

JOURNAL



THE INFORMED READER

Insights and Items of Interest From Other Sources

ENVIRONMENT

As U.S. Tears Down Dams and Rivers Rebound, Scientists Find a Flood of Ecological Risks

[SCIENTIFIC AMERICAN, MARCH]

ENVIRONMENTAL CONCERNS have led the U.S. to pull down an increasing number of aging dams in the last decade, returning water to dry streams, birds to wetlands, and migratory fish to rivers. But environmentalists are also learning a torn-down dam can leave a host of challenges, writes Jane C. Marks, an ecologist at Northern Arizona University.



Sediment that has accumulated behind the dam can muddy the waters of a river, choking insects and algae that fish need to survive. Sands buried in the sediment might unleash alien crops that kill local species and contaminated sediment might make fish poisonous. As a result, elaborate pipelines are sometimes required to get the finer sediment downstream to help stop erosion, while leaving coarse sediment upstream.

Exotic fish can also become a problem. A dam in Arizona had been blocking exotic fish such as

bass and sunfish from getting into a creek. Biologists were concerned that, without the dam, local fish in the creek would be wiped out as the exotic fish arrived. So they temporarily removed the local fish, keeping them elsewhere, and poisoned the exotic fish in the creek. Once the exotic fish were dead, they returned the local fish to their former habitat.

Without dams to calm them, some rivers are once more prone to flood-

ing. In France, local authorities have had to make up for decommissioning four dams in the Loire Valley with an elaborate weather-monitoring system to give four hours' warning of a flood.

Dams can cause dilemmas beyond the environment. Ms. Marks mentions how a father and son bitterly disagreed over the Loire dams' removal. The father wanted the salmon and wild waters of his youth to return, whereas the son wanted to preserve the swims and boating trips of his youth.

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Current Event

As U.S. Tears Down Dams and Rivers Rebound,

Scientists Find a Flood of Ecological Risks

1. The focus of the news article is how ecosystems which have adapted to the controls of a dam react when that dam is finally removed.
2. Ecosystems have to adapt to new environmental situations when dams are taken in and then again when removed. Fish have to adapt from a world of flowing water to a still body of water. Sediments can build up against the dam walls and when removed the waters become turbid killing algae and insects which are a food source for many small fish. Dams also act as a barrier to migrating fish which can harm the local species but once adapted blocks exotic species from disturbing the system. Then when the dams are removed a whole ecosystem has the risk of collapsing.
3. Environmentalist and fish are the main “players” in the article.
4. Dams can change the flood patterns of rivers to by controlling water as it flows downstream. This can make once unstable land some of the most fertile soil to farm and viable land to build on. Once the dam is removed the river is no longer under control and can flood again destroying land that has economic value.
5. The article only focuses on the effects of taking down a dam. It does not state the initial damage of putting in a dam. If it talked about both the initial damage and then also the final damage it could be much more effective.

6. Some fish ecology that could be helpful in handling a dam removal situation would be how exotic fish and vegetation could effect local fish and vegetation. Knowing that the different species eat the same things could help prevent competition because the ecologist could figure out a way to eliminate or divert the exotic species.
7. By examining all the different possibilities of removing a dam a fish ecologist can save many species of both local and exotic organisms. They can prevent towns from flooding and conserve farm land from destructive floods. Fish ecologist could distribute the built up sediment in an organized fashion to prevent high turbidity kills of algae. They can manual remove exotic fish from local habitats and ultimately conserve and protect a sensitive ecosystem.