# Freshwater Wetland Restoration / Mitigation resulting from Enforcement Actions between 2003 and 2017

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#### Background

One of the Bureau of Coastal and Land Use Enforcement (CLUE) responsibilities is enforcing the regulatory program established under the Freshwater Wetlands Protection Act that became effective on July 1, 1988. The intent of the Act is to "preserve the purity and integrity of freshwater wetlands from unnecessary and undesirable disturbance." CLUE personnel respond to reports or complaints of possible land use violations received from municipal and county officials, private citizens, and other public and private organizations. CLUE also conducts permit compliance inspections of project sites with Land Use permits to ensure compliance with their conditions, requirements, and limitations. If violations are found, the size, scope, and circumstances are documented and the Bureau issues enforcement actions, such as Notices of Violation and Administrative Orders, to compel compliance.

### Data and Methodology

The purpose of this map is to identify freshwater wetlands that have been restored or mitigated as a result of enforcement actions between 2003 and 2017. Following the discovery of a violation, CLUE personnel record all inspection information into a Compliance Evaluation activity screen in NJEMS (New Jersey Environmental Management System) including an inspection attribute for "Area Filled or Disturbed – fw wetland" to reflect the size of disturbance that has occurred.

Once a site comes into compliance, a second attribute is entered into an Enforcement Action activity screen that documents the area that has been restored or otherwise mitigated. The types of mitigation are:

- Restored Illegally Filled or Degraded Wetlands returned to preexisting topography and planted with native trees and shrubs.
- Land Donated Land that is permanently preserved, sometimes at another location.
- Deed Restricted Land that is permanently protected by a conservation easement.
- Mitigated Land is restored or created at another site, which may include a Mitigation Bank.
- Contribution to the Mitigation Fund Monetary donation to Wetland Mitigation Fund that is used by the Mitigation Council to fund a mitigation project.

A Web Intelligence report was created to compile specific site information including responsible party, site location by State Plane coordinates (stored in Masterfile), mitigation type, and total area mitigated during a fifteen-year period from 2003 to 2017. The report was exported as an Excel spreadsheet and opened State Plane coordinates. The XY Event Layers were then exported as feature classes for each category. The symbology of the feature classes was set to graduated symbols to reflect the size of the mitigation type. Symbols were manually grouped into eight size categories for all feature classes

in ArcGIS Pro. An XY Event Layer was created for each type of mitigation using the except Contribution to Mitigation Fund, which was grouped into six categories. For display purposes, the "Disperse Markers' tool was used to spread out clusters of points.



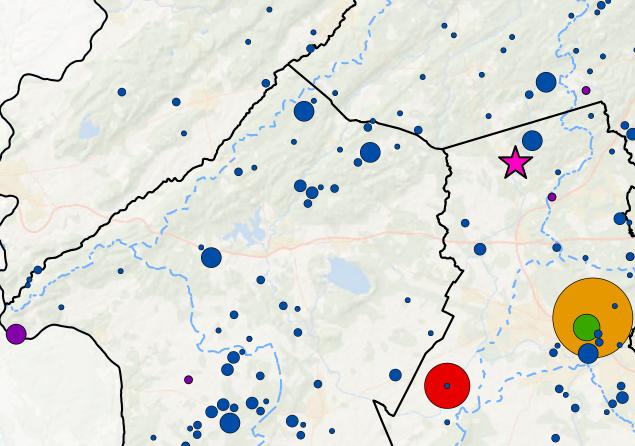


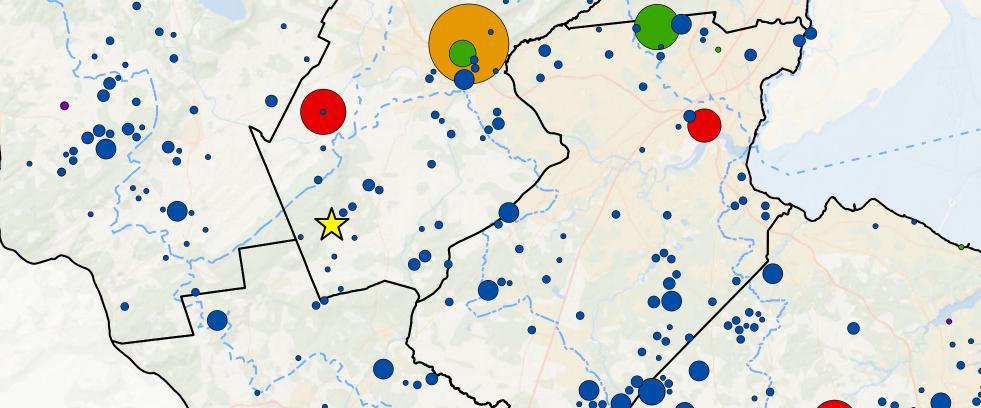
egally cleared 0.4 acres of a wooded freshwater wetland nd. The wetland was documented breeding habitat for the State-threatened Barred Owl (Strix varia).

