



## CHAPTER 4 ENVIRONMENTAL COMMITMENT

### ENVIRONMENTAL COMMITMENT

In order to support its resource planning and facility expansion activities, the SNWA began to participate in a number of environmental initiatives and coalitions in the mid 1990s, taking a proactive and integrated approach to water resource management. The SNWA's commitment to environmental responsibility typically goes beyond the steps necessary to ensure compliance with applicable regulations or statutes. Efforts have included the support of research and recovery activities related to federally endangered fish, birds and wildlife; involvement in broader regional programs that address issues such as habitat conservation and water quality; and financial and staff support for environmental research and studies.

As part of its long-term resource planning, the SNWA is working with various stakeholders in the region to address environmental issues and concerns through regional planning programs. Some of these programs form the basis for compliance with appropriate environmental laws and regulations.

The following sections briefly describe the SNWA's environmental initiatives - planning, compliance and environmental commitments - related to SNWA's water resource portfolio.

### **COLORADO RIVER**

The majority of water used in Southern Nevada comes from the Colorado River, making Colorado River environmental issues among the most important to the SNWA. Alterations along the river have affected its ecosystems in both the United States and Mexico. Native fish, birds and other wildlife species have been listed by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (ESA) as threatened and endangered. Riparian, wetland and aquatic habitats have been reduced and/or modified. These environmental issues have the potential to directly affect the SNWA's

ability to construct necessary facilities and continue withdrawing water from the river.

### **Lower Colorado River Multi-Species Conservation Program**

In 1994, major portions of the Colorado River were designated as critical habitat for four endangered fish. The four federally-listed endangered fish are the razorback sucker (*Xyrauchen texanus*), bonytail (*Gila elegans*), humpback chub (*Gila cypha*) and Colorado pikeminnow (*Ptychocheilus lucius*). The 1994 critical habitat designation meant that federal agencies had to consider not just potential project impacts on endangered fish, but also potential impacts on the habitat as well. This requires all federal agencies to consult with the USFWS under the ESA for most actions on the river, including the operation of existing facilities.



### **Humpback chub**

As a result of the critical habitat designation, Arizona, California, Nevada and the Department of Interior began developing the Lower Colorado River Multi-Species Conservation Program (MSCP) in 1994 and completed program development in December 2004. The goal of the MSCP is to implement a coordinated conservation strategy that will permit federal and non-federal operations in the lower Colorado River to continue with flexibility, while working toward the recovery of listed species. A Steering Committee of

stakeholders, including the SNWA, oversees program implementation, which will provide ESA compliance for federal and non-federal operations on the lower river for the next 50 years.

Implementation of the program began in April 2005 and is estimated to cost \$626 million (in 2003 dollars) over the 50-year life of the program. The Bureau of Reclamation will provide 50 percent of the program funding with the remaining 50 percent to be split between the three Lower Basin States (California – 50 percent, Nevada – 25 percent, Arizona – 25 percent). The MSCP Steering Committee meets three times a year to discuss and approve action items for the MSCP. The Steering Committee has 53 members including federal agencies, state agencies, Indian tribes, and interested conservation organizations. The Bureau of Reclamation is currently pursuing over 50 restoration and research projects as part of the Fiscal Year 2008 Work Plan.



**Razorback sucker**

Some of the MSCP projects currently underway in Nevada include razorback sucker studies on Lake Mead and southwestern willow flycatcher surveys along the Virgin and Muddy Rivers. In December 2005, the SNWA purchased the Boy Scout Property in Laughlin, Nevada for \$920,000. The 15-acre property is located along the Colorado River and is surrounded by Big Bend State Park. The SNWA is currently working with Nevada State Parks and the Bureau of Reclamation to develop a restoration plan for the property to benefit the MSCP.

In addition to the MSCP, the SNWA participates in species-specific research and conservation efforts related to Nevada's Colorado River resource. The information gained from these activities has proven instrumental to ensuring the best available information is utilized in making critical decisions concerning water resources and species conservation.

