



CHAPTER 5

Environmental Commitment

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.

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 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 Colorado River for the next 50 years.

Implementation of the program began in 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 56 members including federal agencies, state agencies, Indian tribes, and interested conservation organizations. The Bureau of Reclamation is currently pursuing more than 60 restoration and research projects as part of the Fiscal Year 2009 Work Plan.

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, a 15-acre property located along the Colorado River and surrounded by Big Bend State Park. In October 2008, the MSCP Steering Committee agreed to fund restoration of the property. The SNWA is currently working with Nevada State Parks, Nevada Department of Wildlife and the Bureau of Reclamation to develop a restoration plan.

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.

Colorado River Delta

Historically, the Colorado River Delta (Delta) in Mexico sustained significant wetland and estuarine ecosystems that support a diverse array of plant and animal species including several that are listed as endangered in both the U.S. and Mexico. During the last century, the construction of dams, and subsequent diversion of water from the Colorado River in the U.S. and Mexico to support agricultural and urban uses, reduced water and sediment flows to the Delta. This contributed to a substantial reduction of riparian and wetland areas in the Delta from pre-dam levels and resulted in listing of several species as endangered. 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 SNWA participates in a bi-national process formed by the United States and Mexico International Boundary and Water Commissions. This process includes bi-national efforts to explore potential cooperative actions in the areas of water conservation, new water sources, environmental issues and system operations.

Continued drought and increased demands for Colorado River water resources will likely increase the complexity of Colorado River Delta issues.

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, 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 contribute to 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 and head-cutting have dramatically reduced the amount of wetlands in the Wash, leading to

increased sedimentation into Lake Mead, habitat loss and water quality concerns.

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 30 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, which provides a comprehensive set of management actions for stabilizing and enhancing the Wash. Implementing these actions are needed to improve water quality and protect the valley's watershed. Erosion control, environmental monitoring, and wetlands restoration and enhancement are key priorities. The plan was adopted by the SNWA Board of Directors in 2000.

Later that year, 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 and its partners have constructed eleven 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 195 acres with native plants, and performed archaeological investigations. These efforts have resulted in a nearly 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 to address alternatives to protect water quality in the Wash and

Las Vegas Bay of Lake Mead so that conditions do not degrade or result in regulatory action. In February 2004, the committee'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

Las Vegas Valley Watershed Advisory Committee

In May 2007, SNWA adopted a resolution supporting the establishment of regional water quality goals and the development of a regional water quality committee. In support of this effort and in coordination with several regional partners, the Las Vegas Valley Watershed Advisory Committee (LVVWAC) was created. LVVWAC is comprised of the following agencies:

- Clean Water Coalition
- Clark County
- Clark County Regional Flood Control District
- Clark County Water Reclamation District
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Las Vegas Valley Water District
- Southern Nevada Water Authority

Through its mission, the LVVWAC works to protect, preserve and enhance the quality and quantity of water resources in the Las Vegas Valley watershed and to sustain economic well-being and protect the environment for present and future generations. Another important charge of the LVVWAC is coordinating management decisions associated with the Las Vegas Wash.

A major accomplishment of the LVVWAC was the development of a Regional Water Quality Plan (Plan) in 2008. The Plan represents a demonstrated effort among agencies in Southern Nevada to coordinate all existing plans, policies, documents and efforts related to water quality in the Las Vegas Valley watershed and Lake Mead. The Plan identifies seven goals and associated strategies that work to protect the overall water quality of the Las Vegas Valley watershed, while also working to protect the watershed's resources, uses and values.

LVVWAC Regional Water Quality Goals include:

- I. Protect Lake Mead as a source of water for Southern Nevada and downstream users.

2. Meet or surpass federal, state and local standards and regulations.
3. Preserve and enhance the natural, cultural, historic and recreational values for the watershed and Lake Mead.
4. Coordinate water resource management.
5. Manage flood risks.
6. Sustain water and energy resources for future generations.
7. Build community awareness and support for regional watershed management.

The regional member agencies of the LVVWAC (CWC, Clark County Regional Flood Control District and SNWA) have begun developing Annual Operating Plans that detail operational-level tactics to achieve the water quality goals adopted in the plan.

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 underway with respect to the development of these resources. The Interim Guidelines include provisions that will allow the SNWA to recover Muddy River water rights it owns or leases that pre-date the Boulder Canyon Project Act and its Coyote Spring Valley groundwater rights as Intentionally Created Surplus (ICS) from Lake Mead through existing infrastructure. The mainstem Muddy River tributaries and springs of the upper Muddy River provide habitat for several fish species that are considered rare and sensitive. The Muddy River and the Warm Springs area are home to the endangered Moapa dace (*Moapa coriacea*) as well as species of concern, which include 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 additional sensitive species on the river including three fish, two snails and two insect species. Conservation of the Muddy River species is a 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 allows for 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 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 of Directors 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 effects and natural climatic variation 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, as well as the Warm Springs and Muddy River areas, while working toward recovery of listed species and identifying opportunities for sensitive species and their habitat. The RIP Executive Committee is comprised of the SNWA, USFWS, CSI, the Tribe, and MVWD. The RIP geographic program area extends from the upper Muddy River to Lake Mead.

The RIP is expected to be completed in mid-2009 and program implementation will begin shortly thereafter. When the RIP is finalized, SNWA and the Executive Committee members will be able to undertake restoration actions that contribute toward the recovery of listed species. The restoration actions will contribute to a species recovery bank and can be utilized as credit toward future water development actions requiring ESA compliance.