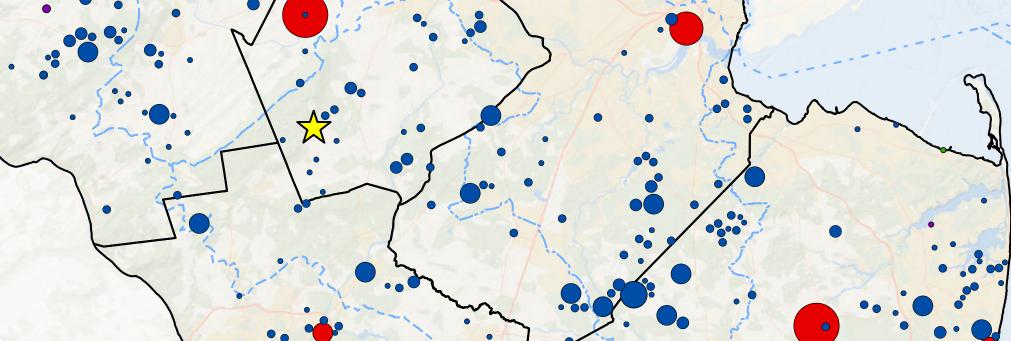


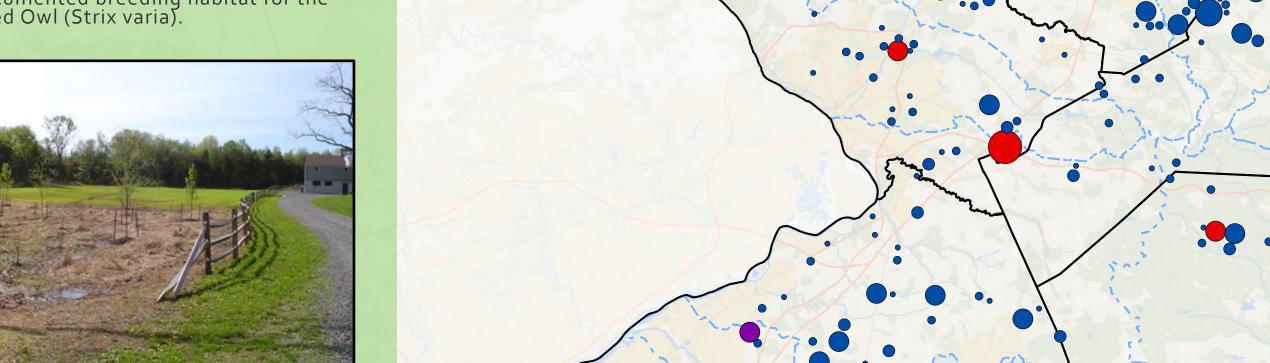
reestablish the natural topography and planting native trees and shrubs.

