

Dominion Energy Virginia Crystal City Substation Oil Spill

Annual Report



June 2021

PREPARED BY:
U.S. Fish and Wildlife Service
National Park Service
District of Columbia Department of Energy and Environment
Virginia Department of Environmental Quality



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Background

On January 24, 2016 a transformer tank rupture at the Crystal City Substation (CCS), owned and operated by Virginia Electric and Power Company d/b/a Dominion Energy Virginia¹ (DEV), resulted in the discharge of approximately 13,500 gallons of mineral oil dielectric fluid. The Crystal City Substation is located at 18th Street South and South Fern Street in Arlington County, Virginia. Abatement documents report 11,120 gallons of oil were recovered from spill containment facilities and concrete vaults that prevented product from leaving CCS property². An undetermined quantity of oil was observed off the CCS property in the Roaches Run Waterfowl Sanctuary (RRWS) within the George Washington Memorial Parkway and an oil sheen was reported in the Potomac River between I-395 and the Woodrow Wilson Bridge, 7.4 miles downstream of the CCS. This discharge is referred to as the Dominion Energy Virginia Crystal City Station Oil Spill, hereinafter referred to as the DEV CCS Spill.

Oil from the DEV CCS Spill injured migratory birds and their habitats. Additionally, the presence of DEV CCS Spill response activities in the Gravelly Point Parking area in George Washington Memorial Parkway resulted in lost visitor use.

The United States Department of the Interior, acting through the United States Fish and Wildlife Service and, the National Park Service; the District of Columbia Department of Energy and Environment (DOEE); and the Virginia Department of Environmental Quality are the natural resource Trustees for this spill. The Damage Assessment and Restoration Plan/Environmental Compliance Analysis ([Final DARP/ECA](#)) was prepared by natural resource trustees to restore natural resources and resource services injured or lost due to the discharge of oil from the DEV CCS. The DARP/ECA informed the public about the natural resource injuries caused by the DEV CCS Spill and restoration alternatives that compensate for those injuries.

The Trustees evaluated a range of restoration alternatives that address specific injuries associated with the DEV CCS Spill that may compensate the public for the injury to natural resources and the loss of resource services pending restoration. The Trustees identified a preferred restoration alternative of habitat enhancement in Roaches Run Waterfowl Sanctuary (Figure 1) along with educational signs to enhance the visitor experience and understanding of the habitat and waterfowl.

¹ DEV is a state regulated business unit of the parent company Dominion Energy, Inc.

² An estimated additional 1,967 gallons of oil entrained in soil and gravel were also recovered from the CCS facility. The Initial Abatement Report dated February 26, 2016 and associated DEV response to DOEE's request for additional information contains a detailed description of the spill and oil recovery.



Figure 1. Location of Proposed Native Wetland Vegetation Establishment in Roaches Run Waterfowl Sanctuary, DARP/ECA March 2018.

A settlement agreement reached on May 15, 2018, among the Trustees and the party responsible for the spill, resolved claims for natural resource damages. The settlement included a total payment of \$390,385 to the Trustees for the following: 1) \$63,207 to oversee restoration implementation, 2) \$314,675 for the Roaches Run Vegetative Planting, and 3) \$12,503 for education signage related to lost recreation use of the Mount Vernon Trail and Potomac River.

Educational Signage

Project Overview

As part of the restoration project, two educational signs were installed in the parking area of the Roaches Run Waterfowl Sanctuary (Figure 2) and a separate regulatory sign was installed at Gravelly Point. One educational sign highlights the history of Roaches Run, while the other focuses on the unique habitat and the bird and wildlife species that are present. The sign at Gravelly Point focuses on discouraging the public from feeding and attracting wildlife. The signs adhere to NPS sign standards.



Figure 2. Location of Wayside and Educational Signs.

Project Status

Figures 3 – 5 show the graphics for the signs that were installed in September 2020. Figure 3 shows the Do Not Feed Wildlife sign installed in the area outlined in yellow in Figure 2. Figure 4



Figure 3. Do Not Feed Wildlife sign.

is the educational wayside for natural resources in the area. The wayside includes information on waterfowl, fish and reptiles that can be observed in the local area. A historical context of the Roaches Run area is captured in the wayside shown in Figure 5. Both waysides were installed in the area outlined in red on Figure 2 and are in the featured picture on the cover of this report.

