

U.S. Fish & Wildlife Service

# Moapa Valley

*National Wildlife  
Refuge*



*Warm water springs  
from the hillsides,  
giving life to the Moapa  
Valley.*

## **A Home for the Moapa Dace**

The National Wildlife Refuge System is a 95-million acre network of federal lands and waters managed by the U.S. Fish and Wildlife Service to conserve and protect fish, wildlife, plants and their habitats. The Moapa Valley National Wildlife Refuge, established September 10, 1979, is the first refuge created to protect an endangered fish, the Moapa dace.



*Moapa dace*



*The "Blue  
Goose" insignia,  
designed by Ding  
Darling, is the  
symbol of the  
National Wildlife  
Refuge System.  
Moapa Valley  
NWR is part of  
a nationwide  
system of over  
520 refuges set  
aside for the  
conservation and  
management of  
fish, wildlife and  
plant resources  
for the benefit  
of present  
and future  
generations.*

With less than four inches of rain per year, water is a unique and rare resource in the dry Mojave Desert. Plants and animals balance on the edge of existence. The Warm Springs area, historically known as the Moapa Valley, is a desert oasis with five major thermal springs. Two of these springs are on the Refuge.

Where does the water come from? Water moves through the White River Ground-water Flow System, which stretches to the northwest from Coyote Springs to Ely. The "fossil water" in this aquifer takes thousands of years to move underground towards Warm Springs where it is forced to the surface.

Above ground, the water on average 88° F, bubbles up into springs and streams and emerges forming the beginning, or headwaters, of the Muddy River. The entire population of Moapa dace are found here and nowhere else in the world. No longer than a human finger, the olive-yellow dace fight for survival in this harsh desert environment.

## History of the Moapa Valley

For thousands of years, people have used the Moapa Valley with minimal impacts to the wildlife. Anasazi villages stretched from the Warm Springs area to the Virgin River centuries before European Americans arrived.

By 1200 A.D., Southern Paiutes inhabited Warm Springs. The area remains an important element of modern Paiute culture among the nearby Moapa Band of Paiutes and Las Vegas Paiutes.



*Southern Paiute Men, 1873*  
© Nevada Historical Society

In the late 1800's, Mormon ranchers, farmers, and tradesman populated the Moapa Valley. Years passed and development continued as streams were diverted and channelized. Throughout the early 1900's, the dace were still common. In 1963, the population rapidly declined after the introduction of the shortfin mollie, a non-native fish. By 1967, the Moapa dace was federally listed as endangered.

*Non-native shortfin mollie*



The area that is now the Refuge was operated as a resort with snack bars and recreational vehicle hook-ups. The springs and streams were chlorinated and concreted into swimming pools. Only a few hundred dace remained by 1977. When it was purchased from a willing seller in 1979, there were no dace left on-site.

## Why are they endangered?

The Moapa dace population is declining. Endangered means the entire population is close to extinction—never existing on Earth again—and indicates something in the environment changed.



Water is their home. Adult dace lay eggs year-round near the springheads and use the warm water to incubate their eggs. After hatching, the juveniles move into the stream and eventually, as adults, can migrate into the Muddy River. The omnivorous dace feed on both plant and animal material. When it is time to reproduce, similar to salmon, they swim back upstream.

As the human population grows their increased need for water has changed the habitat. Sometimes this results in less water overall or cooling and pooling of the water making it unsuitable for the dace to feed or breed in. Non-native fish such as tilapia, mosquito fish, and shortfin mollies thrive in these altered conditions. This competition for available habitat (food, shelter, space) threatens the dace's survival.



*Non-native tilapia*

## *Removing cattails—part of the restoration process.*

© Shawn Goodchild, FWS



In an effort to save the dace from extinction, the Service, with the help of local citizens, non-profit organizations, county, state, and federal officials, started the long and difficult process of reconstructing and restoring this unique habitat.



*Restored channel*



**Moapa Valley  
National Wildlife Refuge  
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**<http://www.desertcomplex.fws.gov>**

**Visit the U.S. Fish & Wildlife Service  
on the internet at  
<http://www.fws.gov>**

**For Refuge information  
1 800/344 WILD**

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