



Briefsheet

South Fork Palouse River water cleanup plan (TMDL) for ammonia

What Is A TMDL?

Federal law requires states to identify sources of pollution in waters not meeting water quality standards, and to determine how much of each kind of pollution the waters can receive and still remain healthy. The amount of pollutant a body of water can assimilate without harm is called its "loading capacity."

A set of pollutant allocations for that waterbody, based on sampling data and computer modeling, is called a Total Maximum Daily Load (TMDL), or water cleanup plan. The Environmental Protection Agency (EPA) issued regulations and guidance on preparing TMDLs and approves them as they are developed. In 1994, EPA approved a TMDL for the south fork of the Palouse River, a good example of how the TMDL process can be used to fix water quality problems associated with domestic waste.



During the dry season, there isn't much water to measure in the South Fork. Much of the flow is made up of discharge from sewage treatment plants.

What's the Palouse like?

The south fork drains 130 square miles around the towns of Pullman and Albion in Washington and Moscow, Idaho. Grain fields and pastures dominate the area. The major land use is farming with residential, commercial, and industrial developments clustered around the towns. Populations of the towns vary seasonally due to the presence of two university campuses, Washington State at Pullman and the University of Idaho at Moscow.

Why the Palouse?

Some people say the Palouse has the worst water quality in the state, based on data collected at Pullman. Past investigations by Ecology identified several point and nonpoint source problems in the streams of the watershed. Wastewater from the sewage treatment plants serving the cities of Pullman and Moscow comprises most of the river flow during the summer and fall months. Ammonia concentrations often exceeded the state water quality standards for protection of aquatic life.



What did the South Fork TMDL find?

In 1993, Ecology completed a water quality assessment of the river. The intensive study was designed to evaluate the ammonia loads to the river and predict changes in water quality resulting from changes to effluent concentrations. The study recommended that Ecology place limits on the sewage treatment discharges in Washington. It also recommended that EPA place equivalent limits on the Moscow, Idaho, discharge. This would bring the river's water quality up to meet Washington standards at the border.

What are the recommendations?

Based on the TMDL, in 1995, Ecology issued a new permit to the City of Pullman that limited ammonia loading from the treatment plant to the river. The city upgraded the facility to include ammonia removal and other significant changes. In 1997, Ecology also issued a new permit to the Town of Albion that limits ammonia discharges to the river. Ecology granted a grace period to show that these limits could be met without additional upgrades to treatment unit operations. The permit requires Albion to monitor its discharge weekly, to evaluate whether the TMDL goals are being met. In 1998, EPA also established a TMDL for ammonia which will place limits on the discharges from Moscow, Idaho, to meet Washington state standards at the border.

How will we know if it's working?

TMDLs also require monitoring to test and assure their effectiveness. Ecology conducts routine monitoring of several water quality constituents in the river at Pullman. Data show that water quality standards are being met for ammonia, which is good news for human health and aquatic life.

How has the environment been affected?

Since the permit was issued and the upgrade to the Pullman wastewater treatment facility was completed, the ammonia concentration in the river at this location has dropped to below the detection limit. These data show that the upgrade was effective in surpassing the TMDL goal.

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Below: Identifying the types and numbers of creatures living in the bottom of the South Fork will tell Ecology a lot about the quality of the water in the creek.

