

Violet Freshwater Diversion



What is a freshwater diversion?

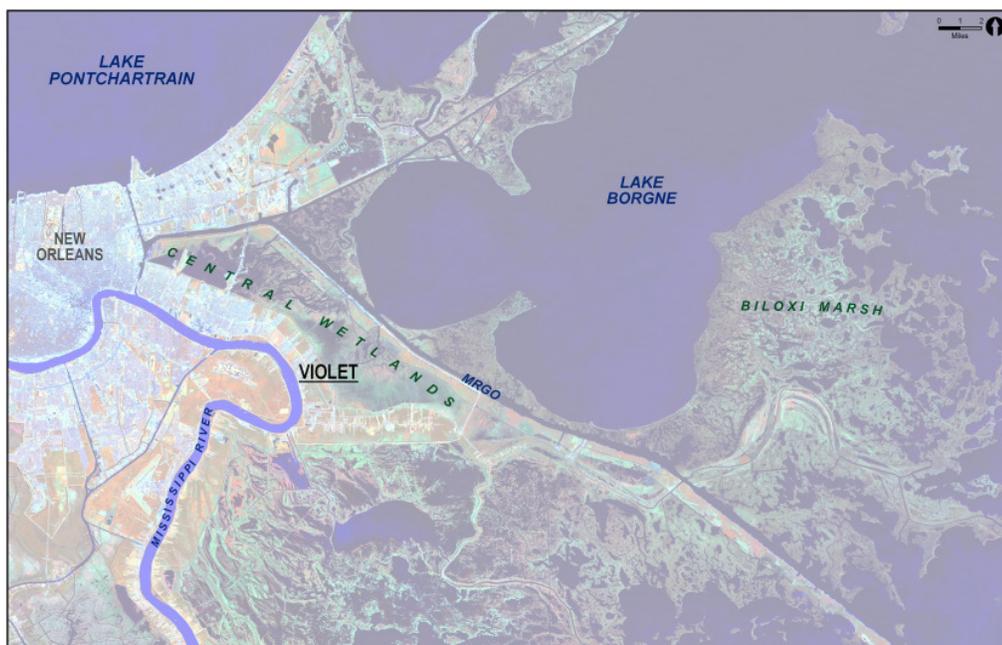
Freshwater diversions are manmade, controlled structures that allow the reintroduction of mainly river water into wetland areas or shallow open water. Freshwater diversions help reduce salinity in wetland and are useful in areas negatively impacted by saltwater intrusion.

Why Violet?

Saltwater intrusion resulting from the MRGO and other sources has degraded tens of thousands of acres of wetlands and changed salinities in the Pontchartrain Basin. Recreating the historic connection between the Mississippi River and the surrounding wetlands is the most sustainable way to reduce saltwater intrusion, restore and rehabilitate marshes over the long term. The goal of Violet freshwater diversion is to restore historic coastal habitat, like swamps and marshes, affected by the MRGO channel. In order to maintain conditions that would support the restoration of cypress in the Central Wetlands and marsh in the Lake Borgne Landbridge and Biloxi Marsh, a freshwater diversion that is capable of responding to variability of salinities from drought, sea level rise, and other environmental conditions is needed. The restoration of these areas will also help protect communities from storm surge events. Biloxi Marsh, in particular, has been identified by the Army Corps as a Critical Landscape Feature for storm surge protection.