### **Las Vegas Wash and Lake Mead**

The Las Vegas Wash (Wash) plays an important role in the environmental and water-resource issues facing Southern Nevada. The Wash is the primary drainage channel for all stormwater flows, landscape and surface runoff, highly-treated wastewater flows and shallow groundwater flows in the Las Vegas Valley. These flows represent less than 2 percent of the flow into Lake Mead, but are an important component since they provide return-flow credits associated with Nevada's Colorado River allocation. Historically, wetlands to the Wash have served to remove pollutants and suspended solids as urban flows pass into the Colorado River system. However, since the 1970s, erosion has dramatically reduced the amount of wetlands in the Wash, leading to increased sedimentation into Lake Mead, habitat loss and water-quality concerns.



**Las Vegas Wash**

In 1998, the Las Vegas Wash Coordination Committee (Coordination Committee) was formed to address the many issues associated with the Wash. The Coordination Committee consists of 28 member entities, representing federal, state, and local agencies, organizations and citizens. In 1999, the Coordination Committee completed the Las Vegas Wash Comprehensive Adaptive Management

Plan. The plan provides a comprehensive set of management actions for stabilizing and enhancing the Wash and improving water quality. The plan made three main recommendations – erosion control, environmental monitoring, and wetlands restoration and enhancement.

In 2000, the SNWA was designated the lead agency for the implementation of the Las Vegas Wash Comprehensive Adaptive Management Plan and established the Las Vegas Wash Project Coordination Team to provide administrative and technical support to the Coordination Committee. Since its inception, the Coordination Committee has constructed ten grade control structures, installed roughly 40,000 linear feet of stream bank protection, conducted bioassessment monitoring as well as water quality and tributary monitoring, implemented a variety of fish and wildlife surveys, revegetated more than 60 acres with native plants, and performed archaeological studies. These efforts have resulted in a 75-80 percent total sediment reduction, improving water quality in both the Wash and Lake Mead.

The Clean Water Coalition (CWC), comprised of the City of Las Vegas, City of North Las Vegas, City of Henderson and Clark County Water Reclamation District has been studying alternatives to the discharge of treated effluent in the Wash for several years, known as the Systems Conveyance and Operations Program (SCOP). In 2002, the CWC formed a Citizens Advisory Committee (CAC) to address alternatives to protect water quality in the Wash and Las Vegas Bay of Lake Mead before conditions degrade or result in regulatory action. In February 2004, the CAC's recommendations were approved by the CWC Board. A Final EIS for the SCOP was completed in October 2006 and Records of Decision from both the National Park Service and Bureau of Reclamation were issued on July 5 and July 9, 2007, respectively.

Given the nexus between water and wastewater in Southern Nevada, the SNWA is working closely with the CWC to coordinate various activities. In January 2007, the SNWA entered into a Memorandum of Understanding (MOU) with the CWC, National Park Service and Bureau of Reclamation committing to

participate in the development and implementation of the Boulder Basin Adaptive Management Plan (BBAMP). A subsequent MOU was approved that included a representative from the Metropolitan Water District of Southern California as a member of the Technical Coordination Team for the BBAMP. In September 2007, the USFWS was added as a participant in the BBAMP.

The BBAMP will:

1. Establish management objectives regarding water quality, nutrient management and recreational uses;
2. Establish procedures for and undertake water quality monitoring and analysis of the data;
3. Develop management indices and decision-making processes to address areas of concern;
4. Develop an annual operation and management action plan; and
5. Establish a core management team to oversee and manage the BBAMP.

