice.⁸⁰ Thus, federal rules endorse compensatory mitigation as a valuable conservation tool that provides wetland management benefits that otherwise would not arise. However, additional policy development may be needed to clarify when and how mitigation is allowed on public lands, such as by excluding the value of public land to ensure parity with mitigation on private land.⁸¹

States also endorse compensatory mitigation on public lands. Many states have established their own requirements requiring compensatory mitigation and authorizing mitigation banking.⁸² These statutes authorize compensatory mitigation on some public lands. For example, Florida law directs “the department [of environmental protection] and the water management districts . . . to participate in and

⁷³ 33 U.S.C. § 1344.

⁷⁴ SANDRA S. NICHOLS, JARED THOMPSON & JESSICA WILKINSON, ENVIRONMENTAL LAW INSTITUTE, *THE FEDERAL WETLAND PERMITTING PROGRAM: AVOIDANCE AND MINIMIZATION REQUIREMENTS 1* (2012).

⁷⁵ Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594, 19,594 (Apr. 10, 2008).

⁷⁶ *Id.*

⁷⁷ Harold Levral, Pierre Scemama & Anne-Charlotte Vaissiere, *Should We Be Wary of Mitigation Banking? Evidence Regarding the Risks Associated with this Wetland Offset Arrangement in Florida*, 135 *ECOL. ECON.* 136, 146 (2017).

⁷⁸ Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19,594, 19,632 (Apr. 10, 2008) (“We believe it is appropriate, in some instances, to site compensatory mitigation projects on public lands, where they are consistent with the use and management of the public land, and the credits are based solely on aquatic resource functions provided by the compensatory mitigation project, over and above those provided by public programs already planned or in place.”). Other agencies, such as NOAA, may limit mitigation on public lands under separate policies to ensure parity with mitigation on private land and other reasons.

⁷⁹ *Id.* at 19,649.

⁸⁰ *Id.* at 19,649 (“In cases where compensatory mitigation project sites are owned by public entities, it may not be necessary to include provisions for the financing of any required long-term management if, for example, a formal, documented commitment from a government agency is provided.”).

⁸¹ See MARTIN DOYLE ET AL., [COMPENSATORY MITIGATION ON FEDERAL LANDS](#), Duke Univ. Nicholas Inst. Pub. NI R 20-02 (2020) (reviewing federal agency authority and practice for compensatory mitigation on public lands and recommending actions to improve program implementation).

⁸² See, e.g., LA. STAT. § 49:214.41; FL. STAT. § 373.4135; WASH. REV. CODE ch. 90.84.

encourage the establishment of private *and public* mitigation banks and offsite regional mitigation.”⁸³ While authorizing compensatory mitigation on public lands, the statute also limits agency authority to conduct compensatory mitigation for projects for other entities⁸⁴ and provides requirements for what must be included in MOAs establishing mitigation projects on public lands.⁸⁵ Thus, state legislatures have provided explicit authority for this activity that is tailored to specific concerns about its use on public lands—authority which is absent in the carbon offset context, as described in section 5.2 below.

Carbon offsets, unlike federal and state wetlands compensatory mitigation, lack explicit statutory authority. In the absence of such authority, the Bureau of Land Management (BLM) issued a policy in 2018 disclaiming authority to conduct compensatory management on its lands pursuant to the Federal Lands Policy and Management Act (FLPMA).⁸⁶ Recent work by Justin Pidot, however, has challenged this conclusion as a matter of law, noting that BLM has ample authority to engage in compensatory mitigation on its lands under the general mandates provided in FLPMA.⁸⁷ In the absence of explicit statutory authority for carbon offsets on public lands, offset projects occupy a position similar to compensatory mitigation under FLPMA, such that the legal status of these projects may be uncertain. The next section considers legal principles affecting whether and how blue carbon offsets may be legally authorized in the absence of explicit statutory authority.

5 Legal Challenges Affecting Blue Carbon Offset Projects on Public Lands

This section discusses six potential legal hurdles to the successful implementation of blue carbon offset projects on publicly-owned coastal wetlands. These include: (i) who has title to the project site; (ii) whether property boundaries will change during the project period; (iii) whether severed or competing property interests exist on the site; (iv) whether the responsible agency is authorized by statute to undertake or participate in blue carbon projects on coastal wetlands; (v) whether and how agencies can accept donations of money, land, and labor necessary for blue carbon transactions to occur; and (vi) whether agencies can transfer carbon rights generated by offset programs to private entities. The answers to these questions may differ for federal, state, and tribal governments and agencies and for different transaction structures. Therefore, this section presents an overview of the legal principles affecting each of these issues, how they may interact with blue carbon offset projects, and offer examples from the agencies discussed in section 1 above.

5.1 Title and Property Rights

In order to conduct a blue carbon project on publicly-owned coastal wetlands, the responsible government must have the legal title to the project site and the right to carry out the project in a manner consistent with the requirements of the carbon markets. Issues of title can be complex for coastal wetlands, which often straddle property boundaries, where property boundaries move over time, and where public rights to property may be limited. This section evaluates how these property

⁸³ FL. STAT. § 373.4135 (emphasis added) (“The Legislature intends that the provisions for establishing mitigation banks apply equally to both public and private entities, except that the rules of the department and water management districts may set forth different measures governing financial responsibility, and different measures governing legal interest, needed to ensure the construction and perpetual protection of a mitigation bank.”).

⁸⁴ *Id.* § 373.4135(1)(b) (providing that, except in listed circumstances, “a governmental entity may not create or provide mitigation for a project other than its own unless the governmental entity uses land that was not previously purchased for conservation and . . . provides the same financial assurances as required for mitigation banks.”)

⁸⁵ *Id.* § 373.4135(6).

⁸⁶ See Justin Pidot, *The Bureau of Land Management’s Infirm Compensatory Mitigation Policy*, 30 FORDHAM L. REV. 1, 2n.3 (2019) (linking to now-removed website, cached at <https://perma.cc/AFT4-YSKK>).

⁸⁷ *Id.*; see also Justin Pidot, *Compensatory Mitigation and Public Lands*, B.C. L. REV. (forthcoming), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3352902.

boundaries are delineated at the shore, how they change over time, and how competing property rights may hinder blue carbon projects on federal, state, and tribal lands.

5.1.1 Property Boundaries at the Shoreline

Public lands are held by the governments in trust for their citizens.⁸⁸ Governments exert broad authority over their lands as property owners; for example, the federal government enjoys “plenary power” over its lands under the U.S. Constitution.⁸⁹ However, government property powers do not apply beyond property boundaries. One of these boundaries is the high water mark at the shore, which, in most states, separates upland property from state property.

States hold legal title to submerged lands under statutory and constitutional law. The Submerged Lands Act (SLA) transferred title and most management authority over submerged coastal lands from the federal government to the states.⁹⁰ Under the SLA, states have “title to and ownership of the lands beneath navigable waters” from mean high tide to the seaward state boundary.⁹¹ States retain ownership of additional submerged lands under the “equal footing doctrine,”⁹² which vests them with title over the beds of navigable waters landward of the mean high water line and “waters subject to ebb and flow of the tide but that are not navigable in fact when they are indirectly influenced by the tides.”⁹³ Under these authorities, federal property ends at the mean high water line, where state property ownership begins. Thus, a coastal wetland under federal ownership that includes both uplands and submerged lands, such as a mangrove area, may include both federal and state property.

In some cases, the federal government may own submerged lands as a result of reservation prior to statehood or cession or dedication by the state after statehood. Under the equal footing doctrine, submerged lands clearly reserved by the federal government prior to statehood are not vested in the state upon statehood.⁹⁴ For example, Florida did not take possession of lands granted by Spain to private individuals prior to the Treaty of Cession between the U.S. and Spain in 1821, nor did it take lands validly conveyed by the federal government between that treaty and 1845, when Florida achieved statehood.⁹⁵ Similarly, the SLA excludes from state ownership any lands “all lands expressly retained by or ceded to the United States when the State entered the Union,” as well as acquired lands and certain other lands.⁹⁶ In some cases, the federal government may have retained submerged lands; for example, the Supreme Court held that the federal government retained the lands under Glacier Bay National Park prior to Alaskan statehood.⁹⁷ States may also cede or sell submerged lands back to the federal government after statehood, often as part of a public land preservation effort. For example, Florida

⁸⁸ See *U.S. v. Trinidad Coal Co.*, 137 U.S. 160 (1890).