Background*

- In 1984, the salinity targets for Violet Diversion were developed to enhance fish and wildlife resources in the Pontchartrain Basin, re-establish a desirable salinity regime in the historic oyster reefs in the Biloxi Marsh, and mimic historic Mississippi River flooding (USACE 1984). The diversion will help to enhance barrier oyster reefs along the fringes of the Biloxi Marsh.
- More recently, it was determined that a freshwater diversion is needed to achieve the habitat goals of the MRGO Ecosystem Restoration Plan Feasibility Study. A diversion at or near Violet is part of the Tentatively Selected Plan (TSP) for the MRGO Ecosystem Restoration Plan.
- A freshwater diversion that pulses at 7,000 cubic feet per second (cfs)** mid-April-May, then reduces flow to 1,000 cfs June-April will meet the project criteria established in WRDA 2007 Section 3083, based on average conditions. The proposed diversion will have a capacity up to 10,000 cfs. (The current Violet Canal has a capacity of approx. 300 cfs)



U.S. Army Corps of Engineers, 2010

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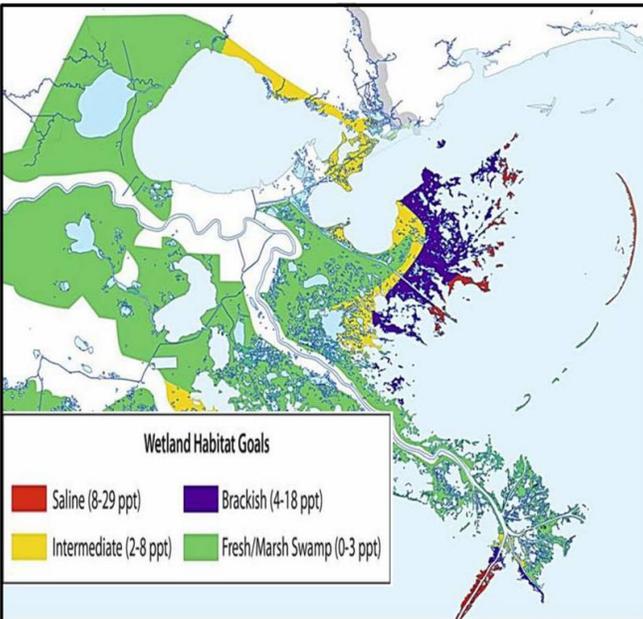
Background (continued)

- Because “average” conditions very rarely occur in reality, the freshwater diversion is planned to be managed to respond to actual environmental conditions.
- An Adaptive Management Plan (to achieve project objectives after construction and well into the future) has been developed, incorporating habitat goals (see graphic below) as a metric of successful diversion operation.

Violet Freshwater Diversion Q&A

Q: What happens if we don't build the diversion?

A: Without the diversion, conditions will not be suitable for restoration of cypress in the Central Wetlands or intermediate marsh along the Lake Borgne / MRGO Landbridge. These landscape features not only improve wildlife habitat, but they also protect communities from storm surge. With no introduction of river water, the salinity regime of these areas would be more suitable for brackish marsh and salinity spikes would be uncontrolled. Some limited cypress restoration could potentially be implemented near the New Orleans Sewerage and Water Board wastewater assimilation project sites and storm water outfall areas.



Recommended wetland habitat goals, which are consistent with the Violet Diversion authorization and the Caernarvon Diversion operational plan (LPBF 2006).

Q: What are the benefits to the ecosystem that will result from a 10,000 cfs capacity diversion and why?

A: The proposed diversion would create the background conditions necessary to restore coastal habitats like cypress swamps and marshes in the Central Wetlands and the MRGO/Lake Borgne Landbridge. The capacity of this diversion design provides more flexibility to reduce the adverse affects of salinity spikes in the Central Wetlands, Lake Borgne, MRGO, and the Biloxi Marsh.

Q: Why and when would the diversion be pulsed at higher cfs?

A: A controlled 7,000cfs pulse is planned for the spring, to allow more water into the ecosystem and mimic the natural patterns that occurred before levees were in place. The higher flows will maintain fresh/intermediate salinity in the Central Wetlands and the MRGO/Lake Borgne Landbridge, which will improve wildlife habitat and help sustain wetlands that protect communities. An adaptive management scheme will be developed to determine triggers for deviating from the conceptual operation flows.

*Background and Q&A information obtained from U.S. Army Corps of Engineers, 2010.

** Additional discharge capacity beyond 7000 cfs pulse may be needed during drought years.

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