

The Gila River

The Gila River begins in New Mexico's Gila Wilderness, and ends on the far side of Arizona – where it joins the Colorado River. In both New Mexico and Arizona the river has for many years been a source of controversy. The Gila's major tributary, the San Francisco River, originates in Arizona, flows through forested lands in New Mexico, then crosses into Arizona again to join the Gila River near the mining town of Clifton. New Mexico communities along the San Francisco are few and very small: Luna, Reserve, San Francisco Plaza, Alma, Glenwood, and Pleasanton.

The Gila River is highly prized by the citizens of New Mexico, neighboring communities, conservationists, and other people who love and appreciate the wilderness. But longstanding differences still exist between those who would like to have the Gila River remain in its current state without a major development project and those who would like to see its waters dammed or diverted for other uses.

“Stakeholders in southwestern New Mexico are trying to determine how to use funding from this Congressional water bill to cost-effectively balance water supply and demand while protecting the Gila River.”

Allison Siwik, Executive Director,
Gila Resources Information Project
(Summer 2010 Newsletter)



Gila River

A Century of Arguments

Non-Indian settlement of the Gila and San Francisco watersheds began in the 1870s, following the defeat of the Apache inhabitants. Many more settlers came into the Gila Valley in Arizona than into New Mexico, but in both territories the settlers started to use the river for irrigation farming. Some of the settlers pioneered the small Duncan-Virden Valley, which was split by the boundary between the two territories. Soon the Arizona irrigators began to complain about the New Mexico irrigators using too much water. Arguments among water users, both within Arizona and between Arizona and New Mexico irrigators, continued for years, even after a court-imposed settlement took effect in 1935.

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Then in the 1960s, Arizona sued California regarding use of the waters of the Colorado River, and because the Gila River is a tributary of the Colorado, New Mexico reluctantly became a party to the lawsuit. In 1964 the U.S. Supreme Court decided the case, *Arizona v. California*, 376 U.S. 340 (1964), and limited New Mexico's annual water depletions in the Gila Basin to approximately 30,000 acre-feet. Because of the 1950's drought, a few anomalous floods, and service by irrigators in the Korean conflict, much of the over 22,000 acres of previously irrigated lands in the Gila Basin in New Mexico were fallow at the time. Although the special master in that case, Samuel Rifkind, granted Arizona and California water in excess of their current usage, he limited New Mexico to current demonstrable usage, thus allowing very little future increase in water usage of any kind. In his report to the Court, Rifkind did include a proviso that if conditions in New

Mexico should change, New Mexico could argue for increased apportionment.

Not long thereafter, the Colorado River Basin Project Act of 1968 was passed by Congress and became law. It authorized the Central Arizona Project (CAP) and also provided New Mexico the opportunity to develop an additional 18,000 acre-feet of water from the Gila Basin per year. The CAP is a multipurpose water development project that delivers Colorado River water into central and southern Arizona. The project was designed to relieve groundwater pumping and provide water to nearly one million acres of Indian and non-Indian irrigated land in Arizona, as well as municipal systems in several Arizona communities, including the metropolitan areas of Phoenix and Tucson.

New Mexico's congressional delegation supported the final vote on the CAP legislation, but it is widely recognized that the price of New Mexico's support was the authorization and inclusion of the additional Gila water for New Mexico. However, the 1968 Act required that any water development in New Mexico would be junior to existing uses in Arizona. Because the Gila River does not provide for full rights in most years, and is subject to adjudicated administration, this has created a difficult hurdle for New Mexico.

Gila River Development Proposals in New Mexico

Meanwhile, New Mexico citizens and politicians had long been proposing the construction of a dam and reservoir on the Gila. Their intention was to provide a more reliable water supply for the land that was already irrigated from the river in New Mexico, and to add more irrigated acreage. Of several dam sites that were proposed, the "Hooker Dam" site became the one most favored. In 1946, the Bureau of Reclamation had recommended that Hooker Dam be built in a canyon where the Gila emerges from the Mogollon Mountains, approximately at the boundaries of the Gila

National Forest and Gila Wilderness. A half dozen alternative sites were considered, but all were rejected except possibly Connor Dam site some 30 miles downstream from the Hooker site.

Hooker Dam was in fact authorized by the CAP legislation, although it was less than essential to the larger project. It would help regulate the Gila flow, thus somewhat benefitting both Arizona and New Mexico water users. But Arizonans didn't like the idea of retaining water in New Mexico.

