

**PHASE 2**  
**DRAFT RESTORATION PLAN AND**  
**ENVIRONMENTAL ASSESSMENT**  
  
**FOR THE**  
  
**Weyerhaeuser Co. Plymouth Mill**  
**Martin County, North Carolina**  
**NATURAL RESOURCE DAMAGE ASSESSMENT**  
**AND RESTORATION**  
(Unique ID #45349.834)

**February 24, 2026**

Prepared by

Weyerhaeuser Plymouth Mill Site Natural Resource Trustee  
Council:

United States Fish and Wildlife Service  
North Carolina Department of Environmental Quality  
National Oceanic and Atmospheric Administration



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## List of Acronyms and Abbreviations

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CWA    | Clean Water Act (or Federal Water Pollution Control Act)              |
| CZMA   | Coastal Zone Management Act                                           |
| DOI    | United States Department of the Interior                              |
| EFH    | Essential Fish Habitat                                                |
| FCA    | Fish Consumption Advisory(ies)                                        |
| Mill   | Domtar Plymouth Mill                                                  |
| NCP    | National Oil and Hazardous Substances Pollution Contingency Plan      |
| NCDEQ  | North Carolina Department of Environmental Quality                    |
| NCDWQ  | North Carolina Division of Water Quality                              |
| NCWRC  | North Carolina Wildlife Resources Commission                          |
| NEPA   | National Environmental Policy Act                                     |
| NHPA   | National Historic Preservation Act                                    |
| NOAA   | National Oceanic and Atmospheric Administration                       |
| NRD    | Natural Resource Damages                                              |

|       |                                                    |
|-------|----------------------------------------------------|
| NRDAR | Natural Resource Damage Assessment and Restoration |
| MBTA  | Migratory Bird Treaty Act                          |
| MMPA  | Marine Mammal Protection Act                       |
| PEIS  | Programmatic Environmental Impact Statement        |
| PRP   | Potentially Responsible Party                      |
| RC    | Restoration Center                                 |
| RP/EA | Restoration Plan and Environmental Assessment      |
| Site  | Weyerhaeuser Plymouth Wood Treating Plant Site     |
| U.S.C | United States Code                                 |
| USEPA | United States Environmental Protection Agency      |
| USFWS | United States Fish and Wildlife Service            |

## Executive Summary

Releases of hazardous substances from the Weyerhaeuser Plymouth Wood Treating Plant Site (Site), in Plymouth, Martin County, North Carolina (now owned by Domtar Paper Company (Domtar)) were sufficient to cause injury to natural resources and lost recreational services under the trusteeship of the National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce, the United States Fish and Wildlife Service (USFWS) on behalf of the United States Department of the Interior (DOI), and the North Carolina Department of Environmental Quality (NCDEQ) (collectively, “the Trustees”). The Site is an active wood and paper products manufacturing facility located in Martin County, North Carolina. As a result of contaminant discharges from the Site and other sites in the area, Welch Creek, the lower Roanoke River, and other nearby areas have had a State imposed fish consumption advisory (FCA) due to dioxin or mercury since 1990. The release(s) of dioxins from the Site negatively affected recreational uses (i.e., angling) in the lower Roanoke River, Welch Creek and the western Albemarle Sound due to dioxin related FCAs issued by the state of North Carolina.

Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), through the Natural Resource Damage Assessment and Restoration (NRDAR) process, natural resource trustees are authorized to assess and recover damages resulting from injuries to natural resources and loss of associated services attributable to hazardous substance releases. 42 U.S.C. § 9607 (f). The trustees then utilize these recovered damages to plan and implement actions to restore, replace, rehabilitate, and/or acquire the equivalent of injured natural resources and the services they provide pursuant to a restoration plan. 42 U.S.C. § 9611(i). The purpose of this Draft Phase 2 Restoration Plan and Environmental Assessment (Draft Phase 2 RP/EA) is to describe restoration planning and implementation activities to date and inform the public as to the types and scale of restoration proposed to be undertaken towards compensating for injuries to natural resources.

In 2006, the Trustees released a Draft Phase 1 Restoration Plan for public comment. In the final plan, the Trustees selected Alternative 2, Reduce Intake Volume at the Weyerhaeuser Plymouth Mill Cooling Water Intake, which Weyerhaeuser Paper Company, a Potentially Responsible Party (PRP) at the Site, voluntarily implemented. The restoration project would reduce ongoing impacts to fish populations, have negligible impacts on the human environment, and, of all the alternatives considered, be the most time sensitive in benefiting affected resources. The selected restoration alternative was considered by the Trustees in resolving the PRP’s potential natural resource damages liability under CERCLA. The Trustees stated in the Phase 1 Restoration Plan that they would retain the remaining restoration alternative projects not selected for further consideration in Phase 2 restoration planning.

The Trustees developed this Draft Phase 2 RP/EA in accordance with CERCLA Section 111(i) and its implementing regulations (43 C.F.R. § 11.93) to inform the public as to the types and amount of restoration that are expected to compensate for injuries to natural resources and lost recreational services resulting from releases of hazardous substances at and from the Site. This document is an addendum to the Final Phase 1 Restoration Plan ([https://pub-data.diver.orr.noaa.gov/admin-record/6225/FinalWeyerhaeuserPhase\\_1\\_RP\\_November2006.pdf](https://pub-data.diver.orr.noaa.gov/admin-record/6225/FinalWeyerhaeuserPhase_1_RP_November2006.pdf)).

Herein, the Trustees evaluate the potential benefits from the remaining Phase 1 restoration projects, as well as other potential restoration activities not evaluated during Phase 1 and propose a suite of restoration projects that will offset injuries. The CERCLA NRDAR alternatives described and evaluated in this Draft Phase 2 RP/EA include the Trustees' preferred alternatives, Additional Modifications to the Domtar Plymouth Mill Cooling Water Intake System (Alternative 2); Lighting Modifications at the Plymouth Facility (Alternative 3); Waterfront Park Improvements (Alternative 4); Warren Neck Conservation (Alternative 5); and Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements (Alternative 6), and other alternatives, including the No Action alternative and one non-preferred alternative.

Under the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 et seq.), federal agencies must identify and evaluate environmental impacts that may result from proposed major federal actions. This Draft Phase 2 RP/EA describes the purpose and need for action, identifies potential alternatives, including a No Action alternative, summarizes the affected environment, and describes the potential environmental consequences of a reasonable range of alternatives. The NEPA alternatives described and evaluated in this Draft Phase 2 RP/EA include two of the Trustees' preferred alternatives, Warren Neck Conservation (Alternative 5) and Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements (Alternative 6), as well as, the No Action alternative and one non-preferred alternative.

The preferred restoration alternatives collectively aim to enhance habitat conditions for Roanoke River fish, conserve bottomland hardwood forest wetland habitats important for maintaining the water quality aspects of fish nursery habitat, and provide recreation opportunities, such as angling, for the public. Collectively, the preferred restoration alternatives restore, enhance, create, or replace the equivalent natural resources and enhance recreational services. The Trustees are soliciting comments on this Draft Phase 2 RP/EA for a period of 30 days and will address any public comments received in preparing a Final Phase 2 RP/EA wherein the Trustees will identify the Selected Alternatives. Comments may be submitted to the address listed in Section 1.8 of this document.

## **1.0 INTRODUCTION**

This Draft Phase 2 Restoration Plan and Environmental Assessment (Draft Phase 2 RP/EA) has been developed by the National Oceanic and Atmospheric Administration (NOAA) of the U. S. Department of Commerce, the United States Fish and Wildlife Service (USFWS) on behalf of the U.S. Department of the Interior (DOI), and the North Carolina Department of Environmental Quality (NCDEQ) (collectively, “the Trustees”) to address natural resources, including recreational services, injured, lost or destroyed due to releases of hazardous substances in areas at or adjacent to the Weyerhaeuser Plymouth Wood Treating Plant Site, in Plymouth, Martin County, North Carolina (now owned by Domtar Paper Company (Domtar)) (the “Site”).

This Draft Phase 2 RP/EA is an addendum to the Final Phase 1 Restoration Plan (Weyerhaeuser Plymouth Mill Site Trustee Council 2006) which selected Alternative 2, Reduce Intake Volume at the Weyerhaeuser Plymouth Mill Cooling Water Intake, as the preferred alternative for an early restoration action. In 2007, Weyerhaeuser Paper Company (Weyerhaeuser), a Potentially Responsible Party (PRP) at the Site, voluntarily implemented this alternative.

Development of this Draft Phase 2 RP/EA is in accordance with 43 Code of Federal Regulations (C.F.R.) § 11.93 and Section 111(i) of CERCLA to inform the public as to the types and amount of restoration that are expected to compensate for injuries to natural resources and lost recreational services associated with the releases of hazardous substances at and from the Site. The CERCLA natural resource damage assessment and restoration (NRDAR) process allows for recovered funds to be used to plan and implement actions to restore, replace, rehabilitate, and/or acquire the equivalent of injured natural resources and the services they provide. In this Draft Phase 2 RP/EA, the Trustees describe the purpose and need for action, identify and evaluate additional restoration projects that will compensate for the injured resources and services lost that have not been addressed to date, summarize the affected environment, and describe the potential environmental consequences of proposed restoration activities. The Trustees are soliciting comments on this Draft Phase 2 RP/EA and will address comments in preparing a Final RP/EA wherein the Trustees will identify the Selected Restoration Alternative(s).

### **1.1 Overview of the Site**

The Domtar Plymouth Mill (Mill) is an active wood and paper products manufacturing facility located on State Road 1565 in Martin County, North Carolina. Weyerhaeuser Paper Company was the owner/operator of this Mill beginning in 1957, when the company merged with the Kieckhefer-Eddy Company, which began operations at the facility in 1937. Domtar acquired the Site from Weyerhaeuser and assumed all site-related environmental cleanup obligations in March 2007. The Mill is situated on about 2,400 acres near the confluence of Welch Creek and the Roanoke River, about 1.5 miles from the Town of Plymouth and approximately 7 miles upstream from Albemarle Sound (Figure 1). The Roanoke River is the northern boundary of the Site.

Since 1937, Welch Creek and the Roanoke River received wastes from the Site containing contamination including dioxins, furans, and mercury. As a result of contaminant discharges from this and other sites in the area, Welch Creek and the lower Roanoke River have had a State imposed FCA due to dioxin since 1990 (Figure 2). Western Albemarle Sound was added to this

advisory in 1991. A FCA for mercury was imposed for all State waters east of I-85 in 1997 and expanded to include all State waters in 2006.

Waste disposal practices contaminated groundwater, sediment, soil, surface water and fish. The Environmental Protection Agency (EPA) did not list the Site on the Superfund program's National Priorities List (NPL) but considers it an NPL-caliber site. The EPA, State of North Carolina, and Domtar and its predecessor have investigated Site conditions and have taken steps to clean up the Site to protect human health and the environment through the Superfund Alternative Approach. Domtar, with oversight from the EPA and North Carolina Department of Environmental and Natural Resources (NCDENR)<sup>1</sup>, led remedial actions under CERCLA at the Site. The last 5-year review, issued by EPA in 2025 concluded that the selected remedies currently protect human health and the environment because exposure pathways that could result in unacceptable risks have been addressed. (USEPA 2025)

The Site includes four Operable Units (OUs): OU1, landfill #1; OU2, the Lower Roanoke River; OU3, the former chlorine plant; and OU4, Welch Creek. The landfill (OU1) and former chlorine plant (OU3) are located on the Site property and Weyerhaeuser completed remedial actions in 2005 and 2006, respectively. Welch Creek (OU4), a tributary to the lower Roanoke River (OU2), flows through the eastern portion of the Site for approximately 4.1 miles. EPA issued a cleanup plan and Record of Decision for OU4 in 2007, requiring the installation of a thin layer sand cap to address contaminated sediment in Welch Creek, continuation of an existing FCA, and other requirements. In 2008, EPA issued a cleanup plan for OU2, requiring Domtar to monitor natural recovery to address contamination in surface water, sediment, and fish tissue, continuation of an existing FCA, and other monitoring activities.

## **1.2 Purpose and Need for Restoration**

This Draft Phase 2 RP/EA has been prepared by the Trustees. The purpose of this Draft Phase 2 RP/EA, building from the Final Phase 1 RP (Weyerhaeuser Plymouth Mill Site Trustee Council 2006), is to address injured natural resources and lost recreational services due to release(s) of hazardous substances in areas at or adjacent to the Site. The need for this Draft Phase 2 RP/EA arises from the statutory requirement to use recovered NRDAR damages to restore, rehabilitate, replace, or acquire natural resources injured and recreational services lost by releases of hazardous substances and to describe the restoration actions or projects that the Trustees have proposed to undertake using recovered restoration funds. Additionally, the RP/EA describes restoration projects undertaken and to be undertaken by the PRP as creditable for its potential NRD liability.

The Trustees developed this Draft Phase 2 RP/EA in accordance with 43 C.F.R. § 11.93 to inform the public as to the types and scale of restoration proposed to be undertaken as compensation. Consistent with the CERCLA NRDAR regulations, this plan includes a reasonable number of alternatives and identifies preferred alternatives.

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<sup>1</sup> NCDENR became the North Carolina Department of Environmental Quality (NCDEQ) in 2016.