Warm Springs Natural Area

In February 2006, the Secretary of the Interior approved funding through the Southern Nevada Public Lands Management Act (SNPLMA) for SNWA to purchase 1,218 acres of land historically known as the Warm Springs Ranch, located in the Moapa Valley. In July 2006, the SNWA Board approved a purchase agreement for the property located in the Moapa Valley, and completed the purchase in 2007. Because that funding was secured under the SNPLMA "Parks, Trails and Natural Areas" category, SNWA committed to protect and preserve the property as a natural

area. SNWA began convening cooperators to identify long-term management priorities and renamed the property the “Warm Springs Natural Area.”

By purchasing the property, the SNWA was able to protect the majority of the endangered 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 that form the headwaters of the Muddy River. The springs and their outflows onto the Warm Springs Natural Area are home to the majority of the Moapa dace population. A total of 18 endangered, sensitive and endemic species are found on the Warm Springs Natural Area. In addition, the property 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 to manage the entire property as a natural area and develop a long-term management plan. SNWA also committed to manage the property in close coordination with the Moapa Valley National Wildlife Refuge and the Nature Conservancy Muddy River property.

VIRGIN RIVER

As noted in Chapter 2, the SNWA has water rights in the Virgin River. The Secretary of the Interior’s Interim Guidelines include provisions that will allow the SNWA to recover its Virgin River rights that pre-date the effective date of the 1928 Boulder Canyon Projects Act as ICS through existing facilities in Lake Mead. This section describes the environmental initiatives currently underway with respect to these resources.

The SNWA has been involved in environmental studies 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. The SNWA participates in a number of environmental stakeholder forums involving the upper and lower Virgin River. For example, the SNWA has been a member of the Virgin River Fishes Recovery Team since 1994.

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 americana*) 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.

In the upper Virgin River, in 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 provides 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 in Nevada is increasingly facing similar ESA issues surrounding development pressures and as a result, has been begun a regional environmental planning effort called the Virgin River Habitat Conservation and Recovery Program.

Virgin River Habitat Conservation and Recovery Program

Developing the Virgin River Habitat Conservation and Recovery Program (VRHCRP) was a requirement of the Mesquite Lands Act of 1998. 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 the VRHCRP and a Hydrological Monitoring and Mitigation Program (HMMP). The intention of the HMMP is to address future unknown potential effects of groundwater pumping on the Virgin River. The HMMP 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, an Executive Committee was formed consisting of the City of Mesquite, SNWA, Clark County, VVWD, National Park Service, Nevada Department of Wildlife and BLM. Technical committees have also been established to provide recommendations to the Executive Committee. The VRHCRP is expected to become final through an implementation agreement in 2009.

In addition to the VRHCRP effort, the Lower Virgin River Recovery Implementation Team is working to develop a conservation action plan for the endangered roundfin 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

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.

Clark County Multiple Species Habitat Conservation Plan

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

In August 2004, the SNWA applied to the BLM for rights-of-way to construct facilities to develop the Clark, Lincoln and White Pine Counties Groundwater Development Project (GWP) in eastern Nevada. The BLM has determined that it is necessary to prepare an EIS and Biological Assessment (BA) to evaluate the environmental impacts of issuing these rights-of-ways. 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 these data to the BLM for their consideration through the environmental compliance process. Biological information provided includes survey data 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 and the BLM 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 the human environment, which includes such resource topics as geology, soils, water, biology, paleontology, geologic hazards, land ownership and use, special use areas, noise, air quality, visual, cultural resources and socioeconomics. It is anticipated that the EIS will be available for public review in late-2009 and completed in late-2010. The BA will analyze potential project effects on federally listed and candidate species, and will be submitted to the USFWS late-2009.

As noted in previous chapters, the SNWA entered into a stipulated agreement with the USFWS, National Park Service, BLM and Bureau of Indian Affairs (Department of Interior Agencies) to work together to protect the Great Basin National Park and the groundwater dependent ecosystems in Spring Valley. The stipulation establishes an Executive Committee, a Biological Work Group and a Technical Review Panel to develop and implement monitoring, management and mitigation measures. Both Hydrological and Biological monitoring plans have been completed and approved by the Nevada State Engineer, and implementation will begin in early 2009.

In 2008, the SNWA again entered into a stipulated agreement with the Department of Interior (DOI) Agencies, and a separate agreement with the Moapa Band of Paiutes. The stipulated agreement with the DOI is intended to protect groundwater dependent ecosystems and federal resources within Dry Lake, Delamar and Cave valleys, three of the five basins included in the GWP, and in White River and Pahranaagat valleys. As with Spring Valley, this agreement provides for monitoring, management and mitigation measures, which are currently being developed by biological and hydrological technical committees. Baseline monitoring for Dry Lake, Delamar and Cave valleys is anticipated to begin in 2010.

To support groundwater development in eastern Nevada, the SNWA has acquired seven ranch properties comprised of more than 24,000 acres, approximately 950,000 acres in grazing allotment permits, more than 5,000 head of livestock, and more than 33,900 AFY in surface water rights. These land, water and livestock resources are an important suite of management tools that will allow SNWA to meet its environmental commitments by integrating their management with groundwater development. Protection of sensitive habitats, wildlife and the aesthetic values of eastern Nevada can be balanced with SNWA groundwater development through proactive integrated resource management.

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.

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