Four Technical Advisory Teams have been established, which include:

- Water Quality Objectives
- Monitor and Modeling
- Selenium Management
- Plant Operations

### **Colorado River Delta**

The Colorado River Delta in Mexico is a regionally significant wetland and estuarine ecosystem supporting a diverse array of plant and animal species, including several that are listed as endangered in both the United States and Mexico. The construction of dams and subsequent diversion of water from the Colorado River in the United States and Mexico have reduced water and sediment flows to the Delta, substantially reducing the amount of riparian and wetland areas in the Delta from pre-dam levels. Many environmental organizations have advocated increased water flows and changed management of the river flows to improve and restore more of the Delta ecosystem. The United States and Mexican governments have developed a conceptual framework for cooperation on studies and recommendations

regarding environmental issues in the Colorado River Delta.

With the regional drought and increased pressures on Colorado River water resources, the issue of the Colorado River Delta will likely become more complex. The SNWA continues to gather information and ensure that other stakeholders are well informed of the many issues concerning the Delta. By continuing to engage this issue, the SNWA will be prepared to address bi-national issues collectively as a shared regional water resource and environmental solution.

### MUDDY RIVER AND COYOTE SPRING VALLEY

As noted in Chapter 2, the SNWA has Muddy River surface water rights and Coyote Spring groundwater rights. This section describes the environmental initiatives currently underway with respect to the development of these resources. As discussed in Chapter 2, the Interim Guidelines include provisions that will allow the SNWA to recover its Muddy River water rights that pre-date the Boulder Canyon Project Act and its Coyote Spring Valley groundwater rights as Intentionally Created Surplus from Lake Mead through existing infrastructure in Lake Mead.

The mainstream river, tributaries and springs of the upper Muddy River provide habitat for several species that are considered rare and sensitive. The upper Muddy River and the Warm Springs area is home to

#### Moapa dace



the endangered Moapa dace (*Moapa coriacea*) as well as a variety of species of concern including the Moapa White River springfish (*Crenichthys baileyi moapae*), the Moapa speckled dace (*Rhinichthys osculus moapae*), and the Virgin River chub (*Gila seminuda*).

The USFWS manages the Moapa Valley National Wildlife Refuge (MVNWR) in this area for conservation of the Moapa dace, as well as the additional sensitive species on the river including three fish, two snails and two insect species. Conservation of the Muddy River species is a high priority for local, state and federal agencies.

In April 2006, the SNWA approved a Memorandum of Agreement (MOA) among the USFWS, Coyote Springs Investment LLC (CSI), Moapa Band of Paiutes (Tribe), Moapa Valley Water District (MVWD) and the SNWA, which establishes a plan for monitoring, management and mitigation that permits groundwater development in Coyote Spring Valley and California Wash groundwater basins, while simultaneously working to protect and recover the Moapa dace. The MOA is also the subject of a Programmatic Biological Opinion that covers a total of 16,100 AFY of groundwater development. The 16,100 AFY total includes 9,000 AFY by the SNWA in Coyote Spring Valley; 4,600 AFY by CSI in Coyote Spring Valley; and 2,500 AFY by the Tribe in California Wash.

The MOA and Programmatic Biological Opinion specify conservation measures to be implemented by the signatories. In 2007, the SNWA Board approved an agreement with USFWS to implement the following conservation measures:

- Construction of fish barriers in the Muddy River. The SNWA will contribute \$50,000 towards construction of fish barriers.
- Eradication of non-native fishes. The SNWA will provide \$25,000 to help eradicate tilapia and other non-native fishes on privately-owned lands in the area.
- Improvement/restoration of Moapa dace habitat on the Apcar Unit of the MVNWR. The SNWA will provide \$750,000 to implement non-native

vegetation removal and stream restoration within the Apcar Unit of MVNWR.

- Development of a Recovery Implementation Program. The SNWA will provide \$300,000 towards development of a recovery program that will prioritize and identify implementation of recovery measures for the Moapa dace.
- Development of an Ecological Model. The SNWA and USFWS will provide \$125,000 each for development of an ecological model for the Moapa dace. It is anticipated that the U.S. Geological Survey will develop the ecological model under contract with the USFWS.
- Establishment of a Hydrologic Review Team (HRT). The signatories to the MOA formed the HRT to develop and coordinate regional monitoring efforts of the groundwater pumping proposed under the MOA. The HRT members discuss and perform analyses of groundwater pumping impacts on the Muddy River and Muddy Springs.