Hooker Dam was a huge source of controversy. Considered by its proponents to be the means by which the Gila River could bring greater prosperity to southwestern New Mexico, it also attracted the attention of many who would protect the river and its environment from development. The Wilderness Society and the Sierra Club, among other organizations, were concerned that the reservoir's inundation of a part of the Gila Wilderness, a unique and valuable ecological region and the first such designated Wilderness in the United States, would presage even more serious invasions of wilderness areas elsewhere. Finally, in 1977 the would-be Hooker Dam was killed.

The Arizona Water Settlements Act of 2004

After four years of negotiations between the states of New Mexico and Arizona and Arizona water users, the Arizona Water Settlements Act of 2004 (AWSA) was approved by Congress and signed into law. In the main, this complex statute settles some major Indian water rights issues in Arizona, limits Arizona's repayment obligation for the CAP, and provides for several infrastructure improvements in Arizona. Title II of the Act, in addition, offers a new procedure – together with federal funding – by which New Mexico might make use of the Gila water that had been authorized in 1968.

First, the 18,000 acre-feet annual allocation was reduced by the Act to 14,000, to “. . . permit consumptive use in New Mexico . . .

not to exceed an annual average in any . . . 10 consecutive years of 14,000 acre-feet (an average of 10,000 acre-feet annually for the Gila River and 4,000 acre-feet for the San Francisco River) including reservoir evaporation.” More generously, the Act authorizes at least \$66 million of non-reimbursable federal funds for projects that meet a water supply demand in New Mexico, including the construction of facilities, environmental planning, environmental compliance activities, mitigation, and stream-and-watershed restoration. The money is to be paid at \$6.6 million each year for ten years, starting in 2012.

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Moreover, as much as \$62 million more may be provided if New Mexico water users choose to execute a contract to develop a project or projects to use the additional 14,000 acre-feet provided in the 2004 Act. The 2004 Act designates the New Mexico Interstate Stream Commission (ISC) as the administrative agency for all those funds, and any expenditure of funds must be approved by the ISC in consultation with Southwest New Mexico stakeholders.

Two contractual agreements are specified by the Act as mechanisms for accomplishing the authorized activities: (1) The Act ratifies a “Consumptive Use and Forbearance Agreement” (CUFA), which is a contract between Arizona, various water rights holders, and the U.S. Secretary of the Interior, and approved by NM, that enables New Mexico to develop the additional 14,000 acre-feet of Gila Basin water without objection by the Arizona parties. Pursuant to CUFA, the Secretary, through the Bureau of Reclamation, will provide additional CAP water to users in Arizona in exchange for diversions made by

users in the Gila Basin in New Mexico. To fully protect Arizona users, New Mexico must allow certain minimum flows (bypass flows) to enter Arizona each day of each year. Also, New Mexico users cannot divert water unless there is at least 30,000 acre-feet in Arizona's San Carlos Reservoir.