⁸⁹ U.S. CONST. art. 2, cl.4; see *Pidot*, *supra* note 87 (discussing history of federal public lands management); *Collins v. Yosemite Park & Curry Co.*, 304 U.S. 518 (1938) (holding that national parks are federal enclaves).

⁹⁰ 43 U.S.C. §§ 1301-1315.

⁹¹ 43 U.S.C. §§ 1311, 1301 (definition of “lands beneath navigable waters”). The seaward state boundary is 3 nautical miles from the “coast line” except in Texas and the east coast of Florida, where it is 3 marine leagues from the baseline.

⁹² *U.S. v. Montana*, 450 U.S. 544, 551 (1981) (“[T]he ownership of land under navigable waters is an incident of sovereignty. As a general principle, the Federal Government holds such lands in trust for future States, to be granted to such States when they enter the Union and assume sovereignty on an “equal footing” with the established States. After a State enters the Union, title to the land is governed by state law.” (internal citations omitted)).

⁹³ 65 C.J.S. *Navigable Waters* § 120 (2019).

⁹⁴ *U.S. v. Montana*, 450 U.S. at 551-52 (discussing presumption against conveyance of submerged lands).

⁹⁵ Glenn J. MacGrady, *Florida’s Sovereignty Submerged Lands: What are They, Who Owns Them, and Where is the Boundary?*, 1 Fla. St. L. Rev. 596, 598 (1973).

⁹⁶ 43 U.S.C. § 1313.

⁹⁷ *Alaska v. U.S.*, 545 U.S. 75 (2005).

dedicated submerged lands for inclusion in Biscayne National Park in Florida,⁹⁸ and the state purchased and dedicated land for inclusion in Everglades National Park.⁹⁹ As a result, the property status of specific tracts of federal coastal wetlands requires careful consideration of title to determine the boundaries, if any, between federal and state lands.

Tribal property boundaries are also affected by the equal footing doctrine. In *U.S. v. Montana*, the Supreme Court held in 1981 that the state took title to the bed and banks of the Big Horn River within the Crow reservation upon statehood, such that the Crow nation cannot regulate hunting and fishing by non-Indians on these lands.¹⁰⁰ Courts have upheld tribal title to submerged lands within reservations in specific cases where the waters at issue were included in federal-tribal negotiations and treaties,¹⁰¹ but the court in *U.S. v. Montana* did not identify these factors in the Treaty of Fort Laramie, establishing the Crow Reservation:

Whatever property rights the language of the 1868 treaty created, however, its language is not strong enough to overcome the presumption against the sovereign's conveyance of the riverbed. The treaty in no way expressly referred to the riverbed, nor was an intention to convey the riverbed expressed in "clear and especial words," or "definitely declared or otherwise made very plain[.]"¹⁰²

Following the holding in *U.S. v. Montana*, the Ninth Circuit (west coast) established a 3-part test to determine whether treaties intended to reserve lands to the tribe. Under this test, the tribe will retain submerged lands "where a grant of real property to an Indian tribe includes within its boundaries a navigable water and the grant is made to a tribe dependent on the fishery resource in that water for survival, the grant must be construed to include the submerged lands if the Government was plainly aware of the vital importance of the submerged lands and the water resource to the tribe at the time of the grant."¹⁰³ Lands retained by tribes under this test may include those under both tidal and non-tidal waters.¹⁰⁴ Under these authorities, careful consideration of the treaty or other reserved rights of the tribe, tribal history, and U.S. government knowledge are critical factors in determining whether a particular tribe has title to submerged lands on or bordering its reservation, including coastal wetlands.

The 1855 Treaty of Point Elliott, which established the reservation for the Tulalip Tribes, provides a useful illustration of how tribal sovereignty over submerged lands has been evaluated under the 9th Circuit test. In *U.S. v. Aam*, the court resolved a claim to exclusive ownership of tidelands of the Port Madison Reservation by the Suquamish tribe under the treaty. It found that the treaty met the first prong of the test by including a grant of real property that includes navigable water. The treaty language does not reference submerged coastal waters, but does include coastal lands, islands, and a creek.¹⁰⁵ As this prong only requires the grant be capable of being interpreted to include submerged lands, the court

⁹⁸ NPS, BISCAYNE NATIONAL PARK, [FISHERY MANAGEMENT PLAN, FINAL ENVIRONMENTAL IMPACT STATEMENT](#) 207-08 (2014).

⁹⁹ ALICIA BURTNER, NPS, [MARJORY STONEMAN DOUGLAS WILDERNESS CORE ELEMENTS](#) 5 (2010).

¹⁰⁰ 450 U.S. 544 (1981)

¹⁰¹ *Choctaw Nation v. Oklahoma*, 397 U.S. 620 (1970); *Idaho v. U.S.*, 533 U.S. 262 (2001); *see also* AM. INDIAN L. DESKBOOK § 3:7.

¹⁰² 450 U.S. at 554 ("The mere fact that the bed of a navigable water lies within the boundaries described in the treaty does not make the riverbed part of the conveyed land, especially when there is no express reference to the riverbed that might overcome the presumption against its conveyance.").

¹⁰³ *U.S. v. Aam*, 887 F.2d 190, 194 (9th Cir. 1989), quoting *Puyallup Indian Tribe v. Port of Tacoma*, 717 F.2d 1251, 1258 (9th Cir. 1983).

¹⁰⁴ *Puyallup Indian Tribe*, 717 F.2d at 1258 (discussing cases involving submerged lands around islands, tidelands).

¹⁰⁵ Treaty of Point Elliott, art. 2, Mar. 8, 1859. The Treaty also reserves additional lands for the purpose of establishing an agricultural and industrial school, and this grant specifically reserves "Tulalip Bay." *Id.* at art. 3.

found this language sufficient even without an explicit reference to submerged lands.¹⁰⁶ However, the Court found that the second and third prongs were not met because the Suquamish has not established dependence on the fishery resource for survival or an understanding of that reliance by the U.S. The Treaty secured to the Tribe “[t]he right of taking fish at usual and accustomed grounds and stations . . . in common with all citizens” of the state,¹⁰⁷ and the court found that fishing in general was critical to survival. However, this survival depended not on the reservation-adjacent tidelands, but rather on fishery resources further afield.¹⁰⁸ Thus, it failed to meet the requirement “that the *disputed water resource* [i.e., the submerged lands adjacent to the reservation] supply a significant portion of the tribe’s fishery needs.”¹⁰⁹ It also held, given the guarantee of fishing rights in the Treaty, and in the absence of other evidence to the contrary, that the Government was unaware that inclusion of the tidelands was necessary to the Tribes.¹¹⁰ The result of this analysis was that the Suquamish claim to ownership of tidelands of the Port Madison reservation was denied. This holding does not bind the Tulalip Tribes not party to the litigation in *U.S. v. Aam*, but it suggests that the application of the 9th Circuit test to other tribal claims is likely to depend on factors beyond the treaty text, such as historical foodways or pre-Treaty disputes over the use of particular tidelands. Absent a judicial determination, tribal ownership of submerged lands is uncertain, and blue carbon projects involving these lands may avoid challenges by including state land agencies in project transactions.

5.1.2 Ambulatory Boundaries

Property lines at the shoreline are “ambulatory”—they move over time.¹¹¹ A variety of factors may affect the location of the mean high-water line, notably including erosion and sea level rise.¹¹² Thus, changes to the landscape caused by coastal dynamics may result in a change in the ownership of a particular geographic location. In other words, an area that today is an upland marsh within a NWR unit may be submerged state property in 50 years. These changes may pose a risk for blue carbon project permanence and for ambiguous ownership of carbon rights.¹¹³ For example, coastal wetlands may migrate beyond defined project boundaries (and potentially property boundaries) or convert from upland to submerged lands, transferring ownership to the state. The managing agency may not be able to address changes in title unless the state is a partner in the offset project and enters into legally-binding commitments to undertake needed management actions. These challenges may be less challenging for tribal lands where submerged areas are owned by the tribe—suggesting that, in these cases, projects on tribal lands may be more secure than those on federal lands.