#### **Muddy River Recovery Implementation Program**

Development of the Muddy River Recovery Implementation Program (RIP) was identified in the Programmatic Biological Opinion. The purpose of the RIP is to provide a comprehensive umbrella ESA program for water resource management in the Coyote Spring Valley, Muddy Springs and Muddy River areas while working toward recovery of listed species and identifying opportunities for sensitive species and their habitat. The program area extends from the upper Muddy River to Lake Mead. The development phase of the RIP is expected to be completed in 2008 and program implementation will begin shortly thereafter.

#### **Warm Springs Natural Area**

The SNWA filed an application for Southern Nevada Public Lands Management Act (SNPLMA) funding to purchase 1,179 acres historically known as the Warm Springs Ranch, which is located in Moapa Valley. The SNPLMA funding was secured under the “Parks, Trails and Natural Areas” category. In July 2006, the SNWA Board approved the purchase agreement and in September 2007, escrow closed on the property. The property was then renamed the “Warm Springs

Natural Area.” By purchasing the property, the SNWA was able to protect the majority of the Moapa dace population and its habitat and prevent the property from being developed for residential purposes. By protecting the Moapa dace and its habitat, the SNWA can responsibly move forward with development of SNWA’s water resources in the Muddy River and Coyote Spring areas.

The Warm Springs Natural Area and the Moapa Valley National Wildlife Refuge encompass about 20 springs, which form the headwaters of the Muddy River. The springs and outflows on the Warm Springs Natural Area are home to the majority of the Moapa dace population. Other endangered and sensitive species, such as the southwestern willow flycatcher and yellow-billed cuckoo, are also found on the property. In addition, the Warm Springs Natural Area has the largest breeding population of vermilion flycatchers in Nevada.

Although the primary purpose is to manage the property for the protection of the Moapa dace, the SNWA committed in the SNPLMA funding application to manage the entire property as a Natural Area and develop a long-term management plan. It is anticipated that the property will be managed in concert with the adjacent Moapa Valley National Wildlife Refuge and The Nature Conservancy Muddy River property.

#### **VIRGIN RIVER**

As noted in Chapter 2, the SNWA has water rights to the Virgin River. This section describes the environmental initiatives currently underway with respect to these resources.

In October 2004, the SNWA applied to the BLM for rights-of-way to construct facilities to develop SNWA’s existing water rights on the Virgin and Muddy Rivers and the BLM initiated an EIS for the rights-of-way. Environmental studies for the BLM rights-of-way have been completed and future studies specific to the rights-of-way are on hold. As noted in Chapter 2, pursuant to the Seven States’ Proposal and recent Record of Decision by the Secretary of Interior, the SNWA has agreed to postpone development of

its rights to the Virgin River that were granted by the Nevada State Engineer in 1994. The SNWA, in concert with the other Basin States, is pursuing opportunities to augment the Colorado River system by 75,000 AFY to offset this project. As discussed in Chapter 2, the Colorado River Interim Guidelines include provisions that will allow the SNWA to recover its Virgin River rights that pre-date the Boulder Canyon Project Act as Intentionally Created Surplus from Lake Mead through existing infrastructure in Lake Mead.

The Virgin River is one of the largest riparian corridors in the desert southwest and is home to the federally endangered woundfin (*Plagopterus argentissimus*), Virgin River chub, southwestern willow flycatcher (*Empidonax traillii extimus*) and Yuma clapper rail (*Rallus longirostris yumanensis*), and the candidate species yellow-billed cuckoo (*Coccyzus americanus*) and Virgin River spinedace (*Lepidomeda mollispinis mollispinis*). There are more than 200 other species of wildlife that also utilize this riparian corridor as a residence or seasonal migration route. Supporting a high level of biodiversity, the Virgin River is regarded by federal and state resource agencies and environmental organizations as an integral component of the desert southwest ecosystem.