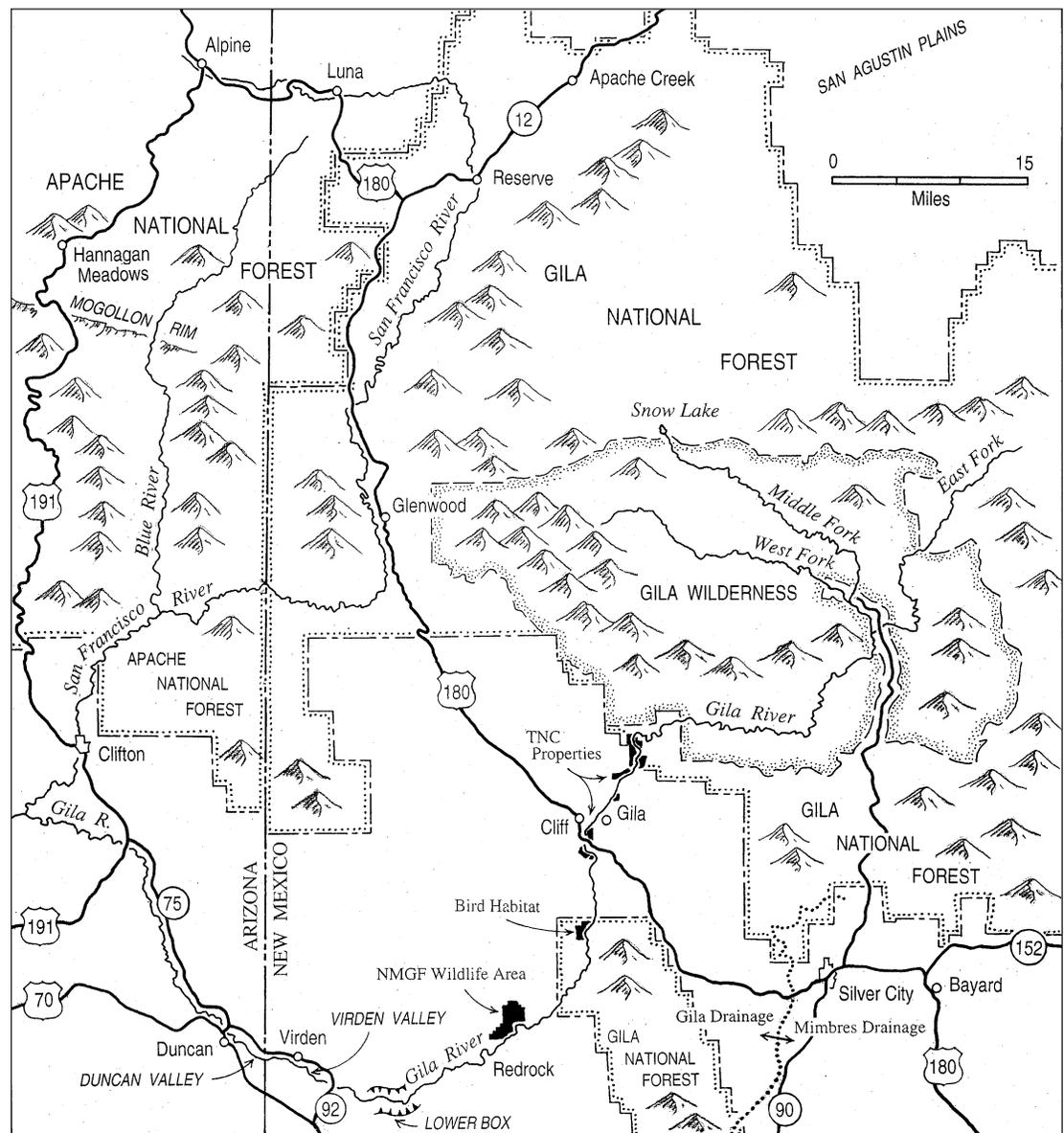
(2) The "New Mexico Unit Agreement" (NMUA) will be executed between the Secretary of the Interior and New Mexico officials at such time as New Mexico decides upon a project or projects to use or "develop" the additional water. Such a project is to be called the "New Mexico Unit of the CAP." If New Mexico does decide on

such a project, it must provide notice no later than December 31, 2014 that it intends "to build the New Mexico Unit." Then as much as \$62 million – the exact amount depending on project cost and construction schedule – will be provided.

Environmental Compliance, Ecological Values

The Water Settlements Act states that planning activities and any eventual project shall comply with the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and all other pertinent environmental requirements. The

The Gila and San Francisco Rivers
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Gila in New Mexico supports a wide variety of plant and animal life, and its rare species call into play the Endangered Species Act. The watershed's federally endangered species include the southwestern willow flycatcher, Gila trout, Gila topminnow, and Gila chub (proposed). Federally listed threatened species are the Chiricahua leopard frog, bald eagle, spikedace and loach minnow. A number of other species are state-listed, such as the common black-hawk, roundtail chub and the Mexican garter snake. The roundtail chub is currently being reintroduced to some area waters by the New Mexico Department of Game and Fish.

Several national, regional, and local organizations have long been involved with environmental matters in the Gila area, and they are currently participating in the Southwest New Mexico Stakeholders Group as well as in their own activities. The Nature Conservancy, for example, owns over 1,200 acres along the river in the Gila-Cliff area and holds Forest Service grazing permits for acreage in the Gila watershed within the Gila National Forest. In these areas it is undertaking habitat restoration work. The Nature Conservancy has also worked with the State and the Bureau of Land Management to protect land in the river's Lower Box area and elsewhere in the watershed. Other environmental groups, such as the Gila Conservation Coalition and Center for Biologic Diversity are also heavily involved.

Environmental improvements using the allocated funds may be in the offing for the San Francisco River area. To date, the San Francisco has not figured prominently in the planning effort, but interest there centers on possibilities for watershed restoration in some woodland and forested portions of the watershed. Restored areas may yield more water to streams, or may contribute to changes in the timing of runoff that result in greater perennial flow in some cases, depending on the type and magnitude of treatment and on climatic conditions. Additionally, in 2009 the basic hydrogeologic framework of the San Francisco basin was characterized, providing

initial information for future studies of groundwater and surface-groundwater interactions in that area.

Continued evaluation of environmental concerns will be an important part of the AWSA planning process. Full compliance with NEPA and the ESA will be required prior to construction of any project.