5.1.3 Competing Property Rights

While many public lands are held by the government in fee simple, the government may own lesser rights in other lands. These lesser rights may take the form of limited property rights held by the government, such as easements, or encumbrances on public lands held by non-governmental entities,

¹⁰⁶ *U.S. v. Aam*, 887 F.2d at 195 (“the first *Puyallup* test should be understood to require only that the grant be capable of being interpreted to include the navigable waters within the reservation boundaries.”).

¹⁰⁷ Treaty of Point Elliott, art. 5, Mar. 8, 1859.

¹⁰⁸ *U.S. v. Aam*, 887 F.2d at 196-97.

¹⁰⁹ *U.S. v. Aam*, 887 F.2d at 196 (emphasis added).

¹¹⁰ *Id.* at 197-98.

¹¹¹ See Alyson C. Flournoy, *Beach Law Cleanup: How Sea-Level Rise has Eroded the Ambulatory Boundaries Legal Framework*, 42 VT. L. REV. 89 (2017).

¹¹² See AUDREY ELZEMAN, CONNECTICUT SEA GRANT, CENTER FOR LAND USE EDUCATION & RES., PROPERTY AND PERMITTING BOUNDARIES AT THE SHORELINE (2017) (discussing erosion, accretion, avulsion, and other factors affecting boundaries in changing environments under Connecticut law).

¹¹³ Ambulatory boundaries may also result in challenges during the permitting process. These issues are beyond the scope of this study.

such as mineral rights. The nature of government property rights and competing rights held by others may affect the ability of land management agencies to enter into blue carbon offset project agreements that meet carbon market requirements such as permanence and unambiguous ownership.

In many coastal areas, non-governmental entities have acquired leaseholds or mineral rights over submerged lands, giving rise to complicated questions of access and ownership.¹¹⁴ In particular, “split estates” involving private ownership of mineral rights (including oil and gas rights) on public lands are common, including on two-thirds of National Park Service units and more than 100 NWRs.¹¹⁵ For example, legislation authorizing South Padre National Seashore explicitly allowed severance and exploitation of mineral rights.¹¹⁶ In most cases, owners have the right to exploit mineral rights under state law—even when those rights are located under public lands.¹¹⁷ However, land management agencies also have authority to manage extractive activities, particularly in National Parks and NWRs established for conservation purposes.¹¹⁸ While the use of these authorities may result in tension and litigation, restrictions on the timing and location of resource extraction in areas inside blue carbon offset project boundaries may be necessary to ensure that mineral rights owners do not undertake activities that would threaten the permanence of sequestration. Moreover, depending on the nature of the property rights held by non-governmental entities, project proponents may need to ensure that these entities cannot claim property rights to any carbon sequestered as part of the project.¹¹⁹ Without such protections, exclusion of tracts with severed mineral rights may be needed to avoid reversals due to incompatible activities.

Property rights on tribal lands within reservations can be particularly complex. In general, Indian tribes are considered sovereign nations with plenary powers over tribal matters that are not subject to state law but are subject to federal government control.¹²⁰ The federal government has used its power over time in ways that complicate tribal lands management. Under the Dawes Act of 1877, the federal government established a policy of subdividing tribal lands held in common into allotments held by the federal government on behalf of individual tribal members.¹²¹ Lands not allotted or leased by the government were sold to non-Indians as “surplus,” resulting in a patchwork of ownership within the boundaries of reservations. While Congress repealed the Dawes Act in 1934 with passage of the Indian

¹¹⁴ See JIM WILKINS ET AL., LA. SEA GRANT COLLEGE PROGRAM, [PRELIMINARY OPTIONS FOR ESTABLISHING RECREATIONAL SERVICUTES FOR AQUATIC ACCESS OVER PRIVATE WATER BOTTOMS](#) 3-6 (2018) (discussing history and user conflicts related to submerged lands in coastal Louisiana).

¹¹⁵ Andrew C. Mergen, *Surface Tension: The Problem of Federal/Private Split Estate Lands*, 33 LAND & WATER L. REV. 419, 431-32 (1998); see also JAN G. LAITOS, ROCKY MTN. MINERAL LAW FOUND., LITERATURE REVIEW OF SEVERED MINERALS, SPLIT ESTATES, RIGHTS OF ACCESS, AND SURFACE USE IN MINERAL EXTRACTION OPERATIONS (2005).

¹¹⁶ 16 U.S.C. § 459d-3 (“[T]he Secretary shall permit a reservation by the grantor of all or any part of the oil and gas minerals in such land or waters and of other minerals therein which can be removed by similar means, with the right of occupation and use of so much of the surface of the land or waters as may be required for all purposes reasonably incident to the mining or removal of such from beneath the surface of these lands and waters.”).

¹¹⁷ States have some regulatory authority over federal lands within their boundaries. *Cal. Coastal Comm’n v. Granite Rock Co.*, 480 U.S. 572, 593 (1987). This authority may include resource extraction. Mergen, *supra* note 115, at 432-36 (discussing state law doctrines); James S. Burling, *Local Control of Mining Activities on Federal Lands*, 21 LAND & WATER L. REV. 33 (1986) (state law generally governs resource extraction on federal public lands).

¹¹⁸ Mergen, *supra* note 115, at 449-57 (discussing NPS and FWS authority and cases).

¹¹⁹ See Aaron M. Schutt, *ANCSA Section 7(i): \$40 Million Per Word and Counting*, ALASKA L. REV. 229, 268-69 (2016) (assessing whether carbon credits are part of timber resource); but see Matthew J. Lepore & Derek L. Turner, *Legislating Carbon Sequestration: Pore Space Ownership and Other Policy Considerations*, 40 COLO. LAWYER 61 (Oct. 2011) (noting that owner of surface estate generally assumed to have right to pore space for carbon sequestration).

¹²⁰ *Cherokee Nation v. Georgia*, 30 U.S. 1 (1831); AM. INDIAN L. DESKBOOK § 1:1 (explaining core tenets of American Indian law).

¹²¹ See Armen H. Merjian, *An Unbroken Chain of Injustice: The Dawes Act, Native American Trusts, and Cobell v. Salazar*, 46 GONZ. L. REV. 609, 614-18 (2011) (discussing history, purpose, and effects of allotment policy).

Reorganization Act (IRA), some lands continue to be held as allotments or trust lands by the federal government, such that the tribes are not free to use them without federal government consent.¹²² The IRA provided for tribal self-government through constitutions, which could authorize tribal control over the disposition of tribal property.¹²³ While not all tribes are covered by the IRA, many tribes, including the Tulalip Tribes, elected to be covered by the Act and are today governed under a tribal constitution.¹²⁴ These constitutions provide for multiple types of land tenure, including allotments, assignments of tribal land for use by individual tribal members, and community lands—i.e., tribal lands not otherwise assigned.¹²⁵ Community lands cannot be sold, but may be leased with the approval of the Secretary of Interior.¹²⁶ Thus, blue carbon projects on tribal wetlands may involve complicated determinations of land ownership as well as a requirement to obtain federal approval for any lease of all or part of those lands (e.g., carbon rights, see section 5.2.3 below).

Competing property rights to publicly-held coastal wetlands can raise hurdles related to permanence and ownership of carbon rights. The owner of property rights on public lands may have the right to perform activities on those lands inconsistent with sequestration. Alternatively, ownership of carbon rights produced on those lands may not be unambiguously held by either the land management agency or the owner of the mineral rights. Government authority over lands not held in fee simple therefore must be evaluated on a case-by-case basis to determine whether the government has the property rights needed to successfully carry out a blue carbon offset project and that the rights produced satisfy the requirements of carbon markets.

5.2 Legal Authority for Agency Action

In addition to property rights, land management agencies must have the statutory authority to carry out activities necessary for the completion of blue carbon projects on publicly-owned coastal wetlands. This section sets out key elements of the required legal authority, including (i) whether agencies are authorized to conduct the blue carbon project activities; (ii) whether they can accept donations; and (iii) whether they can transfer carbon rights away from public ownership.

5.2.1 Authority for Restoration

In most instances, statutes establish the standards and processes under which agencies are to manage public lands. Agencies cannot go beyond the authority provided by the legislature, but explicit authorization for them to conduct blue carbon projects is lacking. Agencies therefore must determine whether existing authority provides them with sufficient discretion to authorize blue carbon projects, or in the alternative whether more explicit authority is needed.