**Southwestern willow flycatcher**

The SNWA has conducted environmental research on the Virgin River since 1993. In fact, much of the available biological information concerning the lower Virgin River has been collected as a result of efforts by the SNWA. This includes population and habitat surveys for fish, birds, mammals, amphibians and

sensitive plants. In addition, the SNWA participates in a number of environmental programs on the upper and lower Virgin River.

In the upper Virgin River (within the State of Utah), federal, state and local agencies and various other stakeholders are implementing the Virgin River Resource Management and Recovery Program. This program is providing environmental compliance for water development and flood-control projects by implementing resource-management agreements aimed at recovery of listed species, conservation of native species and protection of the river corridor.

The lower Virgin River (Arizona and Nevada) has only recently faced the same development pressures as the upper Virgin River, and as a result has only recently been the subject of large scale environmental planning efforts.

#### **Virgin River Habitat Conservation and Recovery Program.**

The Virgin River Habitat Conservation and Recovery Program (VRHCRP) is currently under development as a requirement of the Mesquite Lands Act. This Act authorized the BLM to sell 10,620 acres of BLM land to the City of Mesquite. The City of Mesquite plans to sell that land to developers and reserve some acreage for an airport.

In October 2002, special legislation as part of the Clark County Conservation of Public Land and Natural Resources Act of 2002 was passed in Congress. The legislation allows the City of Mesquite to use proceeds from the BLM land sale for the development of a habitat conservation plan and a Hydrological Monitoring and Mitigation Program (HMMP). The HMMP is intended to address future unknown potential effects of groundwater pumping on the Virgin River. A Hydrology Work Group is designing a monitoring program and will collect and evaluate data from new and existing groundwater monitoring wells and existing surface water gages. The data will be used to determine a baseline and whether increased groundwater pumping by Virgin Valley Water District (VVWD) is affecting habitat or species along the Virgin River.

The City of Mesquite started development of the VRHCRP in 2004. In 2005, the SNWA, Clark County, VVWD, National Park Service, Nevada Department of Wildlife and BLM joined the VRHCRP planning process. The group established an Executive Committee with representatives from each organization to guide the process. Five technical committees have also been established to provide additional guidance to the Executive Committee.

In addition to the VRHCRP effort, the Lower Virgin River Recovery Implementation Team is working to develop a conservation action plan for the endangered woundfin and Virgin River chub. This team is also conducting research and implementing interim conservation measures for these listed fish. The Virgin River Conservation Partnership is a stakeholder group composed of federal, state and local agencies working to share information and make recommendations to planning efforts like the VRHCRP. The SNWA is a key participant in these Virgin River environmental efforts to ensure they are coordinated with the development of SNWA's water rights in the Virgin River.

## CLARK COUNTY

### Clark County Multiple Species Habitat Conservation Plan

After the ESA listing of the desert tortoise (*Gopherus agassizii*) in 1989, local agencies in Clark County recognized the need to address concerns about listed or sensitive species that could affect development in the county. Beginning in 1998, the Clark County Multiple Species Habitat Conservation Plan (MSHCP) was developed to address biological resources within Clark County. In addition to the desert tortoise, the program provides ESA coverage for 77 additional species. The key purpose of the MSHCP is to achieve a balance between the conservation and recovery of listed and sensitive species in Clark County and the orderly beneficial use of land in order to meet the needs of the growing population in Clark County. The SNWA actively participates in the MSHCP. The MSHCP serves as an insurance policy to cover future federal listings of species in areas where urban development is taking place.

## CLARK, LINCOLN AND WHITE PINE COUNTIES GROUNDWATER

Eastern Nevada lies within the Great Basin, which is a high desert area that supports a suite of unique and sensitive plant and animal species. Some of the species that are a concern include the greater sage grouse (*Centrocercus urophasianu*), pygmy rabbit (*Brachylagus idahoensi*), White River spinedace (*Lepidomeda albivallis*) and ferruginous hawk (*Buteo regalis*). Many of these species depend upon springs and small streams that are scattered throughout this area.