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Current Undertakings

Planning activities in New Mexico's Gila area began shortly after enactment of the Arizona Water Settlements Act. The ISC has taken measures to ensure the planning process allows for inclusion of all stakeholders. The Southwest New Mexico Stakeholders Group was established to collaboratively design, oversee and implement a process to provide for planning and decision making that will lead to proposals for utilization of AWSA water and funding. The membership of the Southwest New Mexico Stakeholders Group includes a broad array of interested citizens, interest groups and agencies, including several county governments, agricultural groups and environmental groups. The Southwest New Mexico Stakeholders Group committees include the communication, technical, implementation, and other subcommittees as needed to direct the planning process.

In addition to this group, the Gila San Francisco Water Commission continues to consider implementation of a project or projects under the AWSA. The Commission is a body of elected officials from the four county area that is operating under a Joint Powers Agreement. Members include

Catron, Grant, Hidalgo, and Luna Counties, all incorporated municipalities except for Silver City, and all Soil and Water Conservation Districts in the four county region. Silver City chose not to participate.

During 2009, a Gila Science Forum was convened to identify, discuss and recommend (1) ways of determining the potential effects of flow modification on aquatic and riparian resources of the Gila River (including risks and uncertainty), and (2) how information gleaned from such efforts might be integrated to provide an ecosystem-based assessment of the effects. Systems dynamics modeling that integrates stakeholder values, legal constraints and possible water management policies was recommended for future model refinements.

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To help with good decision making, during 2009 an inventory of publications was completed to facilitate easy access to relevant scientific information. The publications were grouped by subject area and are available on the Arizona Water Settlements Act Planning Process website. Also during 2009, phase I studies to improve the technical knowledge regarding water supplies and demands in the four county area were completed; these included initial geologic characterization of the San Francisco Basin, development of a work plan for improved understanding of the conceptual model of surface water groundwater interactions in the Gila Basin, and review of water demands in the region to identify areas of greatest uncertainty. The scope of these studies was limited based on available funding, and may continue when additional funding is available.

Regional Water Demand

Those in opposition to diversion of additional Gila water argue that given the population in the region, sufficient additional sources of water are available without the development of the Gila River waters. They believe conservation and off-river wells to be viable mechanisms to meet projected regional water demands. Additionally, Freeport-McMoran, Inc. (formerly Phelps-Dodge Corporation) owns a substantial amount of water rights which may be available in the future. Concerns over this approach center on continued dependence on non-renewable ground water supplies, and the reduction of base flows in the Gila River. The on-going planning will result in base-line studies to identify current and future water supply and demand conditions and the consequences of each.

A Way Forward

The State is working with all stakeholders to come up with a balanced approach to resolving the issues surrounding the Gila River. Efforts are being made to address a wide range of water supply/demand management alternatives to meet future water needs, rather than focusing only on diversion alternatives. Nonetheless, the parallel efforts of both the Southwest New Mexico Stakeholders Group and the GSFWC to identify a viable project under the AWSA contribute to divergent views of the best water management strategy for Southwest New Mexico. By 2014, the State of New Mexico is expected to provide a well thought out proposal to the Secretary of the Interior in order to develop the additional water apportioned in the Act. It will be a challenge to find a consensus set of viable recommendations by that date.

One of the ongoing technical studies is a computerized water supply model being developed by Sandia National Labs. The model portrays and tests technical aspects of the Gila River system – its runoff, rainfall, tributary flows, irrigation components, and many other factors. To date, the model is

still working to adequately reflect the physical realities of the stream systems. Sandia Labs is working cooperatively with the Southwest New Mexico Stakeholders Group to identify available data and to get input and improve the model construction.

The current planning process is assessing projects that do not involve a dam. Some possibilities being considered have to do with how to “divert” the allocated water without constructing a dam, such as by off-river well fields and by the construction of off-channel ponds and reservoirs or a combination of projects. Other possibilities have to do with using the water, such as by municipal use in the Silver City/Mining District or Deming, or by using it for habitat/watershed restoration, or as supplemental irrigation water. In the fall of 2009, the Southwest New Mexico Stakeholders group asked stakeholders in the region to bring forth their ideas for viable projects under the Arizona Water Rights Settlement Act.

These activities are consistent with the intent of the U.S. Senate’s Energy and Natural Resources Committee, which stated in its

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report accompanying the Arizona Water Settlements Act: “Any consideration of water use under [Title II] Section 212 will be accompanied by the consideration of a full range of alternatives that apply to address water supply needs in southwest New Mexico.”

Similar thoughts have been expressed at the State Legislature. Representative Andy Nuñez has said, for example, “Putting the Gila River’s water to beneficial use does not mean we have to dam it; it means we need to put it to beneficial use. There are many ways to put water to beneficial use.”

By Jerold Widdison (October 2008).

Updated by Joanne Hilton and Susan Kelly (2009).

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