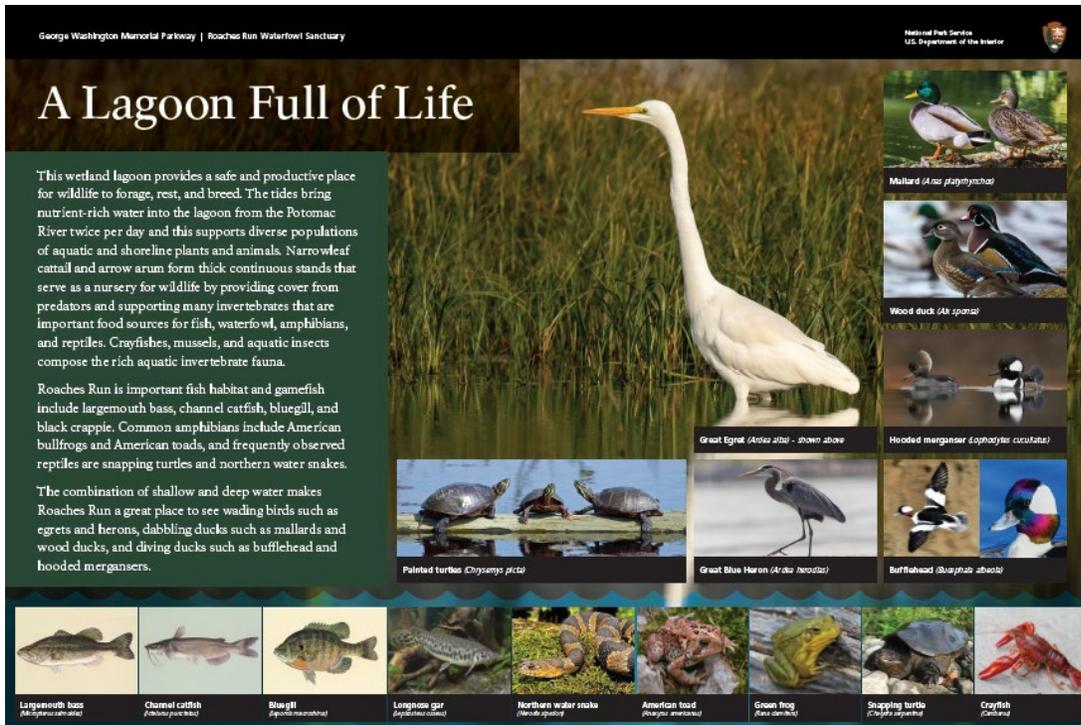


Figure 4. Natural Resource wayside showing fauna found in the local area.