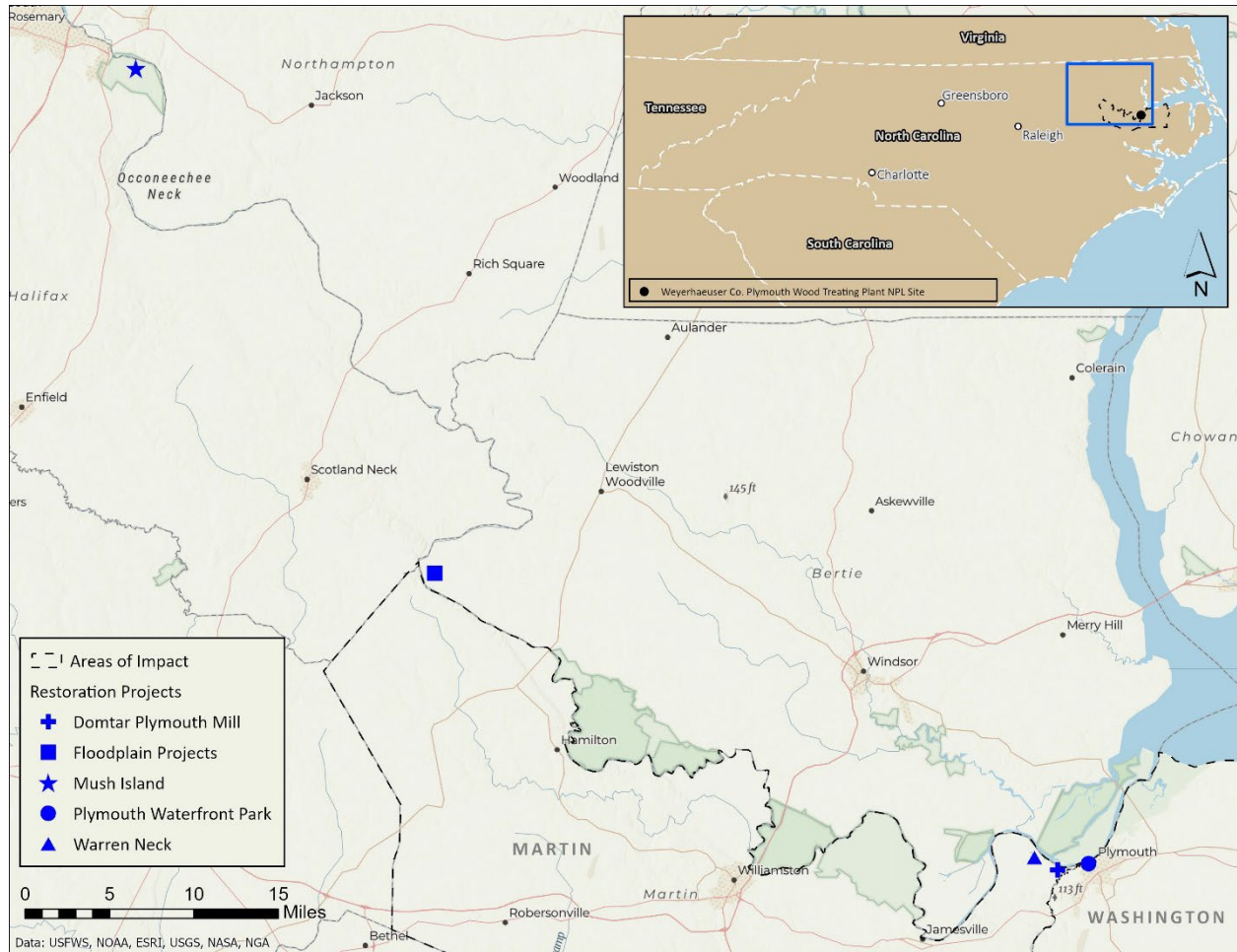


Figure 1. Locations of proposed restoration projects within and near Martin County, North Carolina and in context with the Domtar Plymouth Mill. Floodplain projects refer to Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements.

### 1.3 Natural Resource Trustees and Authority

Pursuant to the authority of Section 107(f) of CERCLA, as amended, 42 U.S.C. § 9607(f); Federal Water Pollution Control Act (commonly known as the Clean Water Act), as amended, 33 U.S.C. § 1321(f)(4) and (5), (CWA); Subpart G of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. §§ 300.600, 300.605; and other applicable Federal and State laws, designated Federal and State authorities may act on behalf of the public as natural resource trustees to pursue damages for injury to, destruction of, or loss of natural resources and their services, including recreational services, resulting from the release of hazardous substances to the environment.

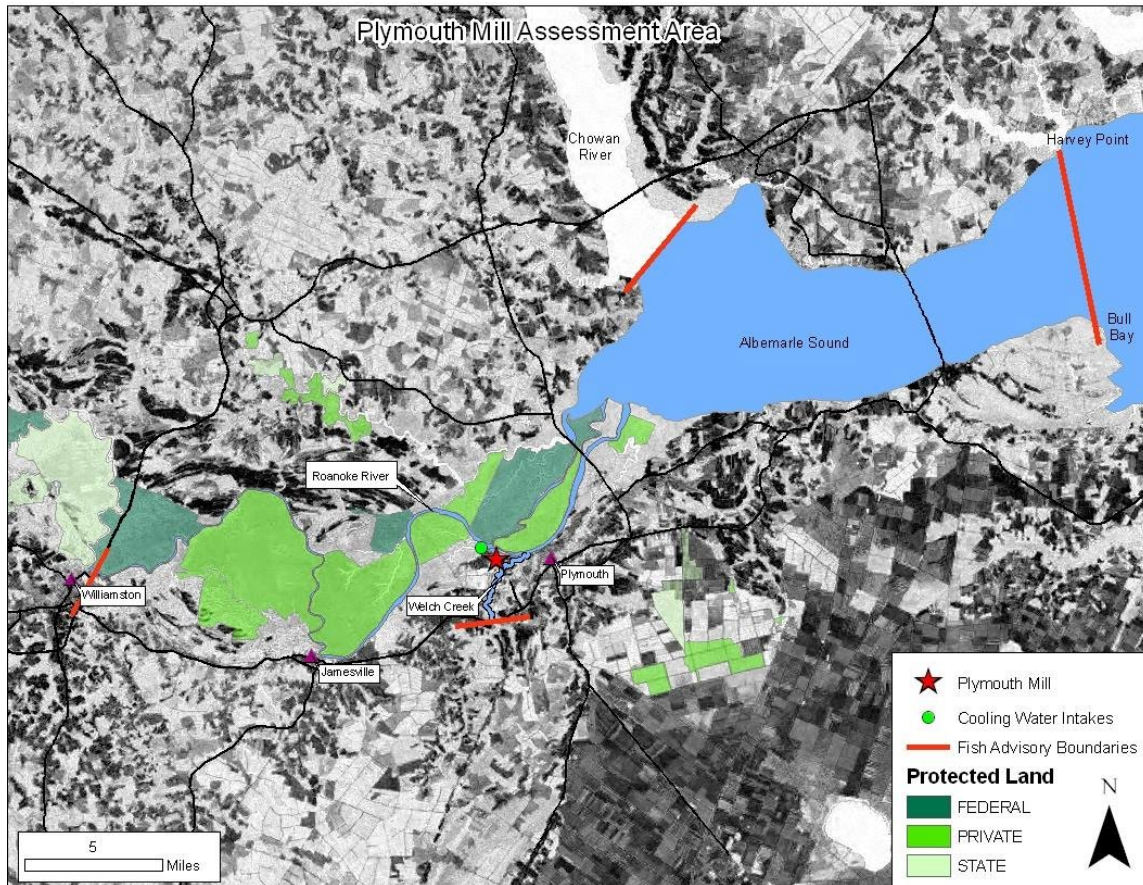


Figure 2. Weyerhaeuser Plymouth Mill assessment area near Plymouth, North Carolina. The red bars indicate the boundaries of the dioxin FCA.

The President has designated Federal resource trustees in the NCP, 40 C.F.R. § 300.600, and through Executive Order 12580, dated January 23, 1987, as amended by Executive Order 13016, dated August 28, 1996. Pursuant to the NCP, the Secretary of the DOI acts as a Trustee for natural resources and their supporting ecosystems, managed or under jurisdiction of the DOI. The Secretary of Commerce shall act as trustee for natural resources managed or controlled by Department of Commerce and for natural resources managed or controlled by other federal agencies and that are found in, under, or using waters navigable by deep draft vessels, tidally influenced waters, or waters of the contiguous zone, the exclusive economic zone, and the outer continental shelf.

In accordance with 42 U.S.C. § 9607(f)(2)(B) and the NCP, the State of North Carolina has designated the Secretary of the NCDEQ as its Natural Resource Trustee representative. The State Trustee acts on behalf of the public as Trustee for natural resources, including their supporting ecosystems, within the boundaries of their state, or belonging to, managed by, controlled by, or appertaining to North Carolina, respectively.

The State and Federal Trustees may have concurrent jurisdiction over the natural resources potentially affected in this matter. 40 C.F.R. § 300.615(a). This shared trusteeship is reflected in the coordinated fish and wildlife management practices of the Trustees and is consistent with the

management policies of all the Trustees.

This Draft Phase 2 RP/EA was prepared jointly by the Trustees in accordance with Section 111(i) of CERCLA and its implementing regulations (43 C.F.R. § 11.93). In addition, federal trustees must comply with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.) and agency-specific NEPA implementing procedures.<sup>2</sup> NEPA requires a federal agency to consider the potential environmental impacts of a proposed major federal action(s) to determine if the proposed action(s) may significantly affect the quality of the human environment and to inform and involve the public in the decision-making process. For this Phase 2 RP/EA, NOAA is acting as the lead agency for NEPA compliance and USFWS is participating as a cooperating agency (42 U.S.C. 4336a(a)). More about NEPA compliance is contained in Section 5.8.

#### **1.4 Restoration Goals**

In the Phase 1 RP (Weyerhaeuser Plymouth Mill Site Trustee Council 2006), the Trustees identified one restoration goal -- restoring or enhancing recreational fisheries -- which was used to guide development of alternatives.

Stemming from these goal statements, the Trustees proposed reducing fish mortality due to impingement and entrainment at the Site's cooling water intakes to restore fish stocks to address compensable losses. This was Alternative 2 in the Phase 1 RP.

This Draft Phase 2 RP/EA adopts the above-mentioned restoration goal and the additional projects (alternatives) described and evaluated in this Draft Phase 2 RP/EA are intended to further improve fish populations by reducing mortality and conserving nursery habitat as well as enhancing recreation.

#### **1.5 Summary of Natural Resource Damage Assessment and Restoration**

In the damages determination phase of the NRDAR process, (see generally 43 C.F.R. §§ 11.80-11.84) the Trustees identified and determined the restoration needed to compensate for the public's loss of natural resource services for the period from the time of release to the time the resources are fully restored to baseline condition, or until resources are replaced and/or equivalent natural resources are acquired (the "interim loss") (see 43 C.F.R. 11.83(c)). The scale (or size) of the restoration action(s) should be that which provides the value to adequately offset the natural resource service losses. The process of determining the restoration size is called restoration scaling. Restoration scaling requires a framework for quantifying losses and for benefits of restoration such that losses and benefits can be compared. For restoration scaling in this assessment, the Trustees evaluated how recreational angling behavior was affected by FCAs due to dioxin contamination and the potential offsetting benefits of restoration projects increasing/improving access for recreational angling and enhancing fish populations targeted by recreational anglers. In general, the Trustees' assessment attempted to evaluate recreational

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<sup>2</sup> See Companion Manual for NOAA Administrative Order 216-6A - "Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities" (June 30, 2025), DOI's NEPA implementing regulations (43 CFR Part 46), and U.S. Department of the Interior Handbook: National Environmental Policy Act Implementing Procedures.

angling behavior under With- and Without-Release conditions that led to North Carolina issuing dioxin FCAs, and With- and Without-Restoration to evaluate the benefits of restoration to recreational angling from enhancements to fish populations and increased/improved fishing access.

The release(s) of dioxins from the facility negatively affected recreational uses (i.e., angling) in the lower Roanoke River, Welch Creek and the western Albemarle Sound due to dioxin FCAs issued by the state of North Carolina.<sup>3,4</sup> FCAs were first issued for Welch Creek and the Roanoke River in 1990. Anglers were advised not to eat fish taken from Welch Creek and to limit consumption of fish to no more than one meal per month for fish taken from the affected area of the Roanoke River. These FCAs applied to all fish species. The FCAs were expanded to the western portion of the Albemarle Sound in 1991 at the level of no more than one meal per month. The Albemarle Sound FCAs extended from the mouth of the Roanoke River in the west to Bull Bay and Harvey Point in the east. In 2002, the FCAs for all three affected areas were modified to apply only to catfish and carp and recommended the consumption of no more than one meal per month of these species. These modified FCAs for the affected areas of Welch Creek, Roanoke River, and Albemarle Sound continue through the present time.<sup>5</sup>

The presence of contamination in fish and advisories recommending reduced consumption of fish can negatively affect recreational angling in different ways. Anglers may decrease the number of fishing trips they take or they may choose to fish at alternative sites unaffected by the FCA. Anglers continuing to fish at the site under the FCA may change fish cleaning and cooking practices to limit exposure to contaminants, decrease fish consumption or eat none, or change fish targeted for consumption. Recreational anglers could also experience a loss without changes in fishing practices if these anglers prefer sites that are not contaminated but do not have access to acceptable alternative sites for fishing. For such anglers, these behavioral responses represent a loss in utility or well-being received from the trip still taken to sites with the FCA. Conversely, restoration activities that are undertaken to increase/improve access to fishing sites or to enhance fish populations targeted by recreational anglers in certain areas can positively affect angler behavior. Anglers may increase the number of trips they take or may choose to change fishing from another site to the area benefiting from restoration due to improved conditions. Anglers already fishing at areas benefiting from restoration may receive an enhanced fishing experience due to a greater abundance of fish to catch or decreased travel costs from better accessibility.