5.2.1.1 Federal Lands

In general, federal land management agencies have substantial discretion in managing lands under their control. They manage public lands, including wetlands, under “organic acts,” which provide general standards and authority, and site-specific legislation, which govern particular uses of individual land

¹²² *Id.*; see also 25 U.S.C. § 5101 (prohibiting allotment after 1934).

¹²³ 25 U.S.C. § 5123.

¹²⁴ AM. INDIAN L. DESKBOOK § 1:13; *History*, TULALIP TRIBES, <https://www.tulaliptribes-nsn.gov/WhoWeAre/History> (last visited Oct. 13, 2019).

¹²⁵ [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VIII.

¹²⁶ *Id.* art. VIII, §§ 2-3.

management units. Agency actions that are contrary to either type of statute are unlawful, but in most cases federal land management statutes are sufficiently broad to encompass blue carbon projects.¹²⁷

NPS has broad authority to engage in wetlands restoration under the Organic Act. The OA directs NPS to “conserve park resources while providing for their enjoyment, and ensure that all park resources are left ‘unimpaired for the enjoyment of future generations.’”¹²⁸ The OA does not define “unimpaired” or “conserve,” leaving NPS with “very broad management discretion under the statute.”¹²⁹ Indeed, courts have generally upheld NPS management decisions despite changes in the agency’s interpretation of the meaning of its mandate over time.¹³⁰ While not intended to support public recreation directly, activities intended to sequester carbon are likely to support both conservation and enjoyment of the parks, making them fully consistent with the OA. For example, the Verified Carbon Standard requires that wetlands projects restore degraded wetlands or conserve intact wetlands (consistent with conservation) and ensure continuous management over long time frames (consistent with the enjoyment of future generations).¹³¹ As a result, while the OA and NPS policies do not specifically address carbon offset generation on NPS-managed coastal wetlands, these activities do not appear to be foreclosed by the statute.

Like NPS, FWS has authority to participate in carbon offset projects. The NWRSA directs FWS to administer the NWR System “for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”¹³² Blue carbon offset projects are congruent with NWRSA directives, such as habitat conservation, biological integrity, and water quality.¹³³ Past afforestation offsets (see section 4.1) and incorporation of offsets in the 2010 FWS strategic plan on climate change¹³⁴ also suggest that FWS has viewed carbon offsets as consistent with NWRSA. However, carbon offset projects will likely require a location-specific determination of compatibility with Refuge purposes. The Service may permit any use of Refuge lands as long as “such uses are compatible with the major purposes for which such areas were established,”¹³⁵ and FWS can make compatibility determinations through the required conservation plan for each NWR planning unit.¹³⁶ Thus, the NWRSA appears to offer ample authority for FWS to conduct blue carbon offset projects on NWR lands

¹²⁷ See, e.g., Pidot, *supra* note 87 (discussing BLM discretion in the absence of explicit authority).

¹²⁸ Eric Biber & Elisabeth Long Esposito, *The National Park Service Organic Act and Climate Change*, 56 NAT. RES. J. 193, 205 (2016); see also 64 P.L. 235; 39 Stat. § 535; 64 Cong. Ch. 408 (Organic Act § 2) (“...promote and regulate the use of federal areas [by]...conserve[ing] ... the natural and historic monuments... by such means that will leave them unimpaired for the enjoyment of future generations.”).

¹²⁹ Biber & Esposito, *supra* note 128, at 229; see also *id.* at 204 (“the significant changes in the Park Service’s position over the years gives little basis to conclude that the Organic Act really does constrain management choices in a significant way.”).

¹³⁰ See *Utah Wilderness Alliance v. Dabney*, 222 F.3d 819, 826 (10th Cir. 2000) (reviewing challenge to NPS determination involving change in agency interpretation of “impairment”); Biber & Esposito, *supra* note 128, at 221-22 (reporting on survey of cases).

¹³¹ VERRA, *supra* note 49, at §§ A1.13 (“Eligible WRC activities are those that increase net GHG removals by restoring wetland ecosystems or that reduce GHG emissions by rewetting or avoiding the degradation of wetlands.”), 3.2.11 (“WRC projects shall demonstrate that the permanence of their soil carbon stock will be maintained. The maximum quantity of GHG emission reductions that may be claimed by the project is limited to the difference between project and baseline scenario after a 100-year time frame.”).

¹³² 16 U.S.C. § 668dd.

¹³³ *Id.* § 668dd(a)(4).

¹³⁴ FWS, *supra* note 60, at 28.

¹³⁵ *Id.* § 668dd(d).

¹³⁶ *Id.* § 668dd(e).

provided that the Service has made an explicit compatibility determination supporting this use in individual NWR planning units.

5.2.1.2 State Lands

All state public land management statutes identified in this study were silent on the use of lands for production of carbon offsets. As a result, the legality of blue carbon projects will turn on whether blue carbon project activities are consistent with more general land management mandates. Like their federal counterparts, state land management agencies have broad authority to manage lands under their jurisdiction for the benefit of the public, such that blue carbon projects will likely be viable under state public lands management requirements.

While state public lands agencies generally have broad authority, applicable laws do limit the uses of specific types of state lands. Some lands are managed under a permissive multiple-use paradigm; for example, Florida's "sovereignty lands" are to be managed to produce proceeds for the state, unless leased to a state agency for a more specific use.¹³⁷ Other lands must be managed for a specific primary purpose or set of purposes. For example, MassWildlife must administer wildlife sanctuaries "for the purpose of improving the feeding and nesting environment of birds or mammals."¹³⁸ Such conditions are particularly likely on state parks and other conservation lands, where blue carbon projects are likely to be consistent with management purposes because they are designed to provide a range of ecosystem benefits in addition to offsets for sale on carbon markets. However, some state lands may not be fully consistent with blue carbon projects if dedicated to uses other than conservation. For example, Florida allows lands to be designated for a single use "to the exclusion of all other purposes" that are not compatible with the primary purpose of the lands.¹³⁹ Blue carbon projects may not be compatible with some single-use management purposes, such as "production of food and livestock," and in such cases would require a change in management regime for a project to succeed.¹⁴⁰ Projects thus may be problematic on a few specific tracts, but they will likely be compatible with management frameworks covering most coastal wetlands.

As blue carbon projects are consistent with state lands management mandates, questions of authority for these projects are likely to devolve to permitting agencies that may need to approve specific components of blue carbon projects. In particular, projects in coastal wetlands are likely to require permits from wetlands regulators if they involve dredge or fill or structures in any tidal wetland. For example, Massachusetts law requires proponents to obtain a permit from the relevant municipal Conservation Commission before beginning any project covered by the Wetlands Act.¹⁴¹ Other, state-specific permitting regimes may also apply, such as Louisiana's requirement for a Coastal Use Permit from LDNR prior to activities that will directly or significantly affect coastal waters.¹⁴² The specific permits required, and the terms and conditions that may be applied, are highly project-specific and differ by jurisdiction.

While every state has its own permitting regimes and practices, none of these regimes appears to explicitly address permitting of wetland restoration projects financed through blue carbon offsets. As for

¹³⁷ FLA. STAT. § 253.03 ("It is the intent of the Legislature that the board of trustees continue to receive proceeds from the sale or disposition of the products of lands and the sale of lands of which the use and possession are not subsequently transferred by appropriate lease or similar instrument from the board of trustees to the proper using agency.").

¹³⁸ MASS. GEN. LAWS ch. 131, § 8.

¹³⁹ FLA. STAT. § 253.034.

¹⁴⁰ *Id.*

¹⁴¹ MASS. GEN. LAWS ch. 131, § 40.