In August 2004, the SNWA applied to the BLM for rights-of-way to construct facilities to develop groundwater resources in six hydrologic basins in eastern Nevada. The BLM has determined that it is necessary to prepare an EIS in order to evaluate the environmental impacts of its rights-of-ways decision. Public scoping for the EIS was held from April through August 2005, and again from July through August 2006.

The SNWA has submitted a draft Conceptual Plan of Development for the project to the BLM, which describes information such as project location, construction methods, and operation and maintenance. The SNWA has conducted hydrologic and environmental research in this region since the early 1990s and has provided this data to the BLM for evaluation during the EIS process. Biological data provided includes surveys for bats, small mammals, pygmy rabbits, sage grouse, raptors and ferruginous hawks, breeding birds, sensitive plants, general wildlife, weeds, terrestrial invertebrates and aquatic ecosystems. The SNWA has also collected extensive geologic and hydrologic data from published sources, field surveys and studies, and new monitoring and testing wells. A groundwater flow model is being developed from this data as part of the EIS analysis, which will evaluate potential effects of groundwater production on water levels and spring flows. This information will allow SNWA to better predict potential impacts from groundwater development and develop hydrologic monitoring and management plans to reduce or avoid impacts.

The EIS will analyze potential effects of the project on human and environmental resources, including geology, soils, water, biology, paleontology, geologic hazards, land ownership and use, special use areas, noise, air quality, visual, cultural resources and socioeconomics. The EIS is anticipated to be available for public review in late 2008 and completed in late 2009.

As noted in previous chapters, the SNWA entered into a stipulated agreement with the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management (BLM) and Bureau of Indian Affairs to work together to monitor and protect Spring Valley. The stipulation includes the development of a Biologic Monitoring, Management and Mitigation Plan. This plan establishes a Biological Work Group and a Hydrologic Work Group to implement the required monitoring, management and mitigation measures.

In early 2008, the SNWA again entered into a stipulated agreement with the U.S. Fish and Wildlife Service, National Park Service, BLM and Bureau of Indian Affairs, and a separate agreement with the Moapa Band of Paiutes, to monitor and protect the Dry Lake, Delamar and Cave Valleys, three of the six basins from which the SNWA plans to develop a portion of Nevada's unused groundwater supply. Like the Spring Valley agreement, the Dry Lake, Delamar and Cave Valley agreement provides for extensive monitoring, management and mitigation measures for the groundwater development in those basins.

To support groundwater development activities in Spring Valley, the SNWA has acquired several privately owned ranch properties in Spring Valley. These properties - and the substantial surface water rights associated with them - represent an important management tool that will both help protect the wildlife and aesthetic values of Spring Valley and support the basin's natural recharge. The SNWA does not plan to export these existing surface water rights, but use them exclusively to support Spring Valley's environmental and hydrologic landscape.

## **THREE LAKES VALLEY GROUNDWATER**

In April 2004, the SNWA applied to the BLM for rights-of-way to construct facilities to develop groundwater resources in Three Lakes Valley. After decisions have been made regarding water right points of diversion by the Nevada State Engineer, an Environmental Assessment will be prepared so the BLM can assess the environmental issues associated with this action. In addition to potential effects on desert tortoise from construction, the potential impacts from groundwater pumping on sensitive springs located at Ash Meadows, Corn Creek and Indian Springs would also be analyzed.

## **CONCLUSION**

Access to water resources can be affected by a number of environmental laws, regulations or issues. Compliance requirements can significantly influence when certain resources are made available, or whether certain resources are ultimately made available at all. To facilitate development of future water resource options while taking steps to preserve and protect species and habitats, the SNWA participates in a broad range of environmental processes. The SNWA's commitment to the environment as well as these environmental processes are a critical component of SNWA planning, and will assist the SNWA in maintaining and developing a portfolio of water resource options as described in Chapter 2.