The assessment of the magnitude of recreational fishing losses due to FCAs for areas of the lower Roanoke River, Welch Creek and the western Albemarle Sound was evaluated via benefit transfer. Benefit transfer is a listed economic valuation methodology in the CERCLA NRDAR regulations, 43 C.F.R. § 11.83. In the context of recreational uses, the benefit transfer methodology uses existing preference information on recreational uses from the economics literature to identify how changes in environmental quality or site characteristics affect a

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<sup>3</sup> Issuance of a fish consumption advisory is injury under the CERCLA NRDAR regulations, 43 C.F.R. § 11.62(f)(iii).

<sup>4</sup> See Clark (2004) for a historical account of the FCAs issued by North Carolina for the lower Roanoke River, Welch Creek and Albemarle Sound.

<sup>5</sup> See the North Carolina Department of Health and Human Services current fish consumption advisories at <https://epi.dph.ncdhhs.gov/oec/fish/advisories.html#W>.

recreational user's well-being (e.g., recreational angler). The Trustees' NRDAR was informed by the existing economics literature on recreational angling and factors that affect angling preferences/values (e.g., FCAs), information on the affected area and population, information on historical recreational angling activity in the affected area, and information about how potential restoration projects affect fish populations and/or access for recreational angling. Economics literature on recreational angling and impacts of FCAs includes Breffle et al. (2009), Chen and Cosslett (1998), Jakus et al. (1997), Jakus, Dadakas, and Fly (1998), Jakus and Shaw (2003), Montgomery and Needelman (1997), Parsons and Hauber (1998) and Parsons, Jakus and Tomasi (1999). Information and data on historical recreational angling activity was obtained from North Carolina Fishery Management Plans (NCDENR and NCWRC, 2003), creel surveys (NCDEHNR, 1994) and economics literature (Schuhmann and Schwabe, 2004). Additional information and data sources utilized included marine recreational fisheries data collected by NOAA<sup>6</sup> and economics literature (Morey, 1994).

## **1.6 Summary of Phases 1 and 2 Restoration Plans**

In 2006, the Trustees released the Phase 1 RP ("Phase 1 Final Restoration Plan for the Weyerhaeuser Plymouth Mill Martin County, NC"; available at <https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/6225>). In the Phase 1 RP, the Trustees selected Alternative 2 ("Reduce Intake Volume at the Weyerhaeuser Plymouth Mill Cooling Water Intake") to reduce fish mortality and enhance fish stocks. The alternatives analysis in the Phase 1 RP is incorporated by reference herein. Weyerhaeuser voluntarily implemented the selected project.

The entire lower Roanoke River, including the Mill's water intake location, is an important nursery area for fish (Rulifson and Overton 2006). Many fish larvae tend to move with water with little ability to swim away from an intake. The Trustees assumed that using less water from the river for cooling will harm fewer fish which would be taken along with the water, thereby improving future fish abundance consistent with the Phase 1 RP goal. Based on cooling water system data provided by Domtar, the redesigned cooling water intake system has reduced the volume of river water withdrawn, subsequently reducing the likelihood of annual fish mortality rates in the lower Roanoke River caused by the impingement and/or entrainment of larval and juvenile fish at the cooling water intakes. Therefore, the Trustees believe the selected project in the Phase 1 RP has been successful in supporting the restoration goal. Because the water recycling project was designed to reduce, but not eliminate, water taken from the river, the Trustees assumed that additional modifications to the cooling water intake system, in addition to other potential projects, may be considered in a subsequent restoration phase. Additional modifications to the cooling water intake system were noted as Alternative 3 in the Phase 1 RP.

The remaining restoration alternative projects not selected (five in total) in the Phase 1 RP have been retained for further consideration in Phase 2 restoration (Table 1). During Phase 2, the Trustees evaluated the potential benefits from the remaining Phase 1 restoration projects, as well as other potential restoration activities, including new or improved recreational fishing access

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<sup>6</sup> The Trustees' NRDAR initially relied on NOAA's Marine Recreational Fisheries Statistics Survey (MRFSS). In 2008, MRFSS was replaced by the Marine Recreational Information Program (MRIP) (see: <https://www.fisheries.noaa.gov/recreational-fishing-data/about-marine-recreational-information-program>).

and facilities and decreased fish mortality to help enhance fish populations in the affected area over time. The Trustees' evaluation determined that these restoration types would directly benefit recreational anglers and their fishing experience and therefore, offset losses.

Table 1. Summary of alternatives not selected in the Phase 1 restoration plan and whether they have been retained for further consideration in Phase 2 restoration plan.

| <b>Phase 1 Restoration Alternative</b>                                                             | <b>Retained or Eliminated in Phase 1</b> | <b>Reason for Exclusion in Phase 1 (if applicable)</b> | <b>Alternative Number in Phase 2</b> |
|----------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|--------------------------------------|
| Alternative 3:<br>Additional Modification to the Cooling Water Intake System                       | Retained                                 | N/A                                                    | Alternative 2                        |
| Alternative 4: Filling Levee Breaches in Lower Roanoke River Floodplain                            | Eliminated                               | No viable project sites identified*                    | N/A                                  |
| Alternative 5:<br>Acquisition of Land for Habitat Protection                                       | Retained                                 | N/A                                                    | Alternative 5                        |
| Alternative 6:<br>Improving Recreational Fishing Public Access                                     | Retained                                 | N/A                                                    | Alternative 4                        |
| Alternative 7:<br>Reduction of Fish Take at Other Cooling Water Intakes in the Lower Roanoke River | Eliminated                               | No viable project sites identified                     | N/A                                  |

\*Alternative 6 in Phase 2 has potential to provide similar water quality benefits

In addition to the above-mentioned alternatives in Table 1, the Trustees evaluate three other alternatives in this Phase 2 RP, which are described in Section 2.2.

### **1.7 Summary of the Proposed Settlement Agreement**

The United States (DOI/USFWS and NOAA), the State of North Carolina (NCDEQ), and Domtar Paper Company, LLC have negotiated a Consent Decree to resolve Domtar's alleged liability for natural resource damages associated with historical releases at and from the Plymouth Mill Site under CERCLA. The settlement's purposes are to fund restoration of injured

resources and associated services, cover Trustee oversight costs, resolve claims without prolonged litigation, and formalize obligations under court supervision.

Key terms of the settlement include:

- Funding for Trustee-implemented restoration: Domtar will pay \$1,750,000 plus interest into NOAA's Damage Assessment and Restoration Revolving Fund (DARR Fund) for Trustee-sponsored restoration consistent with the Final Phase 2 Restoration Plan.
- Trustee oversight costs: Domtar will pay \$155,000 plus interest into DOI's NRDAR Fund to cover planning, implementation, monitoring, and administrative oversight costs.
- Past assessment costs: The Consent Decree provides for reimbursement of DOI, NOAA, and State past natural resource damage assessment costs, with interest, pursuant to documentation and specified timelines.
- Recognition of completed restoration actions: The Decree acknowledges actions already implemented by Domtar, including cooling-water intake reductions (24,000 gpm cooling tower eliminating once-through cooling), lighting modifications, seasonal outages timed to protect spawning fish, and Plymouth Waterfront Park improvements that enhance public recreation.
- Conservation Agreement: Within 30 days of the Effective Date, Domtar must record a Conservation Agreement (deed restriction) in Martin County and provide notice and a copy of the recorded instrument to the United States and the State.

## **1.8 Public Participation**

Public participation is an important step in the NRDAR process. The Trustees have prepared this Draft Phase 2 RP/EA to provide the public with information on natural resource injuries and service losses assessed in connection with the Site, restoration goals that have guided the Trustees in developing this plan, alternatives that were considered, and the process and rationale used by the Trustees to identify preferred alternatives. Public review of the Draft Phase 2 RP/EA is an integral part of the restoration planning process and is consistent with all applicable State and Federal laws and regulations, including CERCLA and the guidance for restoration planning found within 43 C.F.R. Part 11.

This Draft Phase 2 RP/EA is available for public review and comment concurrently with the public comment period for the proposed consent decree, which is available for public review at <https://www.justice.gov/enrd/consent-decrees>. The Draft Phase 2 RP/EA will be open for public comment for 30 days from the date of publication of the Notice of Availability. The Draft Phase 2 RP/EA will also be made available to the public for comment via a NOAA web posting at: <https://darrp.noaa.gov/>. Interested individuals, organizations, and agencies may submit comments by writing or emailing:

Howard Schnabolk  
National Oceanic and Atmospheric Administration  
2234 South Hobson Avenue  
Charleston, SC 29405  
Phone: 854-429-2252  
Email: [Howard.Schnabolk@noaa.gov](mailto:Howard.Schnabolk@noaa.gov)

The Trustees will review and consider all public comments and input on this plan received during the public comment period prior to finalizing the Phase 2 RP/EA. The development of the Draft Phase 2 RP/EA, the public comment process, and finalization of the Phase 2 RP/EA is performed solely by the Trustees. Based on the public's comments, or other information, the Trustees may amend the Phase 2 RP/EA if significant changes are made to the type, scope, or impact of the projects. In the event of a significant modification to the Phase 2 RP/EA the Trustees will provide the public with an opportunity to comment on that particular amendment.

The Trustees have maintained records documenting the information considered and actions taken by the Trustees during the NRDAR. These records are available for review by interested members of the public. Interested persons can access or view these records at:

<https://www.diver.orr.noaa.gov/web/guest/diver-admin-record/6225>

## **1.9 Organization of the Restoration Plan**

Section 2 describes the proposed alternatives the Trustees identified and evaluated to compensate for the losses caused by the Site releases. This includes a summary of the criteria with which the Trustees evaluated possible restoration alternatives. 43 C.F.R. § 11.82(d) and § 11.93.

Section 3 describes the affected environment where the alternatives would be implemented and presents the Trustees' analysis of the environmental consequences of the alternatives that propose major federal actions.

Section 4 describes the monitoring plan for the preferred alternatives and project fulfillment activities.

Section 5 lists additional environmental compliance with laws, regulation, and policies required as part of project fulfillment.

Section 6 provides an estimated budget summary and timeline of the preferred alternatives, and

Section 7 contains the references identified in this Draft Phase 2 RP/EA.

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## **2.0 ALTERNATIVES**

The Trustees have identified seven alternatives, including the No-Action alternative, for compensation of losses resulting from releases of hazardous substances at and from the Site.

## **2.1 Alternatives Evaluation Criteria**

The CERCLA NRDAR regulations list ten factors for the Trustees to evaluate and consider when selecting a restoration alternative or project to pursue. Thus, these factors are applied to identify a range of alternatives for consideration as well as to identify the restoration alternative(s) or project(s) that is/are best to pursue.

The Trustees evaluated the alternatives to determine if they provide sufficient type, quality, and quantity of natural resources and recreational uses to compensate for those lost due to contamination in the context of the CERCLA NRDAR (43 C.F.R. §11.82 (d)) (see following list of criteria). Each of the ten factors listed in 43 C.F.R. §11.82 (d) are evaluated for each of the alternatives in Section 2.2. The Trustees also evaluated whether significant effects may be associated with the alternatives that propose major federal actions, as well as the No Action alternative, as required by NEPA (42 U.S.C. §§ 4332(2)(C)(i-iii), 4336(b)(2)) in Section 3.3. Similar to Phase 1 RP, the Trustees used the CERCLA § 11.82(d) factors and additional case-specific alternative selection criteria to assess the potential alternatives as follows:

### Technical Feasibility (43 C.F.R. § 11.82(d)(1)):

The selected restoration alternative must be technically sound. The Trustees considered the level of risk or uncertainty involved in implementing a project. A proven record of accomplishment demonstrating the success of projects utilizing similar or identical restoration techniques can be used to satisfy this evaluation criterion.

### Cost Benefit (43 C.F.R. § 11.82(d)(2)):

The relationship of the expected costs of the proposed actions to the expected benefits from the restoration, rehabilitation, replacement, and/or acquisition of equivalent resources. Projects with higher benefit to cost ratios are preferred.

### Cost Effectiveness (43 C.F.R. § 11.82(d)(3)):

When two or more activities provide the same or similar level of benefits, the least costly activity providing that level of benefits will be selected.

### Actual or Planned Response Actions (43 C.F.R. § 11.82(d)(4)):

The Trustees must consider the results of any actual or planned response actions when evaluating alternatives.

### Potential for Additional Injury Resulting from the Proposed Actions (43 C.F.R. § 11.82(d)(5)):

Trustees must identify the adverse impacts, both short and/or long term, from the project. Some short-term adverse impacts from implementation may be expected, however, projects with large or long-term adverse impacts are not preferred.

### Natural Recovery Period and the Ability of Resources to Recover without Restoration (43 C.F.R. § 11.82(d)(6-7)):

Trustees must consider the ability of injured natural resources to recover and the time required for that recovery if no restoration is undertaken to benefit injured natural resources. Trustees should also consider the time required to observe those benefits if the project is implemented.

Public Health and Safety (43 C.F.R. § 11.82(d)(8)):

The preferred alternative(s) should not pose a threat to the health and safety of the public.