¹⁴² LA. STAT. §§ 49:214.30, 214.23 (defining "use").

general management of state lands, permitting of coastal wetland restoration projects therefore will depend on the application of generally-applicable permitting requirements that are more commonly used for activities such as piers and coastal protection structures. Nonetheless, as noted in section 1, this study assumes that blue carbon projects will qualify for permitting because they improve and restore degraded wetlands and thus are consistent with the goals of permitting programs. For example, LDNR cannot issue a Coastal Use Permit for an activity unless it is “consistent with the agency’s coastal master plan for integrated coastal protection.”¹⁴³ The master plan, in turn, must adopt an integrated approach to coastal management that “The legislature has directed that plan be intended to “conserve, restore, create, and enhance wetlands and barrier shorelines or reefs in coastal Louisiana” in tandem with encouraging use of coastal resources.¹⁴⁴ Coastal wetland restoration projects that require a Coastal Use Permit will be able to demonstrate consistency with this goal, and thus with the plan, if they are appropriately sited and designed. Similarly, most projects will be able to demonstrate compatibility with permitting requirements under other permitting programs in other states.

Finally, the public trust doctrine presents additional limitations on state management of submerged lands that may be independent of statutory law and do not apply to federal or tribal land management. The public trust doctrine applies in every state and requires that all state-owned submerged lands be held in trust for public use.¹⁴⁵ As a result, states must manage submerged lands, including coastal wetlands, for the benefit of their citizens and cannot violate their citizens’ rights to use those lands for protected activities.¹⁴⁶ The boundaries of the areas subject to the public trust and the protected activities differ by state.¹⁴⁷ In most states, the boundary between private ownership and public trust lands is mean high water, but some states have established different standards. Boundaries of public trust waters do not necessarily track property boundaries—to the contrary, states including Massachusetts and Louisiana “extend public trust rights to the high-water mark even though they recognize upland private ownership down to the low-water mark.”¹⁴⁸ Similarly, private entities may own submerged lands due to pre-statehood grants, as noted above for Spanish grants in Florida. Protected uses generally include at least fishing, commerce, and navigation, but some states have expanded protections to cover other uses, which in Florida, Louisiana, and Massachusetts all include vague, but expansive protection of indeterminate uses.¹⁴⁹ States implement their public trust responsibilities through a variety of permitting standards—in Florida, for example, the legislature has determined that water bottoms must be “managed for the maintenance of essentially natural conditions.”¹⁵⁰ Similarly, Washington enacted the Shoreline Management Act to protect and manage its public trust areas.¹⁵¹ Thus, state public trust obligations may be integrated with permitting requirements, but careful review of applicable trust boundaries and protected uses may avoid hurdles arising from state public trust obligations.

¹⁴³ *Id.* § 49:214.30.

¹⁴⁴ *Id.* § 49:214.1.

¹⁴⁵ *Illinois Central R.R. Co. v. Illinois*, 146 U.S. 387 (1892) (establishing public trust doctrine); *Shively v. Bowlby*, 152 U.S. 1 (1894) (establishing equal footing doctrine, so that each state owns submerged lands and is subject to public trust doctrine on joining union); *Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469 (1988) (public trust applies to all submerged lands subject to tides).

¹⁴⁶ *Phillips Petroleum Co.*, 484 U.S. 469 (sale by state of mineral rights in submerged lands violates public trust).

¹⁴⁷ Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries*, 16 PENN. ST. ENVTL. L. REV. 1 (2007).

¹⁴⁸ *Id.* at 15.

¹⁴⁹ *Id.* at 18.

¹⁵⁰ *Id.* (“All submerged lands shall be considered single-use lands and shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation”).

¹⁵¹ WASH. REV. CODE ch. 90.58.

While the public trust doctrine imposes limits on the management of submerged lands, it does not appear to unduly hinder blue carbon-financed restoration projects on coastal wetlands. These projects do not generally involve alienation of trust lands, but rather at most transfer of a leasehold covering carbon rights, as discussed in section 5.2.3. Moreover, wetland restoration projects are unlikely to undermine public trust uses, as they enhance the value of fisheries resources and may also be compatible with additional uses, such as recreation. However, projects that require exclusion of the public from areas of the project site subject to the public trust may be incompatible with state trust obligations and may violate state land management and/or permitting law. Thus, accommodation of public trust uses in project design may be beneficial to ensure that projects satisfy both state trust obligations and carbon market requirements.

5.2.1.3 Tribal Lands

Tribal land management standards may be set out in tribal codes, constitutions, or treaties, but such authority does not appear mandatory. For example, while the Natural Resources Department manages wetlands on the Tulalip reservation in practice, its authority appears to devolve from the Tribes' Board of Directors, which has land management authority under the tribal constitution.¹⁵² Without codes delineating specific principles for land management, the authority of the Department is uncertain. Nonetheless, wetland restoration projects appear to be consistent with the limited existing law governing management of tribal lands. The constitution states that “[c]ommunity land which is not assigned, including community timber reserves, shall be managed by the board of directors for the benefit of the members of the entire community.”¹⁵³ Wetlands account for a substantial proportion of community land—according to the Natural Resources Department, wetlands account for 20% of the Tulalip Reservation, and 23% of all Tribal Trust land is wetland.¹⁵⁴ The Tribes value the community benefits provided by these wetlands, noting that they “enhance human quality of life by controlling flooding, filtering surface water runoff, recharging groundwater supplies, and providing fascinating habitat for education and recreation.”¹⁵⁵ While the Tribal Code does not explicitly set out how unassigned wetlands are to be governed, these varied purposes suggest that wetlands restoration is consistent with the requirement to manage lands for the benefit of the entire community, and the tribal Board of Directors, through the Natural Resources Department, likely has the authority to undertake blue carbon offset projects.

5.2.2 Authority to Accept Donations of Money and Land

Blue carbon offset projects require land managers to partner with non-governmental entities. The transactional relationships among project partners include donations by non-governmental entities to land management agencies as well as various forms of contractual transactions among private and governmental project partners. This section considers whether land management agencies are authorized to acquire or accept donations of money and land from private entities. Blue carbon offset projects structured as donations of land are likely to occur on “acquired lands,” while donations of money for maintenance of specific tracts may be used on acquired or existing public lands. The afforestation projects reviewed in section 4.1 provide useful examples of these structures. In these projects, private entities donated lands to FWS, while withholding carbon rights, and also donated funding to allow FWS to maintain the lands to ensure sequestration for the duration of the offset period. In these and similar projects, the transfer of the land and maintenance funds are effectively a donation,

¹⁵² [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VI, § 1.

¹⁵³ [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VIII, § 11.

¹⁵⁴ *Wetlands*, TULALIP TRIBES, <https://nr.tulaliptribes.com/Topics/Wetlands> (last visited Nov. 6, 2019).

¹⁵⁵ *Id.*

even if the government may commit to maintaining the lands in particular ways as a condition of the gift.

Most land management agencies have relevant authority allowing them to acquire lands and accept donations. However, the extent and conditions on acquisitions and gifts may differ by agency. Key questions related to agency authority to accept donations include:

- Can the agency accept donated money and land?
- Can donations be conditioned, such as by dedication to particular agency activities or sites?
- Is a quasi-governmental foundation available to accept donations?

In some instances, statutes constrain how agencies may accept donations and the activities for which they can use the donations, while in others, legislatures may provide multiple options for transfer of assets, such as a quasi-governmental foundation allowing obligation of funds. Blue carbon project partners can benefit from consideration of whether and how assets can be transferred during the project design stage to ensure that transactions adhere to any applicable legal conditions.

5.2.2.1 Federal Donations

NPS has broad authority to accept donations in multiple formats, allowing flexibility in the design of blue carbon offset projects. The Organic Act authorizes NPS to accept money “donated for the purposes of the System” and to accept donated land within existing park system boundaries (e.g., inholdings, severed estates).¹⁵⁶ In addition, the Act specifically authorizes NPS to “acquire by donation, purchase with donated funds, transfer from any other Federal agency, or exchange, land, water, or interests in land or water adjacent to the System unit.”¹⁵⁷ The Act also establishes the National Park Foundation, which may accept any “gift, devise, or bequest,” including interests in real property and gifts restricted to particular uses, so long as these donations do not “entail[] any expenditure other than from the resources of the Foundation.”¹⁵⁸ The Foundation has broad latitude in the use of these funds,¹⁵⁹ which would likely allow contributions specifically for use to support restoration and maintenance of specific project areas. Thus, NPS has the ability to accept a variety of donations itself and through a not-for-profit foundation that can enable provision of funding for long-term maintenance of specific areas, among other purposes.