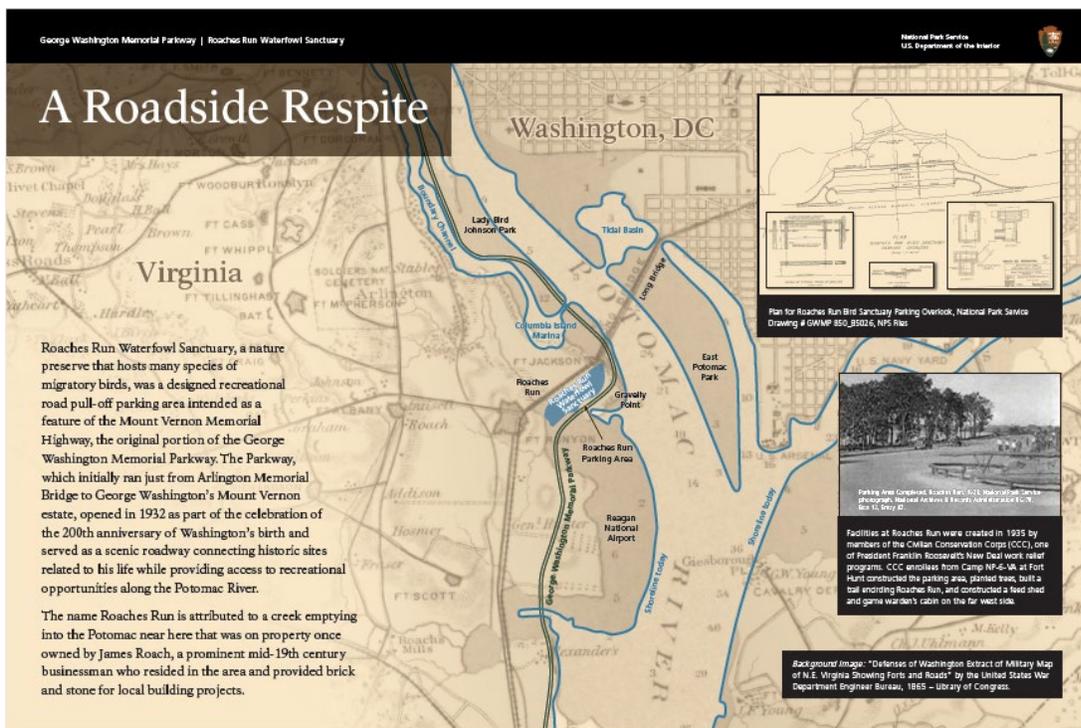


Figure 3. Historical Wayside on Roaches Run.

Enhancement of Habitat at Roaches Run Waterfowl Sanctuary

Project Overview

Alternative 3 in the DARP/ECA describes planting approximately 5.3 acres of cattails and other native vegetation in RRWS to enhance the function of freshwater wetlands. The additional vegetation would enhance existing waterfowl, wading bird, and shorebird habitat within the waterfowl sanctuary. The additional habitat will also benefit multiple wetland resources such as benthic invertebrates, fisheries, and improve overall water quality within RRWS and in the Potomac River.

Plant establishment will occur at a site north of Runway 15-33 associated with Ronald Reagan Washington National Airport. The enhancement site and vegetation species selection are designed to discourage any potential aircraft-bird strikes that may occur because of the project. Narrowleaf cattail (*Typha augustifolia*) and arrow arum (*Peltandra virginica*) form thick continuous stands that are undesirable to the four bird species (Canada Geese, Gulls, Hawks, and Vultures) most commonly involved in aircraft strikes (MOU 2003). Use of these plant species is intended to reduce the occurrence of these bird species at the area of RRWS associated with the north end of Runway 15-33. Further efforts involve the use of temporary enclosures with netting to prohibit use of the enhancement area by birds, mammals, and reptiles until plants are fully established and mature. The expectation is that at a mature stage of plant establishment the restoration area will not be desirable to bird species most commonly involved in aircraft strikes.

Qualitative monitoring shall be conducted periodically following the growing season after the initial planting. Monitoring will ensure that the enclosures are still intact and performing adequately, measure for native plant survival and colonization by invasive non-native undesirable species.

Project Status

In 2019, a contract for planting, monitoring, and maintenance of 3.0 acres was awarded. The cost of wetland enhancement was greater than anticipated so the project scope was reduced from the original plan of 5.3 acres. The Trustees approved the modification in planting area to maximize the restoration acreage within the given budget. NPS later identified additional funds and the contract was modified increasing the wetland enhancement acreage to 4.0 acres. Figure 6 shows the project area with the 4.0-acre area that was planted.



Figure 6. Roaches Run Waterfowl Sanctuary Wetland Enhancement Project Area.



Figure 7. Initial cattail planting along shoreline.

Planting and construction of the exclusion fencing were originally scheduled to start in June of 2020. Due to health concerns related to COVID-19, the start of planting was delayed until July 2020 for the safety of the field crew. All field work was completed between July 13th and August 7th. Figure 7 shows the shoreline immediately after the planting of cattails. The enclosure fencing is shown in Figure 8.



Figure 8. Enclosure fencing in the planting area.