Compliance with Laws, Regulations, and Policies (43 C.F.R. § 11.82(d)(9-10)):

Development of this RP/EA requires consideration of a variety of legal authorities and their potentially applicability to the preferred alternative. As part of the restoration planning process, the Trustees initiated steps to ensure compliance with applicable laws, regulations, and policies. Implementation of the preferred alternative(s) remains subject to complying with all applicable laws and regulations.

Consistency with the Trustees' Restoration Goals:

The preferred alternative(s) should meet the Trustees' intent to directly restore the injured resources or the services those resources provide. Included in this criterion is the potential for success (meeting restoration goals) and the level of expected return of resources and resource services.

Proposed restoration actions are anticipated to have long-term beneficial and sometimes short-term adverse impacts to the physical, biological, socio-economic, and/or cultural environments. In Section 2.3, the Trustees determine for each alternative the potential for success and the level of expected return.

## **2.2 NRDAR Evaluation of Alternatives**

In this section, the Trustees identify and evaluate the seven Phase 2 alternatives using the evaluation criteria described in Section 2.1. Figure 1 illustrates the locations of each of the preferred alternatives completed and area of focus for those contemplated for implementation. Table 2 identifies the restoration alternative, expected benefit, and the implementation status of each Phase 2 restoration alternative. Tables 3 through 9 provide an evaluation of each of the Phase 2 alternatives against the restoration evaluation criteria.

Domtar elected to implement some projects at its own risk to be considered by the Trustees for credit against its potential NRD liabilities. These implemented projects are described further below. Consequently, in this document, the Trustees evaluate both alternatives which have already been implemented and others which have yet to be implemented.

Table 2. Summary of Natural Resource and Service Benefits of Restoration Alternatives

| <b>Phase 2 Restoration Alternative</b>                                               | <b>Natural Resources and Services Benefited</b>                                                                                                                                                                  | <b>Status</b>                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 - No Action                                                                        | Resources and services and their condition and trajectories would not be changed                                                                                                                                 | Evaluated in this plan.                                                                                                                                                                              |
| 2 - Additional Modifications to the Domtar Plymouth Mill Cooling Water Intake System | Fish populations in the Roanoke River Basin, especially larval-stage and juvenile fish in the Roanoke River through reduced impingement and entrainment of fish into the facility's cooling water intake system. | Completed by Domtar in 2019. Not a proposed major Federal action requiring NEPA evaluation.                                                                                                          |
| 3 - Lighting Modifications at the Plymouth Facility                                  | Reducing Roanoke River fish attraction to facility lighting and resulting potential impingement or entrainment.                                                                                                  | Completed in 2011. Not a proposed major Federal action requiring NEPA evaluation.                                                                                                                    |
| 4 - Waterfront Park Improvements, City of Plymouth                                   | Recreation-user experience will be enhanced.                                                                                                                                                                     | Property improvements on waterfront park to enhance recreational opportunities. Partially completed and reimbursed by Domtar in 2013. Not a proposed major Federal action requiring NEPA evaluation. |
| 5 - Warren Neck Conservation                                                         | Protection of floodplain forests and their existing natural resources and associated resource services, including water quality benefits to fish nursery habitat.                                                | Proposed to be completed. Evaluated for NEPA compliance in this plan.                                                                                                                                |
| 6 - Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements       | Enhancement of fish passage, reduction in fish mortality, and improvement to water and habitat quality, thereby increasing fish abundance in the area.                                                           | Proposed to be completed. Evaluated for NEPA compliance in this plan.                                                                                                                                |
| 7 - Acquisition and Conservation of Mush Island Property (Approx. 3,000 acres)       | Protection of existing natural resources, including spawning habitat for American shad and striped bass, and associated resource services located on the property.                                               | Not completed. Evaluated for NEPA compliance in this plan.                                                                                                                                           |

### **2.2.1 Alternative 1: No Action**

NEPA requires the Trustees to evaluate an alternative in which no actions are taken by a federal agency (42 U.S.C. § 4332(2)(C)(iii)). CERCLA has the same requirement (43 C.F.R. § 11.82(c)(2)). Here, the No Action alternative would mean no direct action to restore injured natural resource habitat, create new habitat, enhance existing habitat, or compensate for lost natural resources or lost recreational services. Instead, the Trustees would rely solely on natural recovery for the achievement of restoration goals. While the Trustees believe that natural recovery will occur over varying time scales, the interim losses would not be fully compensated under a no-action alternative.

Pursuant to CERCLA and NEPA, the Trustees considered a No Action alternative. This alternative is appropriate if/when no additional restoration projects are necessary to restore, rehabilitate, replace, and/or acquire the equivalent of the injured natural resources or lost human use of those resources. The principal advantages of this approach are the ease of implementation and lack of costs because natural processes rather than humans determine the trajectory of the system.

Table 3. Evaluation of No Action alternative against the evaluation criteria.

| <b>Alternative 1: No Action</b>                                                     |                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                         | <b>Evaluation</b>                                                                                                                                                                                                                                                                                |
| Technical Feasibility                                                               | The No Action alternative is technically feasible.                                                                                                                                                                                                                                               |
| Cost Benefit                                                                        | Assumed to be the least costly alternative in terms of planning and implementation costs. However, it also provides less benefits when compared to the preferred alternatives over a similar period. Cost-to-benefit ratio is not favorable.                                                     |
| Cost Effectiveness                                                                  | Assumed to be less costly than if the Trustees were to pursue restoration under the preferred alternatives; however, the No Action alternative does not address interim losses of natural resources and services, whereas the preferred alternatives do, and therefore provide greater benefits. |
| Actual or Planned Response Actions                                                  | There are no further actual or planned response activities; therefore, there is no impact on the No Action alternative and vice versa.                                                                                                                                                           |
| Public Health and Safety                                                            | Any potential public health and safety issues or concerns that exist under current and future natural resource management activities would likely remain the same.                                                                                                                               |
| Adverse Impacts from Project                                                        | Does not cause further injury but provides no benefits to offset interim losses.                                                                                                                                                                                                                 |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration | The natural recovery period would likely be variable and dependent on site-specific factors, especially in areas where there is residual contamination.                                                                                                                                          |
| Compliance with Laws and Policies                                                   | Does not meet the requirements and goals of the CERCLA NRDAR process.                                                                                                                                                                                                                            |
| Consistency with the Trustees' Restoration Goals and Objectives                     | The No Action alternative would not provide for restoration, replacement, enhancement or acquisition of injured natural resources, making this alternative inconsistent with Trustee restoration goals.                                                                                          |

### **2.2.2 Alternative 2: Additional Modifications to the Domtar Plymouth Mill Cooling Water Intake System and Seasonal Outages (Preferred)**

Alternative 2 involves providing NRDAR restoration credit for the benefits to fish resulting from seasonal shutdowns and the installation of a 24,000 gallon per minute (gpm) cooling tower at Domtar's Plymouth Mill. The cooling tower eliminated once-through cooling water taken from the Roanoke River; when larval fish are abundant in the river at the Mill, every gallon not taken from the river results in fewer fish being taken from impingement and entrainment. Impingement occurs when fish are pinned against water intake screens or other parts of a water intake system. Entrainment occurs when fish in the intake water are drawn into a water system and subjected to thermal, physical, or chemical stresses. Means to reduce water use from the river were part of the Phase 1 RP and were expanded on for consideration under this Phase 2 RP/EA.

In June 2019, Domtar started operating a 24,000 gpm cooling tower at the Mill. The cooling tower has eliminated once-through cooling water withdrawals at the Mill. The amount of once-through cooling water used before the cooling tower became operational is known from records for a cooling water discharge pipe back to the river. Water exclusively for cooling averaged 35% of the total water withdrawn from the river (range 28 to 41%) in the five years prior to the cooling tower becoming operational (2014 to 2018). With the operation of the cooling tower, the percentage of cooling water decreased to 9.3% for 2019. The 2019 figure is an annual average, and in seven months of data following the 2019 startup of the cooling tower, the percentage of cooling water was close to zero. The corresponding water withdrawn from the river over the same period shows a reduction from 51 million gallons per day (MGD) average in the five years prior to the cooling tower became operational (2014 to 2018) to 26 MGD in 2019 when the cooling tower was in operation for half the year, to 22 MGD from 2020 to 2022 – about a 57% reduction in river water withdrawn.

Some of the water reduction was done for CWA Section 316(b) compliance, but the Mill went beyond what those regulations required to realize additional benefits to fish that could be proposed for NRDAR restoration credit. In 2014, the EPA promulgated the Existing Facilities Rule (Rule) pursuant to the CWA Section 316(b). The Rule applies to a facility if the intake flow is greater than 2 MGD and with at least 25% of the water used exclusively for cooling purposes. In 2014, the Domtar Plymouth Mill exceeded both thresholds as noted above. The Mill had options for how they complied with the CWA 316(b) requirement, and they chose to reduce their proportion of water used for cooling to less than 25% through installation of a cooling tower. Mill staff reviewed a 10-year average of water withdrawal and cooling water data and calculated the reduction in cooling water needed to be below the 25% threshold that could be achieved with a 3,000-6,000 gpm cooling tower. Domtar instead installed a 24,000 gpm cooling tower to further reduce cooling water taken from the river. The 316(b) regulations did not require Domtar to reduce its cooling water usage to less than 25%; rather, that was Domtar's chosen approach among other options.

For purposes of restoration, the Trustees evaluated what portion of water reduction resulting from the construction and operation of the cooling water tower was more than required for CWA 316(b) compliance. For example, the cooling water tower was fully operational by mid-2019, but compliance with the new regulations was not required until the facility's National Pollutant Discharge Elimination System (NPDES) permit was issued in mid-2022. This resulted in approximately three years of restoration of fish by reducing fish impingement and entrainment mortality. For purposes of restoration after the NPDES permit issuance, the Trustees consider only a portion of the benefits to

fish resulting from the amount of water reduction attributable to the new tower—specifically the amount beyond that used to achieve the 25% cooling water CWA compliance threshold.

Additionally, the Trustees evaluated the benefits to fish achieved through Domtar's seasonal Mill shutdowns during fish spawning season. Over a 10-year period, the Plymouth Mill took its outage in the month of May (peak of spawning) five times with the other five outages taken in other months (March and April). Each outage ranged from 13 days to 20 days in duration.

- Because the cooling water tower was fully operational by mid-2019 and compliance with the new regulations was not required until the facility's permit was issued in mid-2022, Trustees suggest 100% credit for reductions in water use (which directly relates to reduced fish impingement and entrainment mortality, as describe below) for three years. Overall water intake withdrawal from the river went from an average of 51 MGD in the five years prior to the cooling tower became operational to 22 MGD in the three years following. The water saved is about 29 MGD (see estimate of associated fish benefits below).
- After the mid-2022 permit issuance, only the amount of water reduction beyond that used to achieve the 25% cooling water CWA compliance threshold is creditable. Domtar estimated the cooling tower capacity needed to get river water cooling needs to 25% (from the 35% it was in the preceding years) at about 4,500 gpm (taken as the middle of their 3,000-6,000 gpm design estimate), which is equivalent to 6.5 MGD. They instead installed a 24,000 gpm cooling tower which has reduced the percentage of exclusive cooling water taken from the river to near 0. Trustees propose credit for water reductions from mid-2022 moving forward at 22.5 MGD (29 MGD water reduction realized - 6.5 MGD for the mill's approach to CWA compliance = 22.5 MGD, or 78% of the total, available for NRDAR crediting).
- Additionally, Domtar will be credited with 100% of the benefits from scheduling Mill shutdowns during fish spawning season. Over a 10-year period, the Plymouth Mill took its outage in the month of May (peak of spawning) five times with the other five outages taken in other month (March and April). Each outage ranged from 13 days to 20 days in duration. When this outage modification was implemented, it was done to reduce water usage during periods when larvae and juvenile fish were most present in the river.

Natural resource benefits of the water reduction may be estimated and/or verified several ways including the following. The additional 25% reduction in water withdrawals equates to four billion fewer gallons removed from the river per year from the intake over minimum design needed for CWA compliance (based on the three years prior to cooling tower installation).

Since every gallon of water not used at the Mill may seasonally conserve larval fish in that water, the fisheries benefits are estimated to be substantial. Rulifson and Overton (2006) report that striped bass (*Morone saxatilis*), white perch (*Morone americana*), and river herring (*Alosa pseudoharengus*) made up 97% of all the fish larvae collected at station in front of this Mill from March through June. Taking just May for illustration purposes, from the density of fish larvae at the mill (known from previous sampling) and changes in May water use (known from Mill reports to the State), cooling tower operations in May can be estimated to result in daily reduction of larvae potentially harmed of 18,000 river herring, 85,000 striped bass, and 28,000 white perch. Similar records are available for March through June which is the period when most larval fish are present; those data can be used for estimating additional benefits.

An ancillary benefit is the elimination of all cooling water discharges back to the river. By no longer discharging this noncontact cooling water into the Roanoke River, which averaged from approximately 193 to 1,349 million gallons per month over the decade prior to the cooling tower implementation, thermal impacts to the Roanoke River have been eliminated from this outfall which was permanently closed.