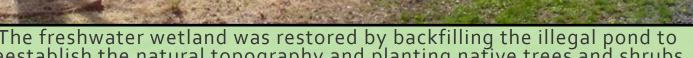


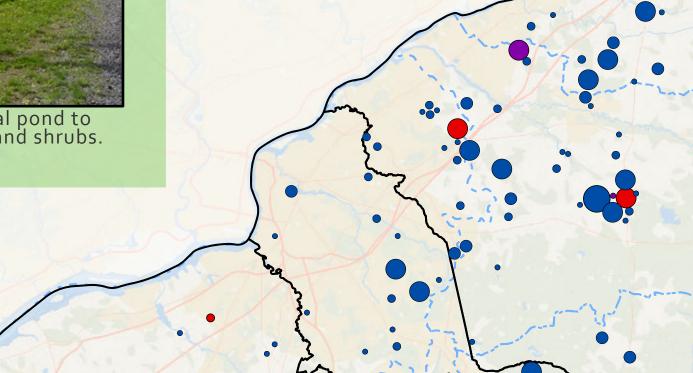


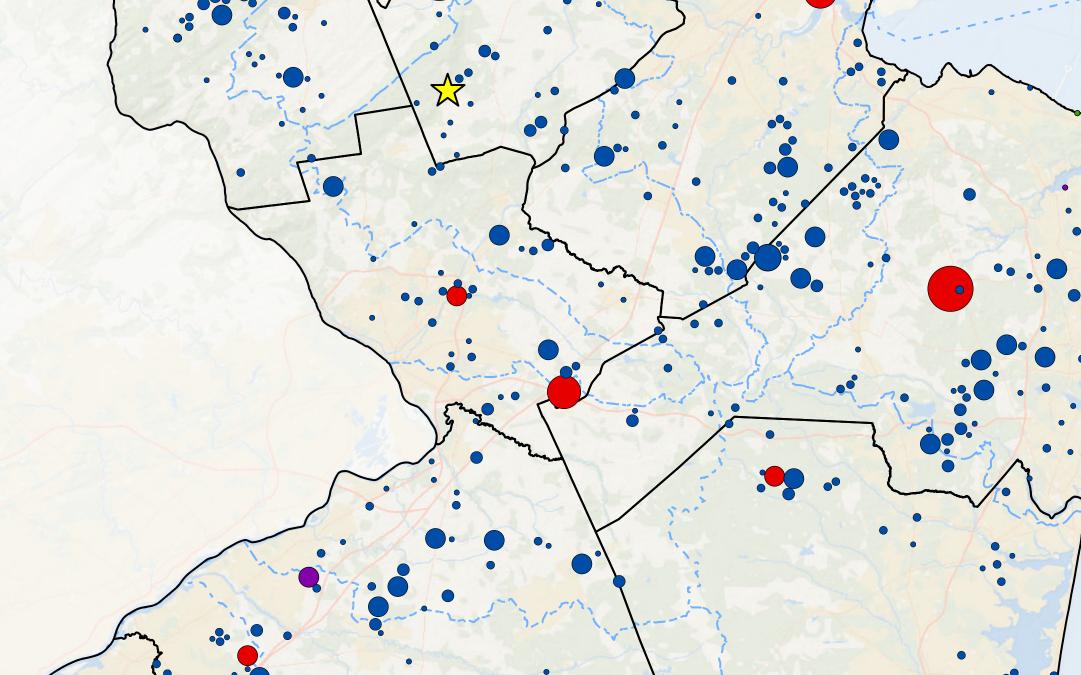














Until the 1970's wetlands were viewed as wastelands and were often used as dumps, filled for development, or drained for agriculture. The U.S. Fish and Wildlife Service estimated that by the mid 1970's, 20 percent of New Jersey's wetlands had been destroyed, with losses as high as 72 percent in Hunterdon County and 50 percent in parts of the Passaic River basin. Freshwater wetlands play a vital role in the social, economic, and environmental health of our nation in the following ways:

- Water Quality protection Wetlands protect drinking water by filtering out chemicals, pollutants, and sediments that would otherwise clog and contaminate our waters.
- Water Storage Wetlands provide natural flood protection by soaking up runoff from heavy rain and snow melts and recharge groundwater during times of drought.
- Wildlife Habitat Wetlands provide essential breeding, spawning, nesting, and wintering habitats for a major portion of the State's fish and wildlife, including migrating birds, endangered species, and commercially and recreationally important wildlife.
- Wetlands provide high quality open space for recreation and tourism.





owner illegally cleared 1.1 acres of a freshwater wetland élizéd over 500 feet of a Category One stream. Vood Turtle (Glyptemys insculpta) and was associated with



nout the wetland area and modifying the stream



Eight years after restoration. In 2009, prior to site restoration, a fish survey was conducted with the assistance of New Jersey Division of Fish and Wildlife, Bureau of Freshwater Fisheries to document the quantity of Brown Trout (Salmo trutta). A follow-up survey was conducted and 2013 and found a 185% increase in the number of Brown Trout using the restored stream channel.

## Restoration/Mitigation Type

- **Area of Land Donation**
- **Area Deed Restricted**
- **Area Mitigated**
- 0.1 0.5 Acre
- 0.5 1 Acre ● 1 - 5 Acres
- **5 10 Acres** 10 - 20 Acres
- 191 Acres
- **Area Restored 325 Acres**
- **Area Donated 206 Acres Area Deed Restricted - 130 Acres**
- 20 40 Acres **Area Mitigated - 20 Acres** 
  - Total 681 Acres

Total - \$1,345,900



- \$500 \$4,000 • \$4,001 - \$21,00**0**
- \$21,001 \$45,00**0**
- **•** \$45,001 \$200,000
- \$360,001 \$450,000



**\$200,001 - \$360,000** 



#### References

Basemap - Esri, Garmin, GEBCO, NOAA NGDC, and other contributors Association of New Jersey Environmental Commissioners, Freshwater Wetlands Protection in New Jersey, Third Edition NJDEP Division of Land Use Regulation - http://www.nj.gov/dep/landuse/ Photos Credit: Robert Clark & Michael Palmquist, NJDEP CLUE

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**Watershed Management Areas**