The water depths were higher than anticipated due to a particularly wet year and a storm event during planting. The high-water levels appear to have limited plant growth. The depth of water prevented leaves from extending out of the water for any length of time. Other potentially limiting factors include planting later than originally scheduled, turbidity, and reduced light penetration due to the amount of silt in the water column. There was significant die back of the plants. Only a limited number of plants along the shoreline and on the mudflat experienced growth above the waterline. Continued monitoring will be needed to determine the extent of mortality, which is estimated to be greater than 90%. NPS is currently evaluating replanting options given contractual and budget constraints. Consultations among the trustees exploring various replanting strategies are ongoing.

Funding Summary

The Trustees signed Resolution #3 on March 17, 2021 authorizing the release of the remaining \$28,832.00 of management funds from the DEV CCS account in the DOI Restoration Fund. The funds were split between NPS management (\$5,000.00) and restoration (\$23,832). Table 1 provides a summary of all disbursements by Trustee. The NPS status of funds is presented in Table 2 as of the end of May 2021. There is a balance of \$23,832.00 for restoration and \$5,793.00 for NPS project management.

Table 1. DOI Restoration Fund Summary Activities and Balance

DOI Restoration Fund						
Annual Reporting	Settlement Funds Available by Year	Funds Disbursed				Fund Balance
		NPS	FWS	DOEE	DEQ	
Restoration 2019						
Wetland Restoration	\$314,675	\$314,675	\$0	\$0	\$0	\$0
Signage	\$12,503	\$12,503	\$0	\$0	\$0	\$0
Funds reallocated from Oversight		\$8,000				
NPS Funds		\$14,241				
Totals:	\$327,178	\$349,419				\$0
Management¹						
Fiscal Year 2019						
Oversight (2 withdrawals \$15K ea.)	\$63,207	\$30,000	\$4,375	\$0	\$0	\$28,832
Funds reallocated to Restoration		-\$8,000				
FY19 Sub Total:	\$63,207	\$22,000	\$4,375	\$0	\$0	\$28,832
Fiscal Year 2020						
Oversight	\$28,832	\$0	\$0	\$0	\$0	\$28,832
FY20Sub Total:	\$28,832	\$0	\$0	\$0	\$0	\$28,832
Fiscal Year 2021						
Oversight	\$28,832	\$5,000				
Funds reallocated to Restoration	\$0	\$23,832	\$0	\$0	\$0	\$0
FY20Sub Total:	\$28,832	\$28,832	\$0	\$0	\$0	\$0
Totals:		\$50,832	\$4,375	\$0	\$0	\$0

¹ Funds earn interest while in the DOI Restoration Fund.

Table 2. NPS Project Account Summary Activities and Balance

NPS Project Account			
Annual Reporting	Funds Received	Spent	Project Balance
Restoration 2019			
Wetland Restoration	\$314,675	\$314,675	\$0
Signage	\$12,503	\$12,503	\$0
Funds reallocated from Oversight	\$8,000	\$8,000	\$0
NPS Funds	\$14,241	\$14,241	\$0
FY19 Sub Totals¹:	\$314,675	\$314,675	\$0
Restoration 2021			
Wetland (Reallocated Mgt. Funds)	\$23,832	\$0	\$23,832
FY21 Sub Totals:	\$23,832	\$0	\$23,832
Restoration Grand Totals⁴:			
	\$338,507	\$314,675	\$23,832
Management²			
Fiscal Year 2019			
Oversight (2 withdrawals \$15K ea.)	\$30,000	\$7,230	\$14,770
Funds reallocated to Restoration	-\$8,000	\$0	\$0
FY 19 Sub Total:	\$22,000	\$7,230	\$14,770
Fiscal Year 2020³			
Oversight	\$0	\$7,117	\$7,653
FY20 Sub Total:	\$0	\$7,117	\$7,653
Fiscal Year 2021³			
Oversight	\$5,000	\$6,860	\$5,793
FY20 Sub Total:	\$5,000	\$6,860	\$5,793
Management Grand Totals:	\$27,000	\$21,207	\$5,793

¹ Restoration funds contracted

² Includes funds for DOI indirects

³ Fiscal Year through end of May

⁴ No FY20 restoration funds received or spent