FWS has more limited discretion to accept donations. The NWRSIA explicitly authorizes FWS to “[a]ccept donations of funds and to use such funds to acquire or manage lands.”¹⁶⁰ Thus, FWS can accept funding for land acquisition or management, but it appears to lack explicit authority to accept land without compensating the landowner. If so, this limitation could require that projects involving blue carbon offsets on newly-acquired lands be structured around donations of funding that are subsequently used to acquire the project site rather than through direct donation of lands by non-governmental entities. However, precedent projects, such as the Tensas River NWR project discussed in section 4.1, did involve the direct donation of lands by non-federal entities. As a result, FWS does appear to have authority to accept land donations in practice. A second difference lies in the absence of a foundation or ability to direct donations to particular FWS activities or sites. Thus, while NWRSIA provides ample authority for

¹⁵⁶ 54 U.S.C. § 101101.

¹⁵⁷ *Id.* § 100506(c)(1)(B).

¹⁵⁸ *Id.* § 101113.

¹⁵⁹ *Id.* § 101114.

¹⁶⁰ 16 U.S.C. § 668dd(b)(2). The Service can also acquire lands by exchange. *Id.* § 668dd(b)(3).

FWS to accept resources needed to accomplish blue carbon offset projects, it lacks specific powers that may be useful in some project scenarios.

5.2.2.2 State Donations

State agencies are generally authorized to accept donations of money and land. For example, Louisiana law allows OSP to accept and land, money, or other property “to be expended or used for establishing, developing, improving, or maintaining any office of state parks holding.”¹⁶¹ It can also acquire, by lease or otherwise, land (including water bottoms) for OSP holdings from the federal government or other entities.¹⁶²

Some but not all states have explicitly authorized dedication of donations for particular uses or sites. While the Louisiana OSP lacks explicit authority for such dedications, the commissioner of the Massachusetts DEM can receive “bequests, restitutions or gifts to be used for the purpose of advancing the recreational and conservation interests of the commonwealth.”¹⁶³ Such donations must be managed according to their terms, allowing them to be dedicated to particular sites and uses.¹⁶⁴ Such restrictions on terms may be important to ensure that donations remain associated with a blue carbon offset project tract rather than used for more general agency land management activities.

Some states also have established trusts or foundations that allow donations to be segregated from agency budgets, which may offer benefits for particular projects. For example, the Massachusetts DEM commissioner may also accept “gifts of land outside the urban park district to be held and managed for recreational and conservation purposes,” which are known as the Conservation Trust.¹⁶⁵ Where available, such trusts may have benefits and drawbacks for project partners (e.g., tax consequences, segregation of funds from agency budgets, limited authority to bind agency). While consideration of these benefits and drawbacks is beyond the scope of this study, availability of quasi-governmental land-management entities may be useful in the context of some projects.

Some states require that gifts be restricted to particular uses. For example, MassWildlife may accept donations of land or personal property with approval by the governor only for the purpose of “aiding in the propagation and protection of any useful fish, birds or mammals.”¹⁶⁶ Thus, MassWildlife would not be authorized to accept donations as part of blue carbon projects unless they benefit fish and wildlife. Wetland restoration projects financed with blue carbon offsets are likely to satisfy such requirements because they provide ecosystem services along with carbon sequestration. However, these restrictions could affect project design or require project proponents to document and ensure that benefits to fish and wildlife will result from project expenditures. Design of blue carbon offset projects in light of mandatory conditions on donations may ensure that eventual projects are consistent with agency mandates.

5.2.2.3 Tribal Donations

The Tulalip Tribes has broad authority to accept donations itself and through a dedicated fund. Under the Tribal Code, the Tulalip Tribes may accept nonprofit monetary and land donations for any lawful charitable or public purpose.¹⁶⁷ Under this authority, the tribes’ Board of Directors could itself accept

¹⁶¹ LA. STAT. 56:1687.

¹⁶² *Id.*

¹⁶³ MASS. GEN. LAWS ch. 132A, § 1.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ MASS. GEN. LAWS ch. 131, § 7.

¹⁶⁷ TULALIP TRIBAL CODES § 15.10.020.

monetary or labor donations in support of a blue carbon offset project. Alternatively, the Tulalip Tribes may establish a fund for the purpose of accepting and distributing gifts of monies or property for the public benefit of the Tribe.¹⁶⁸ Such a fund would act as a nonprofit organization that would lawfully “receive gifts and funds and distribute monetary funds or property donated by individuals or corporations for any lawful charitable or public purpose or purposes.”¹⁶⁹ Thus, third parties seeking to conduct blue carbon projects in partnership with the Tribes have multiple options for structuring agreements for transfer of required funding for specific uses.

Acceptance of land donations to the Tribes as part of a blue carbon offset project may require additional approvals. While the Tribal Code allows acceptance of donated land, consent from the Secretary of the Interior may be required under the Tribes’ constitution. Specifically, the tribal constitution provides that consent is required for the use of tribal funds “to acquire land” and that acquired lands must be within or adjacent to reservation boundaries.¹⁷⁰ As even acceptance of donated lands may require expenditure of tribal funds (e.g., for surveys, title search, and other assessments), consent from the Secretary may be required for projects involving donated land to proceed. Thus, blue carbon-financed wetland restoration projects may be authorized on lands to be subsequently transferred to the Tribes, such as allotment lands within a reservation, but federal involvement in these projects may be needed.

5.2.3 Authority to Transfer Carbon Rights

Blue carbon offset projects on public lands generally require a non-governmental entity to obtain the unambiguous right to claim carbon offsets from the project area. If the project partner does not unambiguously own the carbon rights, the resulting offsets may not qualify for listing on carbon markets.¹⁷¹ As the carbon rights are previously held by the landowner (i.e., a government agency), it is necessary for the landowner to agree to relinquish its right to claim carbon offsets through transfer of property rights or some other means. Some land management agencies are authorized to transfer property rights, while others lack such authorization or must comply with limits on such transfers, such as limits on the length of obligations on government lands. Carbon offset projects must fit within these statutory limitations as well as those established in voluntary carbon market standards. This section addresses agency authorization to transfer carbon rights from coastal wetlands and potential avenues, other than transfers of property rights, whereby agencies may relinquish their rights to claim offsets generated on their coastal wetlands.

Carbon rights are an interest in property with monetary value. Agencies have limited authority to transfer public property rights from public lands, as such transfers may threaten the purposes for which these lands were set aside. However, examples of authorized transactions involving interests in land abound; for example, land managers commonly “sell[] timber, allow[] mineral extraction in exchange for royalty payments, and [accept] lease payments by concessionaires that provide services on federal lands.”¹⁷² In order to carry out these transactions, land management agencies must have statutory authorization.

Agencies authority to transfer property rights to public lands ranges from very limited to almost unbounded, but none explicitly cover the transfer of carbon rights. Relevant authorities may be as broad as a general directive to sell any unprotected public land (or interests in land, such as mineral rights) or

¹⁶⁸ TULALIP TRIBAL CODES § 15.10.040

¹⁶⁹ TULALIP TRIBAL CODES § 15.10.020

¹⁷⁰ [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VIII, § 12.

¹⁷¹ SMITH, *supra* note 5, at 6.

¹⁷² SMITH, *supra* note 5, at 17.

as narrow as authority to sell rights for specific products of the land (e.g., timber rights for areas affected by invasive pests and diseases). In no case, however, do current statutes explicitly authorize (or prohibit) the sale of carbon rights. Where statutes are silent, blue carbon transactions involving rights transfers can only proceed if existing general authority is sufficiently broad to authorize the transaction. Such authority is far more likely to exist in the context of “multiple-use” agencies with broad mandates for exploitative use of public lands than in agencies directed to conserve land for public enjoyment and use.

NPS does not appear to be authorized to convey carbon rights from its lands except in very limited circumstances. The OA provides limited statutory authority to enter into specific types of contracts related to property, such as for visitor services and timber cutting (where affected by pests and diseases),¹⁷³ but it does not provide general authority for lease or sale of property interests in NPS lands. The one potentially-relevant exception allows sale or lease of lands under NPS jurisdiction that are *not* located in national parks or national monuments of scientific significance.¹⁷⁴ NPS regulations further limit the lands to which this exception applies, requiring that it be designated as a Special Use Zone and have a completed resource survey prior to leasing.¹⁷⁵ Leases on these lands must be for a fair market value and include “such terms and conditions as will ensure the use of the property in a manner that is . . . consistent with the purpose for which the System unit or related area was authorized by Congress.”¹⁷⁶ Proceeds under this section must be deposited in the Land and Water Conservation Fund and may not be available for use in maintaining specific project sites.¹⁷⁷ Under this authority, it is unlikely that NPS will be authorized to transfer property rights to carbon on most of its coastal wetlands.

