

Monday, January 20, 1997

# Eroding wetlands may affect water quality

By Keith Rogers  
Review-Journal

At a full capacity of 9.2 trillion gallons, Lake Mead, the nation's largest reservoir, is big enough to dilute most pollution.

But recent studies of carp from the lake's Las Vegas Bay have turned up evidence of contamination from pesticides and industrial chemicals, specifically residues of DDT and PCBs, which have been banned for more than 20 years.

Scientists are trying to determine if sport fish -- striped bass and catfish -- from Las Vegas Bay also are contaminated.

In addition, local biologist Larry Paulson is worried about a second issue -- whether eggs from a potentially fatal parasite, cryptosporidium, are being carried by stream to Southern Nevada's drinking water intakes at Saddle Island, six miles from the Las Vegas Wash inlet.

A 1996 study by the Bureau of Reclamation found that salts in this wastewater stream are mixing with cleaner water of the lower Colorado River. The area extends to within about 1 1/2 miles of Saddle Island, according to the study.

Kay Brothers, director of the

Kerr-McGee Chemical Corp., a company in the complex, once produced a defoliant, known as Tumbleleaf DefoliantR. Two other chemical companies that once were part of the complex also produced pesticides.

The state has recommended 11 cleanup projects among 65 documented areas of spills, leaks or past chemical production in and around the complex.

The carp study found evidence of organochlorines, as well as industrial compounds in the water, sediments and carp from Las Vegas Bay. Organochlorines include chlorinated pesticides and dioxins.

Dioxins "are commonly discharged to surface waters in effluents from chemical manufacturing plants and sewage treatment plants," according to the study led by Hugh Bevans, a U.S. Geological Survey hydrologist in Carson City.

Water authority officials say they intend to combat any degradation of water quality with some of the best treatment technology available. Plans call for a \$60 million upgrade to the

Southern Nevada Water Authority's Resources Department, said so far no harmful chemicals have surfaced at Saddle Island.

"The quality is extremely good," Brothers said. "We've never seen any sign of any of these chemicals. We see nothing similar to that at the intake."

About nine miles upstream of the bridge over Las Vegas Wash, water flows virtually in a straight shot, unchecked by vast wetlands that once filtered most of the parasites and some of the pollution.

Paulson, a former University of Nevada, Las Vegas professor who has focused his research on Lake Mead's water quality, said erosion from the rapid flows -- 140 million gallons a day just from the treatment plants -- has led to the demise of reeds and cattails that once slowed the stream.

Restoration efforts are under way near Henderson and upstream of Lake Las Vegas on Las Vegas Wash. The wash flows through conduits beneath Lake Las Vegas.

Norma Cox, a member of Friends of the Desert Wetlands Park, said more than 2,000 acres of former wetlands upstream of Lake Las Vegas are targeted for restoration. Financed by a \$13.3 million park bond that was approved by voters in 1990, the wetlands project includes trails for wildlife observers and structures to prevent erosion.

Failure to completely restore the Las Vegas Wash wetlands could yield fatal consequences. In 1994, an outbreak of illness in Milwaukee and other U.S. cities was linked to cryptosporidium, said

Lake Mead treatment plant that is designed to remove 99.999 percent of microorganisms such as cryptosporidium.

Sewage treatment officials for the three effluent plants in Clark County, Las Vegas and Henderson say the plants have been upgraded to meet all state and federal discharge standards.

The Clark County Sanitation District treatment facility treats 70 million gallons of sewage per day. About 14 million gallons of that are reused each day for power plant coolant and to water golf courses during the summer, according to facility spokesman Marty Flynn.

The county spent \$105 million last year on upgrades to the 40-year-old facility. About \$70 million of that was spent on meeting water quality standards.

Kurt Segler, utility manager for Henderson's sewage treatment plant, said the 3-year-old plant, combined with a lagoon system, has about a 20 million-gallon-per-day capacity.

David Mendenhall, environmental manager for the Las Vegas sewage treatment plant, which also treats sewage from North Las Vegas, said the plant has a 53 million-gallon-per-day average capacity, although a 1991 expansion extended the maximum capacity to 66 million gallons per day.

Its filtration system was last upgraded in 1994 at a cost of \$33 million to remove ammonia. That was preceded by a \$21 million filtration improvement to remove phosphorus, he said.

Paulson, a water quality consultant to the Nevada Seniors Coalition.

The coalition, led by Ken Mahal, is challenging a proposed \$1.7 billion project to expand Southern Nevada's water delivery system.

Mahal and Paulson, in letters and appeals filed to government agencies that approved the project, thus paving the way for construction, have reminded government officials and the water authority that the 1994 cryptosporidium outbreak contributed to the deaths of 32 people and made 78 others sick, including 11 healthy children.

Most of those affected, 63, had weakened immune systems from HIV, the virus that causes AIDS.

Continued growth of the Las Vegas Valley's population, now at more than 1 million, plus water and sewage demands from 30 million visitors each year, will further complicate the already questionable water quality situation, Mahal and Paulson said.

Also, a regulatory gap allows small businesses to discharge chemicals unchecked into the storm sewer, Paulson said.

Paulson believes pollution from industry and toxic wastes could be controlled by using gravel pits along Las Vegas Wash to hold storm runoff. He said a diversion dam built along Pabco Road on the valley's east side would channel runoff to the gravel pits, where some pollutants could degrade before controlled dispersion into the wash.

Excess storm water could also be used for construction and golf

The plant, built in 1957 and located where Vegas Valley Drive meets Las Vegas Wash, had a beleaguered history in the late 1980s and early 1990s. That is when federal inspectors found the plant was emitting toxic levels of insecticides.

A 1987 inspection found diazinon, a federally approved cockroach killer, at very toxic levels.

Then, in 1992, levels of the insecticide malathion killed mayfly larvae and minnows that are used to check the plant's discharges in the wash.

The plant has not had a problem with insecticide contamination since 1992, Mendenhall said.

Paulson said restoring thousands of acres of wetlands is only part of the solution to preventing contaminants from escaping into Lake Mead.

Wetlands restoration should be used in concert with ground water cleanup, tighter controls on runoff from storms and industrial areas, and distributing treated effluent farther from water supply intakes, he said.

Some scientists, including the water authority's Brothers and microbiologist Richard Gersberg, believe wetlands in Las Vegas Wash could, however, help stockpile chemicals that persist in the environment. But then floods would send large amounts of contaminants into the lake.

Gersberg, a wetlands expert and professor of environmental health at San Diego State

course irrigation.

But Paulson says the valley's pollution woes won't be solved until controls are put on pesticides and toxic wastes discharged into the sewer and cleanup of contaminated ground water layers is finished.

While scientists continue to search for pollution sources that might be contaminating carp, Nevada's Environmental Protection Division already has identified sites around the Basic Management Inc. industrial complex near Henderson. [Next Column](#)

University's Graduate School of Public Health, said wetlands do have the capacity to remove between 90 and 99 percent of any existing cryptosporidium.

"Whenever you impound water and make it flow through the root zone, pathogens (microorganisms) are filtered out," Gersberg explained.

Paulson said wetlands might have an impact on the amount of water returned to the lake.

"We're at this point," Paulson said. "We are going to have to sacrifice quantity a little bit to protect the quality."