Table 4. Evaluation of Alternative 2: Additional Modifications to the Domtar Plymouth Mill Cooling Water Intake System and Seasonal Outage Schedule.

| <b>Alternative 2: Additional Modifications to the Domtar Plymouth Mill Cooling Water Intake System and Seasonal Outage Schedule</b> |                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                                                                         | <b>Evaluation</b>                                                                                                                                                                                                                                                                                                                                                   |
| Technical Feasibility                                                                                                               | The project is technically feasible and has been completed by Domtar.                                                                                                                                                                                                                                                                                               |
| Cost Benefit                                                                                                                        | Trustees did not evaluate cost benefit.                                                                                                                                                                                                                                                                                                                             |
| Cost Effectiveness                                                                                                                  | The Trustees do not have sufficient information to determine cost-effectiveness.                                                                                                                                                                                                                                                                                    |
| Actual or Planned Response Actions                                                                                                  | There are no further actual or planned response actions.                                                                                                                                                                                                                                                                                                            |
| Public Health and Safety                                                                                                            | The Trustees are not aware of any public health and safety issues associated with this alternative.                                                                                                                                                                                                                                                                 |
| Adverse Impacts from Project                                                                                                        | There are no known adverse impacts to the environment associated with this alternative. This alternative was developed to provide benefits to Roanoke River fish.                                                                                                                                                                                                   |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration                                                 | The recovery period to provide benefits to Roanoke River fish through implementation of this alternative would be less than the recovery period for the No Action alternative.                                                                                                                                                                                      |
| Compliance with Laws and Policies                                                                                                   | Meets the requirements and goals of CERCLA NRDAR process to provide for restoration that compensates the public for the injury and loss of the natural resources and services caused by releases of hazardous substances from the Site. In addition, this alternative is consistent with implementation of Section 316(b) of the Clean Water Act, 33 U.S.C. § 1326. |
| Consistency with the Trustees' Restoration Goals and Objectives                                                                     | This alternative would reduce Roanoke River fish impingement and entrainment in the facility's cooling water intake system, directly benefiting fish species impacted by releases of hazardous substances from the Site.                                                                                                                                            |

### 2.2.3 Alternative 3: Lighting Modifications at the Plymouth Facility (Preferred)

In 2011, Domtar removed all the lighting fixtures near the Roanoke River and modified remaining safety lighting to prevent/minimize shining into the river. The reduction of light benefits fish because fewer fish congregate near the cooling towers, thereby minimizing impingement and entrained-related fish mortality.

Table 5. Evaluation of Alternative 3: Lighting Modifications at the Plymouth Facility.

| <b>Alternative 3: Lighting Modifications at the Plymouth Facility</b>               |                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                         | <b>Evaluation</b>                                                                                                                                                                               |
| Technical Feasibility                                                               | The project is technically feasible and has been completed by Domtar.                                                                                                                           |
| Cost Benefit                                                                        | The Trustees did not evaluate cost benefit.                                                                                                                                                     |
| Cost Effectiveness                                                                  | The Trustees have no information to determine cost-effectiveness.                                                                                                                               |
| Actual or Planned Response Actions                                                  | There are no further actual or planned response actions.                                                                                                                                        |
| Public Health and Safety                                                            | The Trustees are not aware of any public health and safety issues associated with this alternative.                                                                                             |
| Adverse Impacts from Project                                                        | There are no known adverse impacts to the environment associated with this alternative. This alternative was developed to provide benefits to Roanoke River fish.                               |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration | The recovery period to provide benefits to Roanoke River fish through implementation of this alternative would be less than recovery period for the No Action alternative.                      |
| Compliance with Laws and Policies                                                   | Meets the requirements and goals of CERCLA NRDAR process to provide restoration that compensates the public.                                                                                    |
| Consistency with the Trustees' Restoration Goals and Objectives                     | This alternative would reduce attraction of Roanoke River fish to lights at the Plymouth Mill, thereby reducing fish impingement and entrainment in the facility's cooling water intake system. |

#### **2.2.4 Alternative 4: Waterfront Park Improvements (Preferred)**

Domtar and the Town of Plymouth entered into a Funding Agreement in April 2013 to provide a mechanism for Domtar to reimburse the Town of Plymouth for costs to improve its Waterfront Park and thereby increase recreational opportunities available to residents and tourists associated with the area's natural resources. The improvements completed to date include repair and installation of new bulkheads, construction of a gazebo, paving parking lots, and building a boardwalk along the riverfront as an attractive walking path connecting the Civil War Museum on the east side of town and the Lighthouse and Maritime Museum on the west side of Town. Improvements to the east Plymouth boat ramp entailed improving the ramp surface and length and reconstruction of the dock alongside the ramp. Restoration of the boat ramp was intended to allow boaters to launch their boats from Plymouth in a timely and safe manner. Pursuant to the 2013 Agreement, Domtar has previously reimbursed the Town \$375,000 for this work. The 2013 Agreement provides funding up to the amount of \$527,000, with the remaining \$152,000 to be made available for reimbursement upon final agreement on settlement with the Trustees. The Trustees evaluated the completed improvements to the waterfront park in this Draft RP/EA; any future work under the 2013 Agreement is not within the scope of the NRDAR.

Table 6. Evaluation of Alternative 4: Waterfront Park Improvements.

| <b>Alternative 4: Waterfront Park Improvements</b>                                  |                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                         | <b>Evaluation</b>                                                                                                                                                                                                               |
| Technical Feasibility                                                               | The project is technically feasible and has been completed by Domtar.                                                                                                                                                           |
| Cost Benefit                                                                        | The Trustees did not evaluate cost benefit.                                                                                                                                                                                     |
| Cost Effectiveness                                                                  | The Trustees have no information to determine cost-effectiveness.                                                                                                                                                               |
| Actual or Planned Response Actions                                                  | There are no further actual or planned response actions.                                                                                                                                                                        |
| Public Health and Safety                                                            | The Trustees are not aware of any public health and safety issues associated with this alternative.                                                                                                                             |
| Adverse Impacts from Project                                                        | There are no known adverse impacts to the environment associated with this alternative. This alternative is intended to provide recreational benefits to the public with the purpose of offsetting lost recreation due to FCAs. |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration | Recreation losses due to releases of hazardous substances would not be offset without implementation of this project or one like it.                                                                                            |
| Compliance with Laws and Policies                                                   | Meets the requirements and goals of CERCLA NRDAR process to provide restoration that compensates the public.                                                                                                                    |
| Consistency with the Trustees' Restoration Goals and Objectives                     | Completion of improvements to park facilities enhances the recreational-user experience, including anglers and other river-users who may have been impacted by injury to the recreational fishery.                              |

### 2.2.5 Alternative 5: Warren Neck Conservation (Preferred)

Alternative 5 encompasses the conservation of forested habitat that benefits water quality and therefore fish while preserving recreational opportunities for the public. Ownership of the Warren Neck property will be retained by Domtar and a deed restriction will be placed on the parcel, preserving the natural condition of the property. The purpose of this conservation is to preserve the mature bottomland forest on the property to benefit water quality and fish nursery habitat to compensate the public for losses associated with releases of hazardous substances at and from the Site. The shoreline of the Warren Neck property is publicly accessible by boat from the Roanoke River, thus providing protected habitat to support recreational fishing.

The Warren Neck area is approximately 760 acres of cypress/gum swamp forest dominated by bald-cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*). The Warren Neck parcel is of interest to the Trustees because it is fish nursery habitat, contiguous with existing conservation land, and represents a portion of the bottomland forest ecosystem that is critical to the health of the

Roanoke River. The extensive floodplain in the lower reaches of the Roanoke River is one of the largest intact, and least disturbed, bottomland forest ecosystems in the mid-Atlantic region. The conservation community has made it a focal area for large-landscape protection for the biodiversity and water quality benefits provided by large, intact floodplain forests. The USFWS, North Carolina Wildlife Resources Commission (NCWRC), The Nature Conservancy, and others have acquired easements and properties to realize long term benefits of these forests. The Nature Conservancy has an easement on an adjacent parcel, and there are State and federally-protected lands across the river. The protected aspect of large neighboring tracts is an important concept in addition to the habitat value of the site. The stream and riparian wetland habitats on this tract are similar in composition, size and function to those of the dioxin-impacted Welch Creek system and also offer fish nursery habitat. A deed restriction avoids the risk of potential development degrading fish habitat.

Table 7. Evaluation of Alternative 5: Warren Neck Conservation

| <b>Alternative 5: Warren Neck Conservation and Recreational Uses</b>                |                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                         | <b>Evaluation</b>                                                                                                                                                                                                                           |
| Technical Feasibility                                                               | The project is technically feasible and likely to result in conservation of similar resources injured.                                                                                                                                      |
| Cost Benefit                                                                        | The Trustees do not have cost information to evaluate this criterion.                                                                                                                                                                       |
| Cost Effectiveness                                                                  | The Trustees have no information to determine cost-effectiveness.                                                                                                                                                                           |
| Actual or Planned Response Actions                                                  | There are no remedial response activities proposed that will affect this alternative.                                                                                                                                                       |
| Public Health and Safety                                                            | The Trustees are not aware of any public health and safety issues associated with the project.                                                                                                                                              |
| Adverse Impacts from Project                                                        | Majority of impacts are anticipated to be positive and long-term, although short-term, minor, and adverse impacts are possible depending on the nature of activities, including those intended to improve or maintain ecological functions. |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration | The time needed for natural resource benefits to accrue from this alternative is less than recovery period for the No Action alternative.                                                                                                   |
| Compliance with Laws and Policies                                                   | Compliant with applicable/relevant laws, policies, and regulations.                                                                                                                                                                         |
| Consistency with the Trustees' Restoration Goals and Objectives                     | Consistent with the restoration goal of restoring or enhancing recreation fisheries since the project will conserve fish habitat (temporarily flooded areas that serve as juvenile fish habitat).                                           |

## 2.2.6 Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements (Preferred)

Alternative 6 encompasses the restoration of approximately 600 acres of Roanoke River floodplain habitat using several techniques to accomplish restoration goals. The overall goal of the project is to improve floodplain connectivity, with additional goals of reestablishing fish passage through the placement of culverts and bridges at barriers, significantly enhancing fish habitat, improving water quality, and reducing flood impacts on infrastructure. Restoration of modified landforms (artificial levees, artificially breached natural levees, artificial ditches) in the floodplain below Roanoke Rapids has been identified as a high priority for management of both fisheries and terrestrial resources. Changes to the flood operations at the U.S. Army Corps of Engineers (USACE) Wilmington District's John H. Kerr Reservoir, upriver from the proposed project area, have resulted in more frequent, higher flood releases to the lower Roanoke River Basin. There are two separate issues that impact fish related to these alterations:

1. Many roads, both major and minor, cross over the lower Roanoke River floodplain. Old and/or deteriorating culverts can inhibit the natural hydrology in the floodplain. Old culverts often restrict fish access and prohibit sufficient tidal flow, which in turn, can degrade forested wetlands.
2. Historic cuts made in the natural river banks to facilitate the removal of timber were left unfilled and allow water that would not normally overbank into the forested wetlands to fill these areas during high water events. This water remains there for days or weeks before oxygen-depleted floodwaters are flushed back into the river rapidly through the straight cuts in the bank.

Replacing old culverts with properly sized structures – such as rock fords, bridges, or larger culverts – restores floodplain hydrology and reduces environmental impacts from road crossings. In addition, filling the man-made cuts in the natural river bank with clean local sediments to restore the natural hydrology of the forested wetlands would significantly reduce the flushing of low dissolved oxygen water into the Roanoke River, thereby improving water quality, and reducing fish mortality.

Solutions include barrier retrofits, such as improved culverts that are properly-sized and designed for fish passage; low water crossings which are passable by fish; and simple stream crossings for vehicles, such as timber bridge crossings. Instream habitat features may be added, where appropriate and feasible, such as large woody debris, leaf packs, and pools. Native plantings may be incorporated to stabilize banks and enhance habitat diversity.

The proposed alternative includes hydrologic modification, habitat restoration, and construction/installation of simple water crossings and fish-friendly culverts. Up to five lost natural connections to the Roanoke River could be restored; reconnection of three miles of historic stream channels to natural flow and flood regime; and over 600 acres of potentially improved habitats.

Table 8. Evaluation of Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements.

| <b>Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements</b> |                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                                      | <b>Evaluation</b>                                                                                                                                                                                                                                              |
| Technical Feasibility                                                                            | The project is technically feasible and likely to result in conservation of similar resources injured.                                                                                                                                                         |
| Cost Benefit                                                                                     | The project has favorable benefit-to-cost ratios given the success of similar restoration activities in nearby areas and that the project is focused on multiple resources and services. Project has clear goals and objectives, both of which are measurable. |
| Cost Effectiveness                                                                               | Project has been developed to be cost-effective, as restoration elements are supported by best available information and nearby similar projects.                                                                                                              |
| Actual or Planned Response Actions                                                               | There are no remedial response activities proposed that will affect this alternative.                                                                                                                                                                          |
| Public Health and Safety                                                                         | The Trustees are not aware of any public health and safety issues associated with the project.                                                                                                                                                                 |
| Adverse Impacts from Project                                                                     | Majority of impacts are anticipated to be positive and long-term, although short-term, minor, and adverse impacts are possible during construction, such as low water crossings or culverts.                                                                   |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration              | The time needed for natural resource benefits to accrue from this alternative is less than recovery period for the No Action alternative.                                                                                                                      |
| Compliance with Laws and Policies                                                                | Compliant with applicable/relevant laws, policies, and regulations.                                                                                                                                                                                            |
| Consistency with the Trustees' Restoration Goals and Objectives                                  | This alternative would allow for the enhancement of fish habitat and passage, providing both direct and indirect benefits to the same type of aquatic resource and services injured by releases of hazardous substances from the Site.                         |

### 2.2.7 Alternative 7: Mush Island Perpetual Conservation Easement (Non-Preferred)

Mush Island is an approximately 3,100-acre mix of agricultural lands, upland forests and bottomland hardwood wetland forests near Weldon, North Carolina. The area has extensive and intact palustrine forested wetlands along the Roanoke River floodplain. The river from above Mush Island and downstream to the Broadneck area provides important spawning habitat for a significant population of striped bass and other anadromous species, including American shad (*Alosa sapidissima*) and Hickory shad (*Alosa aestivalis*) (Hassler et al, 1981, Johnson et al. 1981). The river levee forests provide important water quality functions for this spawning reach. The U.S. Departments of Commerce and DOI emphasized, in a report to Congress, the need to protect riparian wetlands immediately adjacent

to the Roanoke River's important striped bass spawning habitat (USFWS 1992).

