

Donna Canal Superfund Site

Introduction



Donna Canal, Texas. (Photo credit EPA)

Donna, Texas, is a small agricultural town along the Rio Grande Valley that relies on water from the Donna Reservoir and Canal System (Hidalgo County). Water is pumped north approximately six miles from the Rio Grande River into the Donna reservoir where it is delivered to fields of row crops through a series of canals. In 1993, the United States Environmental Protection Agency (EPA) detected polychlorinated biphenyl (PCB) contamination in the canals and the fish in this water system.

PCBs are a synthetic class of compounds with low flammability that are resistant to acids, bases, oxidation, hydrolysis, and temperature change. They were once widely used in a variety of industrial applications like coolants for electrical equipment, heat transfer fluids, electronic cables, sealants for caulking, adhesives, wood floor finishes, waterproofing compounds, and “coal tars” that were used to coat water tanks, bridges, and other infrastructure. Upon learning of its toxicity and potential to cause cancer, production of PCBs was banned by Congress in 1979. However, PCBs are notoriously resistant to breaking down in the environment so many areas in the U.S. contain legacy contamination that may take decades to naturally recover without targeted remediation and removal of contaminated sediments and/or infrastructure.

The levels of contamination in the Donna Canal from PCBs were high enough to pose a health risk to humans that consume fish and a fishing ban was imposed on the area. However, over two decades later the source of the contamination is still under investigation and despite signs posted throughout the area advising residents of the contamination and fishing ban, recreational fishing continues.

EPA-DOI Inter-agency Coordination



Pictured left to right: FWS employees Clare Lee (Texas Coastal ESFO), Valerie Morgan and Brian Small (Arlington ESFO), Barry Forsythe (FWS Headquarters, Region 6 EPA Liaison), Jacob Lewis (Arlington ESFO), and Steve Alexander (Tennessee ESFO).

EPA is the lead agency responsible for protecting human health and the environment, a mission that is similar but separate from the mission of the U.S. Fish and Wildlife Service (FWS) which is working with others to conserve, protect, and enhance fish, wildlife, and plants for the continuing benefit of the American people. The Service’s Environmental Contaminants Program specializes in protecting habitat quality and minimizing the effects of pollution on wildlife. It is common for EPA and FWS to coordinate on a variety of activities that affect the environment, such as review of wastewater discharge permits or ecological risk assessments for Superfund sites. For the last five years, these two agencies have joined forces to help each other meet their respective missions by removing contaminated fish from Donna Canal. As recently as June 2017, an interagency team effort was undertaken to remove as many contaminated fish as possible from the Donna Reservoir and Canal System. Although some fishing is merely for sport, most of the fish caught at Donna Canal are consumed by the public, so removal of contaminated fish from the

system is viewed by EPA as a vital step toward protecting human health. Risks associated with human consumption of PCB contaminated fish include various cancers and other ailments such as compromised immune, reproductive, nervous, and endocrine system function.



Fish data collection and processing table.
(Photo credit EPA)

Removing contaminated fish requires specialized equipment, including two electrofishing boats. These boats send an electric current into the water and temporarily stun the fish for capture. Once stunned, the fish are netted, collected, and transferred to staff onshore for processing and disposal. The fish are counted and measured by EPA contractors and FWS personnel to get a better understanding of the age class structure of the fish community within the reservoir and canal system. Fish tissue samples are taken and analyzed to monitor changes to PCB levels over time. These data will not only help EPA determine

the current level of risk the site poses to humans and the environment, it will serve as a valuable baseline once the source of contamination has been identified so EPA can determine if remedial efforts are effectively reducing PCBs in fish.

Why are we doing this?

Until the source of the PCBs can be identified and removed, there are limited options for protecting human and wildlife health. Institutional controls, such as posting signs and educating the public about the dangers of consuming PCB-tainted fish, are not 100% effective at deterring the public and these efforts do not prevent wildlife from consuming fish. Therefore, at this time the removal of contaminated fish is seen as a priority that serves to discourage subsistence fishing by the local community, and limit potential exposure of PCB contamination to wildlife. Local media coverage of the fish removal effort helps educate the public about the dangers of consuming fish from the reservoir and canal system.



Largemouth bass collected from Donna Canal. (Photo credit EPA)



FWS staff use an electrofishing boat to collect fish from Donna Canal (Photo credit EPA).

The ultimate goal is to identify and remove the source of the PCB contamination at this Superfund site in the interest of protecting human health and the environment. Although the EPA is primarily concerned with human health, PCB contamination also negatively affects wildlife that consume fish from the reservoir/canal system. Many fish collected during the most recent removal project had external lesions and tumors that are likely associated with the PCB contamination. Once the source of PCB contamination is located and isolated or removed, the PCB levels in fish should return to normal and the fishing ban will be lifted.

Please contact Jacob Lewis or Erik Orsak at the Arlington Texas Ecological Services Field Office for more information (817-277-1100).

Additional information on the Donna Canal Superfund site can be found at the following EPA and U.S. Geological Survey websites:

https://response.epa.gov/site/site_profile.aspx?site_id=4308

<https://pubs.usgs.gov/fs/fs01602/>

Additional information on the effects of PCBs in wildlife is available at the following websites:

<https://www.fws.gov/midwest/es/ec/investigations/GreatLakesPCBEaglesStudy.html>

https://www.pwrc.usgs.gov/eisler/CHR_7_PCBs.pdf