FWS also lacks authority to transfer property interests. The NWRSIA authorizes commercial activities in the NWR system, consistent with refuge purposes, but this authority is related to public accommodations rather than environmental services.¹⁷⁸ As a result, FWS appears unable to legally transfer property rights from NWR units, including blue carbon offsets, even if those transfers enable activities, like coastal wetlands restoration, that enhance the conservation purposes for which the refuges were set aside.

Even were NPS or FWS authorized to transfer carbon rights on their lands, additional limitations would apply to the duration and form of those transfers. For example, the federal Antideficiency Act prohibits government obligation of funds that have not been appropriated by Congress.¹⁷⁹ This limitation would prohibit an agency from committing to fund a project, in whole or part, beyond the date of its current appropriations. Later direct government funding, if needed, would be contingent on continued appropriations, presenting a permanence issue for projects reliant on partial federal funding. Similarly, federal contracting limitations would likely prohibit agencies from accepting responsibility for funding and committing to conduct long-term stewardship necessary to maintain additionality. Another project

¹⁷³ See, e.g. 54 U.S.C. § 101925 (commercial use authorizations); *id.* § 100753 (“The Secretary . . . may sell or dispose of timber in cases where . . . the cutting of timber is required”).

¹⁷⁴ 54 U.S.C. § 102901.

¹⁷⁵ 36 C.F.R. § 17.3.

¹⁷⁶ 54 U.S.C. § 102901.

¹⁷⁷ *Id.*

¹⁷⁸ 16 U.S.C. § 668dd.

¹⁷⁹ 31 U.S.C. § 1341.

partner, such as the non-public entity receiving the carbon rights, would likely be called upon to provide the financial assurance necessary to fund long-term stewardship.¹⁸⁰

Agency-specific statutes and regulations may also limit the structure and provisions of carbon transfers. For example, the OA prohibits NPS from entering into any lease or privilege of a “natural curiosity, wonder, or object of interest” that would “interfere with free access by the public to any System unit.”¹⁸¹ NPS regulations also include restrictions on the length of certain lease transactions, where authorized, such as a maximum length of 60 years on the lease of historic properties.¹⁸² While the latter two examples may not apply to specific blue carbon project sites, they are examples of potential restrictions on the rights that agencies may legally convey and the length of obligations they may enter into. These restrictions may present challenges for compliance with voluntary carbon market standards.

Some state land management agencies have substantially broader authority to transfer property rights than NPS or FWS. For example, Florida law indicates that the Board of Trustees of the Internal Improvement Trust Fund is to “continue to receive proceeds from the sale or disposition of the products of lands and the sale of lands.”¹⁸³ Similarly, any Louisiana land-management entity, including but not limited to OSL, can lease state lands under their jurisdiction “for trapping, grazing, hunting, agricultural, and *any other legitimate purposes*” other than mineral development.¹⁸⁴ This applies to conservation lands managed by OSP, which can be sold, leased, or subleased “when [the agency] believes it advantageous to the state to do so.”¹⁸⁵ These broad authorities for transfer of title and leases to lands are likely broad enough to encompass the sale or lease of lesser property rights, including carbon rights to upland areas of coastal wetlands.

Some state agencies may have less ability to transfer property rights in general or on land units set aside for conservation. For example, Washington statutes provide for sale and lease of (among other things) land,¹⁸⁶ property rights to land (e.g., mineral rights),¹⁸⁷ and the sale of “valuable materials” from aquatic lands.¹⁸⁸ However, disposition of state lands designated as natural area preserves is tightly restricted: such lands “shall be held in trust and shall not be alienated except to another public use upon a finding by the department of natural resources of imperative and unavoidable public necessity.”¹⁸⁹ These restrictions are consistent with other restrictions on the transfer of lands set aside for conservation use. As a result, transfer of carbon rights on conservation lands is likely to be more legally constrained than on other types of state lands.

States may have more limited power to sell carbon rights on submerged lands than on uplands due to public trust limitations (see section 5.2.1.2). In some states, alienation of submerged lands is allowed, provided that sales are subject to continuing public trust limitations. Thus, the Washington Supreme Court recently explained:

¹⁸⁰ See *Compensatory Mitigation for Losses of Aquatic Resources*, 73 Fed. Reg. 19,594, 19,649 (Apr. 10, 2008) (discussing long-term funding of wetland mitigation projects on public and non-public lands).

¹⁸¹ 54 U.S.C. § 102101.

¹⁸² 36 C.F.R. § 18.10.

¹⁸³ FLA. STAT. §§ 253.03(2).

¹⁸⁴ LA. STAT. §§ 10:1211 (covered agencies), 1212 (authorizing leases) (emphasis added).

¹⁸⁵ LA. STAT. §§ 56:1687(6), 36:204.

¹⁸⁶ WASH. REV. CODE ch. 79.11 (land sales), 79.13 (land leases).

¹⁸⁷ WASH. REV. CODE ch. 79.14 (mineral, coal, oil, and gas leases).

¹⁸⁸ WASH. REV. CODE ch. 79.140

¹⁸⁹ WASH. REV. CODE § 79.70.040.

[T]he State owns [tidelands and shorelands] in two distinct capacities. First, as title owner, “the [S]tate holds full proprietary rights in tidelands and shorelands and has fee simple title to such lands” so that it “may convey title to [those lands] in any manner and for any purpose not forbidden by the state or federal constitutions and its grantees take title as absolutely as if the transaction were between private individuals.” Second, because such land is also held by the State in trust and for the benefit of the people, any right conveyed generally remains subservient to the public right to use water in place for navigation[.]”¹⁹⁰

Thus, Washington law allows the sale of property rights up to and including full title to submerged lands, and sale of carbon rights is likely lawful. In other states, like Louisiana, such sales are far more restricted. While Louisiana law authorizes sale of uplands, it prohibits alienation of state water bottoms except under particular conditions, primarily related to reclamation of lands, including mineral rights, lost due to erosion, subsidence, compaction, or sea level rise.¹⁹¹ The Florida constitution also limits sales of submerged lands to a narrow set of situations.¹⁹² While sales of submerged lands can be highly restricted, transactions involving less permanent control or occupation of submerged lands are generally allowed for activities that do not undermine trust uses. As a result, transfer of carbon rights from submerged lands in some states may require the use of a lease, permit, or license rather than a transfer of title.

Finally, transfer of carbon rights from tribal lands is likely to follow similar patterns as federal and state lands, with authority to alienate or otherwise transfer rights governed by the applicable treaty, tribal constitution, and tribal codes. Tribal transfers are unique, however, in that federal approval is likely to be required for transfer of tribal property. For example, the Tulalip Constitution authorizes the Board of Directors to “approve or veto any sale, disposition, lease, or encumbrance of tribal lands, interests in lands, or other tribal assets.”¹⁹³ The Tribal Code additionally authorizes the Tribes to “lease any and all tribal lands on the Tulalip Reservation, whether in trust, restricted, or fee status,” for a variety of public and private uses and for up to 70 years (with options to renew).¹⁹⁴ However, both the tribal constitution and codes require approval by the Secretary of Interior for any sale or lease of tribal lands, including any lease for exploitation of “any natural resource.”¹⁹⁵ Wetlands are likely considered a natural resource subject to this requirement.¹⁹⁶ In sum, the Tribes appear authorized to sell carbon rights derived from community lands only with federal approval and only for a period of up to 70 years. These limitations may increase the costs of carbon offset transactions on the reservation and pose challenges for demonstrating the permanence of blue carbon offsets, which require commitments beyond a 70-year timeframe.