The wisdom of protecting this nursery area, for the benefit of aquatic resources as well as the public's investment in the striped bass restoration effort, was embraced in 1989 when the Governor of North Carolina, the USFWS, and NCWRC signed a memorandum of understanding facilitating the creation of the Roanoke River National Wildlife Refuge (USDOJ and NCWRC 1989). That memorandum references the Roanoke River National Wildlife Refuge environmental assessment (USFWS 1988) which identifies the Mush Island site for refuge acquisition and states a primary purpose of the refuge as protection of migrating and spawning habitat for striped bass and other anadromous fish. To restore and protect water quality and fish spawning, Mush Island is included within Congressionally-approved acquisition boundary of Roanoke River National Wildlife Refuge.

However, despite the conservation value of Mush Island and attempts by the Trustees and other parties to reach agreement on the terms of a conservation easement, the current owners of the property were not interested in selling the property. Therefore, this alternative is not technically feasible.

Table 9. Evaluation of Alternative 7: Mush Island Perpetual Conservation Easement

| <b>Alternative 7: Mush Island Perpetual Conservation Easement</b>                   |                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Restoration Criteria</b>                                                         | <b>Evaluation</b>                                                                                                                                                                                                                                                 |
| Technical Feasibility                                                               | Not technically feasible—no willing seller.                                                                                                                                                                                                                       |
| Cost Benefit                                                                        | The project has favorable benefit-to-cost ratios given the success of similar conservation activities in nearby parcels and that the project is focused on multiple resources and services. Project has clear goals and objectives, both of which are measurable. |
| Cost Effectiveness                                                                  | Project has been developed to be cost-effective, as conservation elements have been shown to be relatively inexpensive (compared to active restoration) and supported by best available information and nearby similar projects.                                  |
| Actual or Planned Response Actions                                                  | There are no remedial response activities proposed that will affect this alternative.                                                                                                                                                                             |
| Public Health and Safety                                                            | The Trustees are not aware of any public health and safety issues associated with the project.                                                                                                                                                                    |
| Adverse Impacts from Project                                                        | Majority of impacts are anticipated to be positive and long-term.                                                                                                                                                                                                 |
| Natural Recovery Period and the Ability of Resources to Recover without Restoration | The time needed for natural resource benefits to accrue from this alternative are uncertain.                                                                                                                                                                      |
| Compliance with Laws and Policies                                                   | Compliant with applicable/relevant laws, policies, and regulations.                                                                                                                                                                                               |
| Consistency with the Trustees' Restoration Goals and Objectives                     | Allows for the protection of existing natural resources, including spawning habitat for American shad and striped bass, and associated resource services that were injured by releases of hazardous substances from the Site.                                     |

### 2.2.8 Evaluation of Alternatives

The preferred alternatives of this Draft Phase 2 RP/EA include Alternatives 2 through 6, as they 1) meet the restoration evaluation criteria and 2) meet the Trustees' restoration goals and objectives, as described in Section 1.4. Alternative 7, Mush Island Conservation Easement, could not be completed, thus making it a non-preferred alternative.

Alternative 1, the No Action alternative, does not meet the requirements and goals of the CERCLA NRDAR process to restore injured natural resources and services. In addition, the restoration funds must be spent on restoration, replacement, rehabilitation, and/or acquisition of the equivalent of injured resources. 42 U.S.C. § 111(i). A No Action alternative does not allow for the spending of the restoration funds in accordance with the Consent Decree.

### **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

NEPA requires that a federal agency evaluate the reasonably foreseeable environmental effects of the proposed agency action (42 U.S.C. § 4332(2)(C)(i)). This includes evaluation of what would happen if the Trustees did nothing further, referred to as the “No Action alternative.” This section of the Draft Phase 2 RP/EA describes the potential impacts of both the No Action alternative and the other alternatives that propose a major federal action because they have not yet been implemented (i.e., alternatives 1, 5, 6 and 7 identified in Section 2). The analysis presented here considers the range of potential environmental consequences that may be anticipated to occur as a result of implementation of activities evaluated in the environmental assessment.

The following definitions are used in this section to characterize the nature of the various impacts evaluated in this Draft Phase 2 RP/EA:

- Short-term or long-term impacts. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic.
- Negligible, minor, moderate, or major impacts. These relative terms are used to characterize the magnitude of an impact. Negligible impacts are generally not quantifiable and do not have perceptible impacts on the human environment. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in considering the potentially affected environment and the degree of effects of the proposed action, have the potential to have significant effects (see NOAA, Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities (June 30, 2015)) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.
- Adverse or beneficial impacts. An adverse impact is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

This Section presents pertinent information about the affected area of the preferred alternatives that have not been completed and the Trustees’ analysis of the environmental consequences of implementing those projects. The Environmental Assessment applies only to the No Action alternative (Alternative 1); Warren Neck Conservation (Alternative 5); Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements (Alternative 6); and the non-preferred alternative (Alternative 7). Alternatives 2, 3, and 4 are not proposed major Federal actions because they have already been implemented by Domtar; therefore, these alternatives are outside the scope of the NEPA reasonable range of alternatives.

In Section 3.3, the environmental consequences of the No Action, Alternatives 5, 6, and 7 are assessed to determine whether implementation of any of these alternatives may significantly affect the

quality of the human environment, particularly with respect to physical, biological, socio-economic, or cultural environments.

### **3.1 Affected Environment**

#### **3.1.1 The Physical Environment**

A description of the physical environment, including surface waters, major dams, dominant habitats of Albemarle Sounds and the Roanoke River, and the Roanoke River National Wildlife Refuge is included in Section 3.1 of the Phase 1 RP and is incorporated by reference herein.

#### **3.1.2 The Biological Environment**

Habitats in the area include woodlands, wetlands, rivers, and creeks. These habitats support a wide variety of plant and animal species. Aquatic organisms potentially affected by contamination of surface water and sediments include benthic macroinvertebrates and fish.

With 214 bird species, including 88 breeding species (44 of these being neotropical migrants), the Roanoke River floodplain has the highest diversity of breeding birds in the North Carolina coastal plain. These species include a large resident wood duck population, wintering waterfowl such as mallard (*Anas platyrhynchos*) and black duck (*Anas rubripes*), and a number of landbirds including the bald eagles (*Haliaeetus leucocephalus*). Birds typical of rich floodplain forests are common here during the breeding season, including Louisiana waterthrush (*Parkesia motacilla*), American redstart (*Setophaga ruticilla*), Kentucky warbler (*Geothlypis formosa*), Red-eyed vireo (*Vireo olivaceus*), yellow-throated vireo (*Vireo flavifrons*), great crested flycatcher (*Myiarchus crinitus*), Acadian flycatcher (*Empidonax virescens*), and six species of woodpeckers. More uncommon species that occur here include Swainson's warbler (*Limnithlypis swainsonii*), cerulean warbler (*Setophaga cerulea*), and Mississippi kite (*Ictinia mississippiensis*). Martin County is within the known or expected range of red-cockaded woodpecker (*Picoides borealis*).

In addition to having significant bird concentrations, the assessment area is a productive area for freshwater, estuarine and marine finfish, plant species, and other wildlife. Important recreational gamefish include largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), redear sunfish (*Lepomis microlophus*), pumpkinseed (*Lepomis gibbosus*), channel catfish (*Ictalurus punctatus*), white catfish (*Ameiurus catus*), white perch (*Morone americana*), yellow perch (*Perca flavescens*). Plant species in the assessment area include: wild hyacinth (*Camassia scilloides*), trout lily (*Erythronium americanum*), atamasco lily (*Zephyranthes atamasca*), fire pink (*Silene virginica*), spring beauty (*Claytonia virginica*), Virginia bluebells (*Mertensia virginica*), pawpaw (*Asimina triloba*), spicebush (*Lindera benzoin*), yellow buckeye (*Aesculus flava*), eastern wahoo (*Euonymus atropurpureus*).

The river supports one of the most diverse resident and anadromous fish communities. Anadromous fisheries of the river include striped bass (*Morone saxatilis*), Atlantic sturgeon (*Acipenser oxyrinchus*), shortnose sturgeon (*Acipenser brevirostrum*), blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), hickory shad (*Alosa mediocris*), and American shad (*Alosa sapidissima*).

The Roanoke River has the only self-sustaining population of striped bass in North Carolina. Although near the verge of collapse in the 1980s, striped bass recovery, due primarily to improvements in flow management during the spawning season and conservative harvest regulations, occurred steadily until the population was officially declared recovered in 1997. However, in recent years, the Roanoke striped bass population has declined. In 2023, during a spawning grounds survey, NCWRC biologists observed the lowest abundance of striped bass in the Roanoke River on record. High mortality rates in recent years resulted in a persistent low abundance of older fish, which are important for population recovery. Low abundance and the impacts of high mortality resulted in poor spawning success over the past six years, even in years when Roanoke River conditions were considered optimal for spawning. The decline in population recently prompted closures of the striped bass commercial and recreational 2025 harvest season in the Roanoke River and Albemarle Sound Management Areas.

Atlantic and shortnose sturgeon are present, but rare, in the area. The population, size and range of these species declined drastically throughout the 20<sup>th</sup> century. In 1967, shortnose sturgeon was originally listed under the Endangered Species Preservation Act, the precursor to the ESA. The species was regarded as extirpated from the Roanoke River region prior to the capture of a single adult in 1998. The Atlantic sturgeon, while not as rare as the shortnose, also has very limited presence in the Roanoke. As a result, the NOAA National Marine Fisheries Service (NMFS) conducted a status review of the species in 2007 to determine if a threatened or endangered listing is needed. The status review determined the most significant threats to Atlantic Sturgeon are bycatch mortality, poor water quality, lack of adequate state and federal regulatory mechanisms, and dredging activities. Additional stressors include habitat impediments and ship strikes. Atlantic Sturgeon were listed as a federally endangered species in 2012. In 2017, NMFS designated the Roanoke River as Critical Habitat for the species. A recent estimate of effective population size indicates there are between 16 and 21 individuals in the Roanoke River. Recent records have also shown Atlantic sturgeon in the Roanoke River as far upstream as Weldon, NC. The recreational and commercial harvesting (take) of any species of sturgeon is prohibited. Any sturgeon caught must be immediately released.

American shad and Hickory shad are important migratory fisheries of the Roanoke River. Historically, shad were abundant and supported exceptional commercial and recreational fisheries. Spawning habitat loss, fragmentation caused by the construction of dams, overharvest, and other factors have contributed to the decline of shad population along the Atlantic Coast. Due to the ecological importance of American Shad in the Roanoke River as well as providing opportunities for recreational fisheries, the NCWRC has put tremendous effort into monitoring and restoring American Shad populations in this system. Since the inception of a hatchery-based stocking program developed by NCWRC in 1998, nearly 76 million fry have been stocked into the Roanoke River Basin. The most recent coastwide stock assessment of American shad stated that populations in the Albemarle Sound, including Roanoke River, are sustainable and not depleted. Commercial and recreational harvest is permitted; however, restrictions are in place and fluctuate year to year.

In North Carolina blueback herring and alewife, collectively known as river herring, are managed under the North Carolina River Herring Fishery Management Plan for River Herring. This plan was adopted in February of 2000, and focuses on issues pertaining to stock conditions, habitat degradations, and research/monitoring expansion to provide assessment and socioeconomic data. In 2007, the plan implemented a no-harvest provision for commercial and recreational fisheries of river herring in coastal waters of the state. This was a result of the North Carolina Division of Marine

Fisheries (NCDMF) 2005 stock assessment of river herring that determined blueback herring and alewife were overfished and overfishing was occurring.

It is worthy to note the importance habitat and water quality play in the recovery of the river herring stocks in North Carolina and coastwide (NCDMF 2009). In North Carolina, considerable habitat has been lost through wetland drainage, stream channelization, and conversion to other uses. Some streams are blocked by dams, storm debris, and other physical barriers. Migration and spawning may be affected by the replacement of small road bridges and culverts. Oxygen consuming wastes are discharged into several streams and practices to control non-point discharges are inadequate causing nuisance algal blooms, fish kills, and fish diseases over the years. The NCDMF initiated a survey of culverts and obstructions as part of the North Carolina River Herring Fishery Management Plan. The list created from the survey has resulted in the replacement of failing culverts and prioritized others for replacement or repair.

Federally sensitive species occurring in the project area include two species of bats, two species of birds, and several other protected species (Table 10).

