

# Natural Resource Damage Assessment and Restoration Program

## *DuPont Newport Superfund Site, Delaware*

### **The Problem**

In 1902, pigment production began at the Newport Site in Wilmington, New Castle County, Delaware, and was owned by Krebs and later DuPont, who bought the facility in 1929. DuPont continued to manufacture pigment until 1984. Two portions of the Site bordering the Christina River were used for waste disposal. The waste migrated through runoff to the surrounding wetlands and the River. Contaminants of Concern (COCs) at the Site were primarily lead, cadmium, and zinc. In 1987, the U.S. Environmental Protection Agency (EPA) added this Site to the National Priorities List (NPL). The Site was remediated between 1996 and 2001.

### **Restoring the Resources**

In 2002, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (USFWS), and the Delaware Department of Natural Resources and Environmental Control (DNREC) (Trustees) pursued a cooperative natural resources damage assessment with DuPont (Responsible Party). During negotiations 40 potential restoration projects were considered and a preferred alternative (“Pike Property”) was selected. In 2006, a settlement was reached. DuPont paid over \$2.2 million dollars for natural resource damages, approximately \$608,933 was used to improve tidal wetland habitat.

### **Highlights**

- All parties worked cooperatively together to settle a damage assessment case.
- Restored and protected over 2,000 feet of eroding shoreline using natural materials.
- Increased tidal exchange to channel and created fish rearing ponds and used the spoil to nourish marsh.
- Improved the habitat by removing *Phragmites* and planting native shrubs for song birds.
- Reduced costs by using USFWS and DNREC staff to implement project.

### **Accomplishments**

The Pike Property is located along the Mispillion River between Kent and Sussex Counties in Delaware. This privately owned 56 acre property included a degraded oxbow overgrown by *Phragmites*, an invasive plant and eroding banks.



### Bank Protection

- Along the river, large diameter coarse woody debris (LWD) were used to provide immediate protection from boat wakes and trap organic and mineral sediment. Long-term protection will be provided by the re-establishment of vegetation. In addition to bank protection, the woody debris will enhance fish and wildlife habitat by providing roosting, nesting, refuge, and foraging opportunities



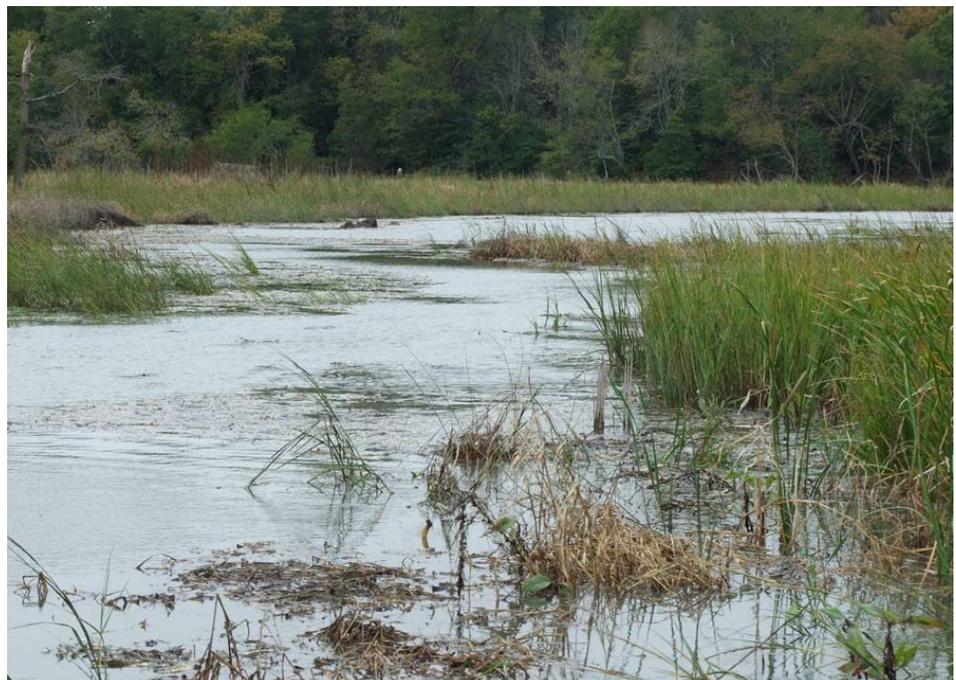
### Removal of Invasive Species

- Phragmites and dense stands of cattails were removed by aerial spraying with glyphosate for three consecutive years. Standing dead canes were removed by controlled burns. A more diverse plant community has recovered in 90% of the marsh. Native plants, such as pickerelweed (*Pontederia cordata*), arrow arum (*Peltandra virginica*) and salt marsh cordgrass (*Spartina alterniflora*), now dominate the site. Wild rice (*Zizania aquatica*) has begun to colonize areas where soil is thin layered. A combination of tree seedlings and shrubs were planted on the natural upland levees adjacent to the oxbow channel in order to enhance the song bird habitat.



### Creation of Fish Rearing Areas

- The oxbow channel has filled in over 50 years because tidal exchange has been diminished. A portion of the oxbow channel was dredged to a depth below Mean Lower Low Water. Selected mudflats were dredged to create fish rearing areas. Based on photo records from 1938, these mudflats were once tidal pools. Spoil from the dredging was broadcast over the marsh in a thin layer ( $\leq 3$  inches).



**For more information, contact:  
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*Completed channel at high tide.*

*All photos, USFWS*

<http://www.fws.gov>

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