The foregoing analysis suggests a range of authorities for transfer of property rights from public coastal wetlands. In instances where wetlands are included in public land units reserved for conservation purposes, land managers have limited authority to transfer property rights for commercial purposes, even where the commercial activity enhances conservation. Leasing activity on public lands managed by

¹⁹⁰ *Chelan Basin Conservancy v. GBI Holding Co.*, 413 P.3d 549, 555 (Wash. 2018).

¹⁹¹ LA. STAT. § 41:1702.

¹⁹² FLA. CONST. art. 10, § 11.

¹⁹³ [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VI, § 1.

¹⁹⁴ TULALIP TRIBAL CODES § 6.15.160.

¹⁹⁵ [CONST. & BY-LAWS FOR THE TULALIP TRIBES](#) art. VIII, §§ 2-3. Note that this language was amended to remove a prior limit on leasehold term. *Id.* at n.3. TULALIP TRIBAL CODES § 6.15.160.

¹⁹⁶ *Wetlands*, TULALIP TRIBES, <https://nr.tulaliptribes.com/Topics/Wetlands> (last visited Nov. 6, 2019) (noting management by Natural Resources Department).

other federal agencies or by states or tribes may be authorized, but even in these cases, limitations on lease terms or required conditions may prove challenging for offset projects requiring legal certainty over terms as long as 100 years.

Where agencies are unable or unwilling to transfer property rights to carbon, a different mechanism for transferring rights may be required for a blue carbon project to succeed. In some contexts where leases of public lands are not authorized, such as fisheries and aquaculture, agencies propose another type of relationship (e.g., license, permit, contract, or cooperative agreement) that does not transfer a property right.¹⁹⁷ Public land management agencies generally have the power to enter into contractual and cooperative relationships for activities that are consistent with their land management mandates. For example, the Louisiana OSP can, “for a public purpose, engage in cooperative endeavors” with other agencies and non-governmental entities.¹⁹⁸ The agreements establishing these cooperative endeavors, such as the MOAs used by FWS in its afforestation projects, may not transfer property rights and therefore may avoid concerns about disposition of public lands. However, they may be problematic from a carbon market perspective if they do not transfer unambiguous carbon rights for the full duration of the offset period – or such shorter time or subject to protections such as renewal rights as may be required by carbon markets at the outset of the project period.¹⁹⁹ Project partners and carbon market standards may differ on the legal certainty that is needed to effectively and unambiguously transfer of these carbon rights. As a result, careful consideration of carbon market standards is needed where carbon rights are transferred in a form that is not a sale or long-term lease.

Creative transaction structures may be needed to transfer carbon rights effectively without violating agency limits on whether and how property rights to public lands can be alienated. These transaction structures could entail long-term contracts, cooperative agreements, or MOAs that do not transfer property rights to non-governmental entities but which may satisfy carbon market standards. They may also entail transfers that do not qualify as property rights, such as a privilege to claim offsets that remain owned by the agency. Site-specific additional research may be needed to evaluate the legality of such creative approaches on particular blue carbon offset project sites.

6 Guidance for Land Managers

This study has identified a variety of potential legal hurdles to successful implementation of blue carbon-financed restoration projects on publicly-owned coastal wetlands. This section assists project proponents in implementing the information provided. Specifically, it identifies guidance in four areas that may assist project managers in identifying and avoiding or overcoming legal hurdles to project deployment. Development of blue carbon offset projects is inherently site-specific, occurring in the context of a particular ecosystem, array of cultural uses, project partners, and suite of laws and regulations. As the relevant legal standards and authority will differ substantially from place to place, this study cannot provide guidance on the legal challenges associated with any specific blue carbon

¹⁹⁷ See, e.g., U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-08-594, OFFSHORE MARINE AQUACULTURE: MULTIPLE ADMINISTRATIVE AND ENVIRONMENTAL ISSUES NEED TO BE ADDRESSED IN ESTABLISHING A U.S. REGULATORY FRAMEWORK 20-24 (2008) (discussing need for permit versus lease for offshore aquaculture).

¹⁹⁸ *Id.*; see also LA. CONST. art. VII § 14 (authorizing cooperative endeavors).

¹⁹⁹ In practice, the requirement for contract length is likely to be less than 100 years. For example, the Verified Carbon Standard allows projects that can demonstrate that “project ownership . . . can be maintained for the entire project longevity (e.g. where control is secured through a concession that is shorter than the project longevity, such concession is renewable for the full longevity period being claimed).” VERRA, AFOLU NON-PERMANENCE RISK TOOL, v4.0, at 7-8 (Sep. 19, 2019).

offset project. Instead, the following guidance is intended to provide generalized considerations to assist project proponents in navigating the most substantial legal challenges that were identified in this study.

6.1 Identify All Owners of the Project Site Throughout the Offset Project Period Required for Permanence

Sea level rise and coastal erosion are likely to substantially change the geographic location of the property boundary between submerged lands and uplands as well as the location of coastal wetlands in upland areas. Blue carbon offset project sites are likely to need to migrate with coastal dynamics in order to ensure continuing sequestration benefits and avoid permanence problems, and projects that do not account for geographic change are at risk of violating unambiguous ownership requirements of voluntary carbon markets. To avoid these problems in the future, project proponents may use coastal change models to identify reasonable expectations for migration of the coastline and the relevant coastal wetland area throughout the offset project period. The expected future locations of the coast and wetlands can be used to identify any relevant property owners of the project site, including upland owners of areas where marshes may migrate and submerged lands owners who may take title to the current project site. Project proponents will also benefit by identifying any severed estates or competing property rights to the project site that could require the public landowner to accommodate development inconsistent with the offset project. Each of these property owners may need to waive their rights, including potential future offset claims, through an easement or other mechanism that survives transfers of property ownership in order for the unambiguous ownership and permanence expectations to be met.

6.2 Determine Whether and How Public Agencies Can Transfer Carbon Rights to the Project Site

The ability of public agencies to transfer carbon rights to a private owner is likely to be among the most substantial challenges to blue carbon project success. Land managers working to develop blue carbon offset projects thus must determine whether the relevant public agencies are authorized to alienate carbon rights as a property rights transaction (such as a leasehold). For agencies without explicit authority to transfer property rights, project proponents will require alternative mechanisms, such as non-binding MOAs or use of newly-acquired lands (rather than existing public lands), to ensure that the public offset investor has adequate ownership interest in the carbon rights to meet the requirements of the voluntary carbon market. For example, past FWS projects have primarily occurred on private lands subsequently added to the NWR system—reserving the carbon rights on those lands to the offset owner. Similar attention to siting and transaction structure may be able to overcome legal hurdles in other contexts by locating projects on inholdings or conservation lands or by using non-governmental foundations as part of project transactions to obligate maintenance funds for site-specific uses.

As failure to reach agreement on the acceptable form of carbon rights transfers could effectively halt an offset project, determination of the structure of these transactions is an important early consideration for project proponents. These consultations may need to include not only the agency, investor, and conservation provider partners, but also carbon market representatives, to ensure that rights transactions satisfy market standards. Successful delineation of the structure of carbon rights transfers will be likely to drive project design and will thus provide important guiderails for the technical and site-specific planned actions.

6.3 Address Time Limits on Public Lands Transactions

Blue carbon offset projects may require maintenance of sequestration for up to 100 years. This long time period is a challenge for public agencies due to limitations on the term of required leaseholds or

other legal agreements needed to transfer carbon rights for the entirety of the project period. Where limitations on transaction length are shorter than the period required for permanence, project proponents may need to determine whether alternative legal arrangements satisfy carbon markets. For example, shorter-term carbon rights transactions with a limited right of renewal may satisfy both carbon market standards and public land agency mandates. Alternatively, as for authority for transfers of carbon rights, transactions that do not require a leasehold or other property transaction may be required to satisfy agency mandates; in such cases, project proponents may need to obtain assurance from the relevant carbon market that the proposed structure is acceptable.

6.4 Review Site-Specific Legal Framework

While not covered in detail in this report, individual land management units, such as National Parks, may be subject to site-specific legislation. This legislation (and associated regulations) may alter factors such as what the activities allowed on individual public land units and how the relevant agency is required to manage the site. In addition, projects on specific sites are subject to additional requirements of federal, state, and/or tribal law that may not be covered in this report. Consideration of these site-specific requirements is necessary for successful implementation of projects on sites subject to these individualized management requirements.