Table 10. List of federally protected species potentially occurring in Martin County, North Carolina, and in the vicinity of the alternatives. Data from U.S. Fish and Wildlife Service Information, Planning, and Conservation System (<http://ecos.fws.gov/ipac>) generated on May 27, 2025. Key: E – Federally Endangered; EXPN – Experimental population, Non-essential; PE – Proposed Endangered; PT – Proposed Threatened; T – Federally Threatened

| Common Name             | Scientific Name                   | Status                       |
|-------------------------|-----------------------------------|------------------------------|
| American alligator      | <i>Alligator mississippiensis</i> | T – similarity of appearance |
| Monarch butterfly       | <i>Danaus plexippus</i>           | PT                           |
| Northern long-eared bat | <i>Myotis septentrionalis</i>     | E                            |
| Red-cockaded woodpecker | <i>Picoides borealis</i>          | E                            |
| Red wolf                | <i>Canis rufus</i>                | E, EXPN                      |
| Rufa red knot           | <i>Calidris canutus rufa</i>      | T                            |
| Tricolored bat          | <i>Perimyotis subflavus</i>       | PE                           |
| West Indian manatee     | <i>Trichechus manatus</i>         | T                            |

### **3.1.3 Recreation**

Recreation activities occurring at and near the Site and at Albemarle Sound/Roanoke River include recreational fishing, camping, boating, kayaking, canoeing, and other common outdoor activities. Descriptions of recreation activities are included in Sections 2.1 and 3.3 of the Phase 1 RP and are incorporated by reference herein.

### **3.1.4 Archaeological and Cultural Resources**

Currently, the Trustees are not aware of archaeological, historical, or cultural resources situated within the footprints of the alternatives. However, prior to the implementation of the alternatives selected in the Final Phase 2 RP/EA, potential impacts to historic and archaeological resources will be reviewed. Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of alternatives on historic properties.

Historic properties may also be considered under NEPA. The National Register of Historic Places is a federally-maintained list of districts, sites, buildings, structures, objects, and landscapes significant in American history, prehistory, architecture, archaeology, engineering, and culture. Archaeological sites are places where past peoples left physical evidence of their occupation. Sites may include ruins and foundations of historic-era buildings and structures.

Historic properties can also include traditional cultural properties and resources. Native American cultural resources may include human skeletal remains, funerary items, sacred items, and objects of cultural patrimony. Native peoples who have or still do occupy and/or use areas at or in close proximity to proposed restoration projects include the Moratok, Secotan, and Lumbee Tribes.

The Trustees will consult with the North Carolina State Historic Preservation Office and Tribal Historic Preservation Offices from potentially affected Tribes, where appropriate, to identify historic, archaeological, and cultural resources potentially impacted by the project implementation and complete Section 106 review and compliance prior to initiating restoration implementation. More about National Historic Preservation Act compliance can be found in Section 5.9. Information concerning authorities or policies requiring Tribal consultation or describing procedures for consultation with Indian Tribes can be found in Section 5.10.

## **3.2 Components Not Analyzed in this Document**

As mentioned in the previous section, Alternatives 2, 3, and 4 were previously implemented by Domtar. Thus, these alternatives are outside the scope of this environmental assessment and dismissed from further evaluation.

The following components have been identified as not being present or affected by Alternatives 1, 5, 6, or 7; therefore, these components are not brought forward for additional analysis in this Draft Phase 2 RP/EA:

- Transportation – there will be no measurable change in transportation volume or patterns, and thus no anticipated transportation impacts associated with Alternatives 1, 5, 6, and 7.
- Air Quality – there will be no measurable emissions and no other air quality impacts associated with Alternatives 1, 5, 6, and 7.

- Demographics and Socioeconomics – no measurable anticipated impacts to demographic or socioeconomic variables, including noise, public health and safety, and local or regional economy indicators (e.g., housing or tourism), are associated with Alternatives 1, 5, 6, and 7.

### **3.3 Environmental Consequences**

#### **3.3.1 Evaluation of Alternative 1: No Action**

The Trustees found that the No Action alternative does not meet the purpose and need for restoration under either this draft Phase 2 RP/EA or the responsibilities of the Trustees under CERCLA, including as defined by NRDAR procedures under CERCLA and guided by the restoration evaluation criteria listed in Section 2.1. The Trustees have not advanced the No Action alternative as a viable option since it does not meet the purpose and need or the responsibilities of the Trustees under CERCLA. A summary of the environmental consequences associated with the No Action alternative is provided in Table 11.

#### **3.3.2 Evaluation of Alternative 5: Warren Neck Conservation (Preferred)**

This alternative would result in conservation of forested habitat of the Warren Neck property that benefits water quality and fish of Roanoke River. The shoreline of the Warren Neck property is publicly accessible by boat from the Roanoke River, thus providing protected habitat to support recreational fishing. Benefits of continued recreation would likely be realized primarily by local/regional residents. The Warren Neck property has been and will continue to be managed to ensure long-term protection of wildlife habitat, particularly those beneficial to fish and migratory birds. Upon approval by the Trustees, Domtar will continue to oversee management activities needed to reduce invasive species; remove dead, diseased, or dying trees, if warranted; and address other situations where threats could reduce ecological value of the Warren Neck property. A deed restriction on the Warren Neck property will prohibit the use or any activity that would impinge upon or interfere with preservation of the habitat located on the property in its present conditions. Overall, long-term beneficial impacts are anticipated from preservation of the Warren Neck property. Impacts from recreation are expected to be negligible to minor, direct and indirect, long-term, and both beneficial and adverse (e.g., littering).

A summary of the environmental consequences associated with Alternative 5: Warren Neck Conservation is provided in Table 11.

#### **3.3.3 Evaluation of Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements (Preferred)**

Alternative 6 would result in the improvement of floodplain connectivity on the lower Roanoke River in North Carolina, fish habitat enhancement, enhancement of flood protection, and improvement of water quality and fish passage through culverts and at water crossings. These improvements and enhancements would occur primarily through the strategic restoration of modified landforms (artificial levees, artificially breached natural levees, artificial ditches) in the floodplain below the city of Roanoke Rapids. Restoration actions would primarily include barrier retrofits, such as improved culverts that are properly-sized and designed for fish passage; low water crossings which are passable

by fish; and simple stream crossings for vehicles, such as timber bridge crossings.

Impacts associated with the above-mentioned types of restoration actions have been evaluated in NOAA's Restoration Center Programmatic Environmental Impact Statement (RC PEIS) for habitat restoration activities implemented throughout the coastal United States (NOAA 2015). The RC PEIS analyzes a suite of restoration approaches -- including restoration approaches proposed for Alternative 6 -- that NOAA believes most effectively conserves and restores the coastal and marine resources under NOAA trusteeship. DOI and NOAA representatives have reviewed the 2015 RC PEIS as part of this environmental evaluation; this included reevaluating the analysis and underlying assumptions on which the 2015 RC PEIS was based, consistent with the requirements of the Fiscal Responsibility Act of 2023 (42 U.S.C. § 4336). The analysis and underlying assumptions of the 2015 RC PEIS remain valid.

Section 2.2.2.3 of the RC PEIS describes the removal, modification, or replacement of dams, culverts, and similar infrastructure (e.g., weirs, concrete trapezoidal channels, seasonal push-up dams, failed step/pool structures) for the purposes of enhancing fish passage and habitat function in riverine systems. Similar to the restoration activities for fish passage enhancement, Section 2.2.2.11 of the RC PEIS describes removal and/or modification of levees, dikes, culverts, and similar infrastructure for the purposes of enhancing or restoring hydrologic connections in tidal or riverine wetland habitats. These types of activities, especially culvert replacement, comprise the primary restoration activities proposed for Alternative 6. Section 4.5.2.3 of the RC PEIS describes the environmental consequences associated with dam and culvert removal, modification, or replacement projects. Section 4.5.2.11 of the RC PEIS describes environmental consequences associated with wetland restoration, including levee and culvert removal. These two categories of restoration activities (i.e., fish passage and wetland restoration) typically produce short-term adverse environmental impacts and considerations, but the long-term ecological benefits -- improved water quality, sediment transport, and native resident and migratory species recovery -- demonstrate that removal of these barriers can be an effective long-term and beneficial restoration tool. The above-mentioned sections of the RC PEIS and the analyses contained within them are incorporated by reference herein.

The RC PEIS also evaluates other restoration techniques that may be used in the overall restoration strategy for Alternative 6. These techniques include 1) side channel and in-stream restoration activities aimed at restoring habitat complexity and sediment sorting processes that are critical for all life stages of fish and many other aquatic organisms and 2) stream bank restoration and erosion reduction techniques that are implemented in the area adjacent to the stream or river that are intended to improve the quality and/or quantity of riparian vegetation or other habitat features and improve the water quality of the adjacent stream. Stream and bank restoration approaches, including woody debris installation, vegetation bioengineering techniques, erosion and sediment control practices, and native vegetation planting, are described in Section 2.2.2.5 of the RC PEIS. Native planting restoration activities are further described in Section 2.2.2.11.5, Wetland Planting, of the RC PEIS. These two sections of the RC PEIS are incorporated by reference herein. Sections 4.5.2.5 and 4.5.2.11.3 of the RC PEIS describe the environmental consequences associated with instream and bank restoration and wetland planting. Stream and bank restoration practices often involve construction activities which can cause both direct and indirect, short- and long-term, minor and moderate, localized, beneficial and adverse impacts. For the types of construction activities needed to implement Alternative 6, primarily short-term, both direct and indirect, and minor adverse impacts are anticipated. Once construction has been completed, the impacts associated with instream and bank restoration activities are anticipated to

be long-term and provide direct and indirect minor to moderate benefits. Planting may cause short-term, direct adverse impacts (e.g., trampling of existing vegetation) within and near the project footprint; however, after planting activities have been completed, long-term and minor to moderate beneficial impacts are anticipated due to the erosion reduction and enhancement of native ecosystem integrity. Sections 4.5.2.5 and 4.5.2.11.3 of the RC PEIS are incorporated by reference herein.

A summary of the environmental consequences associated with Alternative 6: Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements is provided in Table 11.

### **3.3.4 Evaluation of Alternative 7: Mush Island Perpetual Conservation Easement (Non-Preferred)**

Placing a conservation easement on Mush Island would result in similar conservation benefits to the natural resources and associated services as described in the section above for Alternative 5, Warren Neck Property. Increases in recreation, such as bird watching, small non-motorized watercraft usage, and hiking, within areas of the Mush Island conservation easement are anticipated to be small. Benefits of enhanced recreation would likely be realized primarily by local/regional residents. Impacts from these small changes in recreation are expected to be minor, direct and indirect, long-term, and both beneficial and adverse (e.g., littering) from recreation activities at and in the vicinity of the property. Overall, continued recreation activities and protection of natural resources of Mush Island and mixed habitat types along the Roanoke River near Weldon, North Carolina are anticipated to result in long-term, direct and indirect, moderate, and beneficial impacts.

A summary of the environmental consequences associated with Alternative 7: Mush Island Perpetual Conservation Easement is provided in Table 11.

## **3.4 Summary of Impacts**

Implementing the alternatives as proposed and analyzed in this Draft Phase 2 RP/EA would have no major adverse impacts on Martin County habitats, on adjacent lands and waterways, or on the natural resources within each. The proposed projects may result in minor, short-term adverse impacts and both short- and long-term beneficial impacts. Direct and indirect adverse impacts are likely to be short-term and to occur only during periods of active construction activities. Periods of active construction will vary (likely intermittently for weeks to a few months), but at worst, would result in only short-term impacts.

The resources or services that may be temporarily impacted during construction activities include water quality (from temporary increases in turbidity) and noise (during construction). Some short-term, negligible to minor impacts to fish, wildlife, and vegetation in the project areas could occur, but impacts to these and other resources would be minimized by the use of best management practices (BMPs). Consequently, the minor and short-term impacts of restoration and habitat enhancement activities on soils and sediments, water quality, and noise have a low potential to result in significant impacts to these resources.

In summary, the preferred alternatives evaluated in this Draft Phase 2 RP/EA are anticipated to have mainly long-term and beneficial impacts. Floodplain and riparian habitat and natural resource services provided, such as reducing soil runoff, increasing soil carbon storage, and provision of habitat for

migratory birds, will be protected by the property owner and long-term stewardship. Preserved habitat will supplement conservation values being provided for by other conservation parcels in the region.

### **3.5 Certification**

#### **3.5.1 Certification Related to Page Limits**

The Federal Trustees certify that they have considered the factors mandated by NEPA; that the EA represents the Trustees' good-faith effort to prioritize documentation of the most important considerations required by the statute within the congressionally mandated page limits; that this prioritization reflects the Trustees' expert judgment; and that any considerations addressed briefly or left unaddressed were, in the Trustees' judgment, comparatively not of a substantive nature that meaningfully informed the consideration of environmental effects and the resulting decision on how to proceed.

#### **3.5.2 Certification Related to Deadline**

The Federal Trustees certify that this EA represents the Trustees' good-faith effort to fulfill NEPA's requirements within the congressionally mandated timeline that such effort is substantially complete; that, in the Trustees' expert opinion, they have thoroughly considered the factors mandated by NEPA; and that, in the Trustees' judgment, the analysis contained therein is adequate to inform and reasonably explain the Trustees' final decision regarding the proposed activity or decision.

Table 11. Summary of Environmental Consequences for NEPA Alternatives 1, 5, 6, and 7.

| Resource                       | Alternative 1:<br>No Action              | Alternative 5: Warren Neck<br>Conservation and Recreational<br>Uses (Preferred)                                   | Alternative 6: Floodplain<br>Reconnection, Wetland Protection,<br>and Fish Passage Improvements<br>(Preferred)                                                                                                                                              | Alternative 7: Mush Island Conservation Easement<br>(Non-Preferred)                                                                  |
|--------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Physical                       | No change from<br>current<br>conditions. | Long-term benefits to soil and<br>water quality as a result of<br>protection and stewardship.                     | Short-term, minor, direct and indirect,<br>and adverse impacts to water quality<br>and soil during construction periods.<br>Long-term, moderate to major, direct<br>and indirect, and beneficial impacts<br>to water quality.                               | Long-term and moderate to major benefits to physical resources, such as<br>water quality, as a result of protection and stewardship. |
| Biological                     | No change from<br>current<br>conditions. | Long-term, minor to moderate<br>benefits to biological resources<br>as a result of protection and<br>stewardship. | Short-term, minor, direct and indirect,<br>and adverse impacts to plants and<br>wildlife during construction periods.<br>Long-term, moderate to major, direct<br>and indirect, and beneficial impacts<br>to plants and wildlife, including fish<br>species. | Long-term and moderate to major benefits to biological resources as a result<br>of protection and stewardship.                       |
| Archaeological<br>and Cultural | No effect.                               | No effect due to no proposed<br>change in use.                                                                    | To be determined after consultations,<br>but assumed to have no effect on<br>archaeological, historical, and<br>cultural resources.                                                                                                                         | To be determined after consultations, but assumed to have no effect on<br>archaeological, historical, and cultural resources.        |
| Recreation                     | No effect.                               | Long-term, direct, minor, and<br>beneficial impacts, primarily<br>through maintained access.                      | No effect.                                                                                                                                                                                                                                                  | Long-term, direct, minor, and beneficial impacts, primarily through<br>enhanced access.                                              |

## **4.0 PROJECT FULFILLMENT AND MONITORING**

As described earlier, Domtar has completed Alternatives 2, 3, and 4. Alternative 5 will not have any associated monitoring post-recording of the deed restriction.

Implementation of Alternative 6 will include project monitoring and adaptive management protocols. The work plan will commit adequate resources to support an as-built monitoring effort to meaningfully monitor and document restoration outcomes. NOAA Restoration Center's guidance for Tier 1 Monitoring will support the Trustees' development of a monitoring and adaptive management plan (NOAA, 2024). Tier 1 metrics for hydrologic restoration (Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements) include land elevations and water levels. Trustees may coordinate with partners such as NOAA science centers and local universities to design, develop, and implement monitoring protocols.

## **5.0 COMPLIANCE WITH OTHER APPLICABLE/RELEVANT LAWS, POLICIES, AND REGULATIONS**

The preferred alternatives must comply with all applicable federal, state, Tribal, and local laws, policies, and regulations. Alternatives 2, 3, and 4 are complete, so most of the environmental compliance requirements below only apply to Alternatives 5 and 6. The following subsections provide a non-exhaustive list of federal natural resource and environmental laws, orders, and regulations considered during the development of this Draft Phase 2 RP/EA. An explanation of how compliance will be met for these applicable laws, policies, and regulations is described below. Additional environmental compliance, including at the state, Tribal, or local level, may be required depending on the specific activities required for a restoration project.

### **5.1 Clean Water Act**

The Clean Water Act (33 U.S.C. § 1251, et seq.) is the principal law governing pollution control and water quality of the Nation's waterways. Section 404 of the Clean Water Act authorizes a permit program to regulate the discharge of dredged or fill material in navigable waters. The U.S. Army Corps of Engineers (USACE) administers the program.

Compliance: Alternative 5, Warren Neck Property, does not propose a discharge of dredged or fill materials into waters of the United States; therefore, authorization from the USACE is not required. Alternative 6, Floodplain Reconnection, Wetland Protection, and Fish Passage Improvements, will require coordination with the USACE to ensure compliance with Section 404 of the Clean Water Act.

### **5.2. Coastal Zone Management Act**

The goal of the federal Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451, et seq., 15 C.F.R. Part 923) is to preserve, protect, develop and, where possible, restore and enhance the Nation's coastal resources. The federal government provides grants to states with federally approved coastal management programs. Section 1456 of the CZMA requires any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone to be consistent,

to the maximum extent practicable, with the enforceable policies of federally-approved state management programs. Further, no federal license or permit may be granted without giving the State the opportunity to concur that the project is consistent with the State's coastal policies.

Compliance: Consultation with the North Carolina Department of Environmental Quality will be completed to ensure implementation of Alternatives 5 and 6 will be consistent with the North Carolina Coastal Management Act.

### **5.3 Endangered Species Act (and other regulations protecting fish, wildlife, and plants)**

The federal Endangered Species Act (ESA) (16 U.S.C. § 1531, et seq., 50 C.F.R. Parts 17, 222, 224) directs all federal agencies to conserve threatened and endangered (T&E) species and their habitats and encourages such agencies to utilize their authority to further these purposes. Under the ESA, the NOAA NMFS and the USFWS publish lists of endangered and threatened species. Section 7 of the ESA requires that federal agencies consult with these agencies to minimize the effects of federal actions on endangered and threatened species.

Compliance: Because of the restoration and enhancement nature of the proposed habitat projects and the best management practices (BMPs) that will be used, the Trustees anticipate only minor and temporary adverse impacts to the biological environment, including fish, wildlife, and their supporting habitats. The Trustees will conduct necessary ESA Section 7 consultations with USFWS and the NOAA NMFS prior to implementation of any future restoration projects associated with Alternative 6. However, since no change in use and management of the Warren Neck property is proposed, no consultation with USFWS and NOAA NMFS is necessary for Alternative 5.

### **5.4 Fish and Wildlife Conservation Act**

The Fish and Wildlife Conservation Act of 1980 (16 U.S.C. § 2901 and 50 C.F.R. § 83) provides for protection and management of non-game fish and wildlife and their habitats.

Compliance: The intent of NRDAR is to restore, replace, enhance, and/or acquire equivalent natural resources (fish, wildlife, and their supporting habitats) and resource services as were injured by releases of hazardous substances. The Trustees believe the restoration activities described in the RP/EA will enhance habitats and fish and wildlife, thereby benefiting natural resources and enhancing the recreational experience.

### **5.5 Magnuson-Stevens Fishery Conservation and Management Act**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. § 1801, et seq.) as amended and reauthorized by the Sustainable Fisheries Act (Public Law 104297), established a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans by the regional fishery management councils, federal agencies are obligated to consult with the Secretary of the U.S. Department of Commerce with respect to any action authorized, funded, or undertaken or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

Compliance: Consultation with the NOAA NMFS will be completed to ensure implementation of Alternative 6 will not adversely affect EFH. Any EFH consultation will need to be completed during the design phase, in order to complete the design phase prior to initiating the project. The results of the consultation will be documented and added to the administrative record for this NRDAR case. Alternative 5 will also not adversely affect EFH but EFH consultation is not required because the Federal Trustees are not authorizing, funding, or undertaking the recordation of a deed restriction on the Warren Neck property.

## **5.6 Marine Mammal Protection Act**

The Marine Mammal Protection Act (16 U.S.C. § 1361, et seq.) establishes a moratorium on the taking and importation of marine mammals and marine mammal products, with exceptions for scientific research, allowable incidental taking, subsistence activities by Alaskan natives, and hardship. The Act provides authority to manage and protect marine mammals, including maintenance of the ecosystem.

Compliance: The proposed alternatives do not involve construction that would harm or take marine mammals.

## **5.7 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (16 U.S.C. § 715, et seq.) provides for the protection of migratory birds. The Act does not specifically protect the habitat of these birds but may be used to consider time of year restrictions for activities on restoration sites where it is likely migratory birds may be nesting and/or to stipulate maintenance schedules that would avoid the nesting seasons of migratory birds.

Compliance: Consultation with the USFWS constitutes compliance with this Act.

## **5.8 National Environmental Policy Act (NEPA)**

Actions undertaken by the Trustees to restore natural resources or services under CERCLA and other federal laws are subject to NEPA and agency-specific NEPA implementing procedures. These authorities outline the responsibilities of federal agencies in their decision-making process concerning proposed actions, including the federal agencies' responsibility to consider the relevant NEPA documentation. NEPA requires that an agency take a hard look at proposed major federal actions that have the potential to significantly affect the human environment. If an impact is considered significant, then an Environmental Impact Statement (EIS) is prepared. If the impact is considered in an Environmental Assessment (EA) and determined to be not significant, then a Finding of No Significant Impact is issued. Certain types of agency actions are categorically excluded from preparation of an EA or EIS. 42 U.S.C. 4336(a)(2).

Compliance: In accordance with NEPA, this Draft Phase 2 RP/EA summarizes (through incorporation by reference) the affected environment for the alternatives that are proposed major Federal Actions (alternatives 1, 5, 6, and 7); describes the purpose and need for restoration actions; identifies a reasonable range of alternatives; assesses the environmental consequences of the NEPA alternatives, where necessary; and summarizes the opportunity the Trustees will provide for public participation in the decision-making process. After conducting the NEPA analysis, the Trustees may conclude that the

impacts associated with the preferred alternatives identified herein do not meet the threshold requiring an EIS. If the impacts are considered not significant, then an Environmental Assessment (EA) is drafted and a Finding of No Significant Impact (FONSI) is issued. In this instance, since NOAA is the lead federal agency for NEPA and FWS is a cooperating agency, then each agency will issue a separate FONSI.

## **5.9 National Historic Preservation Act (NHPA)**

The National Historic Preservation Act of 1966 (NHPA) established a process to preserve historical and archaeological sites affected by projects directed or funded by the federal government. Cultural resources are those parts of the physical environment, natural and built, that have cultural value to some socio-cultural groups and human social institutions. Cultural resources include historic sites, archeological sites and associated artifacts, sacred sites, traditional cultural properties, cultural items, and buildings and structures. Most cultural resources concerns can be identified through the Section 106 process of the NHPA. Absent objections from Historic Preservation Officers or from other interested persons (36 C.F.R. §§ 800.2(c)(2), (4), and (5)), the NHPA has legal standing in land acquisition projects, projects involving ground disturbance, and projects impacting buildings and structures 50 years and older.

Compliance: Compliance with the NHPA is undertaken through consultation with the North Carolina State Historic Preservation Office (SHPO), at a minimum. If an eligible historic property or archeological resource is within the area of one of the proposed alternatives, then an analysis should be made to determine whether the alternative would have an adverse effect on historic properties or archeological resources. For potential impacts to Tribal cultural, historic, or religious resources or properties, NHPA regulations require federal agencies to acknowledge the expertise of affected Native American tribes in determining which properties are of religious and cultural significance to them. Prior to completion of this Phase 2 RP/EA, the DOI will consult with the SHPO and Tribal Historic Preservation Office (THPO), if applicable, under NHPA about the potential adverse effects of Alternative 5 on historic properties or archeological, religious, and cultural resources. These consultation letters will be added to the administrative record. Prior to Alternative 6 project implementation, the DOI will complete required NHPA consultation(s).

## **5.10 Other Legal Authorities Requiring Tribal Consultation**

In addition to the regulations implementing Section 106 of the NHPA requiring consultation with affected Native American tribes (36 CFR 800.(c)(2)) throughout the historic preservation review process, there are several authorities or policies requiring Tribal consultation or describing procedures for consultation with affected Native American tribes.

- Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments (November 6, 2000): In summary, this Executive Order reaffirms the Federal government’s commitment to tribal sovereignty, self-determination, and self-government. Its purpose is to ensure that all Executive departments and agencies consult with Indian tribes and respect tribal sovereignty as they develop policy on issues that impact Indian communities.
- Presidential Memorandum for the Heads of Executive Departments and Agencies on Tribal Consultation and Strengthening Nation-to-Nation Relationships (January 26, 2021): In this Memorandum, President Biden established as a priority of his Administration to make respect for Tribal sovereignty and self-governance, commitment to fulfilling Federal trust and treaty

responsibilities to Tribal Nations, and regular, meaningful, and robust consultation with Tribal Nations cornerstones of Federal Indian policy. The Memorandum directs each Federal agency to submit to the Office of Management and Budget a “detailed plan of actions the agency will take to implement the policies and directives of Executive Order 13175,” which addresses consultation and coordination with Indian Tribal governments. Department of the Interior has taken initial steps focusing on lasting, substantive improvements it can make in its implementation of the policies and directives of E.O. 13175. More about DOI’s initial steps towards improving consultation and coordination with Indian Tribal governments can be found at <https://www.doi.gov/priorities/tribal-consultation/consultation-interior-improving-consultation>

- Part 512, Chapter 4 of the DOI’s Departmental Manual provides the requirements for DOI government-to-government consultation between appropriate tribal officials and DOI officials. It expands and clarifies DOI’s policy on consultation with Indian Tribes and Alaska Native Claims Settlement Act of 1971 and acknowledges the provisions for conducting consultation in compliance with Executive Order 13175, applicable statutes, and administrative actions.
- Part 512, Chapter 5 of the DOI’s Departmental Manual provides the procedures and process for DOI government-to-government consultation between appropriate tribal officials and DOI officials.

### **5.11 Rivers and Harbors Act**

The federal Rivers and Harbors Act (RHA) (33 U.S.C. § 401, et seq.) regulates development and use of the Nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and vests the USACE with authority to regulate discharges of fill and other materials into such waters.

Compliance: Coordination with the USACE, where necessary, would be completed pursuant to Section 10 of this Act before site-specific restoration actions for Alternative 6 are undertaken.

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## **APPENDIX**

(reserved for any attachments, such as FONSI or environmental compliance documents)