

ASDM NEWS

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A newsletter for friends of the Arizona-Sonora Desert Museum

Establishment of the Ironwood Forest National Monument



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In the 19th and early 20th centuries, the Southwest frontier was viewed as a great resource for mining, grazing, and agriculture. Gradually attention was given to preservation of the Sonoran Desert landscape.

So when President Bill Clinton created the Ironwood Forest National Monument in 2000, this signaled a monumental change and represented a great victory for those working at the Arizona-Sonora Desert Museum and many other organizations. Nearly two decades of work by the Desert Museum were recognized by this important designation.

The Beginnings

Previous study of the area that is now the Ironwood Forest National Monument was sparse, with only a few plant collections identified between 1905 and 1970. In the early 1970's, as part of his PhD dissertation, Thomas R. Van Devender studied packrat middens

in the Waterman Mountains and Wolcott Peak (part of Ragged Top, a cliff-riddled mountain northwest of Tucson). In that fossil study he also collected modern flora. By May of 1983 Tom was working at the Desert Museum as Senior Research Scientist and continued his study of the interesting biology on the limestone of the Waterman range.

In 1985 I began my work for the Desert Museum in the Plant (Botany) Department and soon I began exploring Ragged Top on my own. With Tom's encouragement I began studying and collecting plants there. Soon I became totally focused on learning more about the area including Pan Quemado, the Samaniego

Hills, and the Silver Bell and Waterman Mountains. In my first 5 years studying the area I logged hundreds of hikes, however my focus tended to stay with Ragged Top. It was during my studied focus that I discovered two plant species found nowhere else in the U.S (false grama: *Cathastecum brevifolium*, and garambullo: *Pisonia capitata*) and numerous grassland and woodland species isolated there since the last ice age.

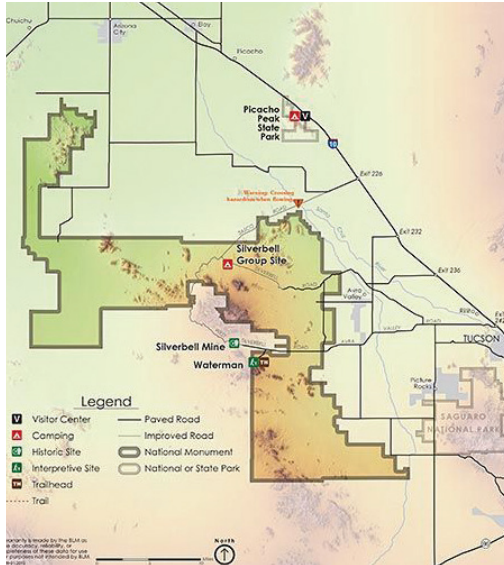


dated them, and were able to publish an expanded study in 1993, comparing them to the modern flora.

The Team Grows

In 1998 the Desert Museum was fortunate to hire Gary Nabhan as Director of Conservation and Science who was studying ethnobotanical uses, animal interactions, and plant associations with the desert ironwood tree (*Olneya tesota*). Dr. Mark

preservation with the powers given to him under the Federal Antiquities Act of 1906. Very quickly things revved up. Secretary Babbitt's office contacted Administrator Huckleberry who immediately thought of the proposed Ironwood Preserve area as much of the acreage was BLM land. Pima County set up a study to look at hydrology and water resources, geology, flora, fauna, cultural and historic resources, and current



In 1991 I published my first flora (a list of plants occurring within a study area that includes both annotated scientific and common names) – that of the Silver Bell Mountains, followed by Pan Quemado in 1996, and Ragged Top in 2000. I learned even more about rare and endangered species in that area in 1991 when I worked on a Bureau of Land Management (BLM) grant mapping the endangered Turk's Head cactus (*Echinocactus horzonthalonius var. nicholii*) in the Waterman Mountains. A couple of years later Tom and I and another botanist nearly simultaneously found an uncommon plant species, Parish Indian Mallow (*Abutilon parishii*), in the Tucson Mountains, on Ragged Top, and in Finger Rock Canyon. A US Fish and Wildlife contract kept us busy surveying for this species throughout Arizona and Sonora and ultimately it was determined to be too common for protection status.

Tom's expertise on packrat midden fossils kept me interested in what he had found on Wolcott Peak in the early 1970's. We reviewed all his fossil samples, re-carbon

A. Dimmitt, the Desert Museum's Director of Natural History, Tom, and I helped Gary by providing him with information; especially on our observations throughout the ironwood's range (in the Silver Bell and Tucson Mountains and around Ragged Top). In the late 1990's, Pima County had been looking at the western watershed of the Avra Valley with regard to their Sonoran Desert Conservation Plan. In 1999, the Pima County Board of Supervisors passed a resolution to pursue the establishment of a Ragged Top and Silver Bell Mountains Ironwood Preserve county park. When Gary Nabhan published his book, "Desert Ironwood Primer," in 2000, Pima County Administrator Chuck Huckleberry made the connection with the Desert Museum as a means to make this resolution happen.

Connections Are Made

At the same time, President Clinton's last term in office was winding down. His love and appreciation for our nation's natural resources led him to task Secretary of Interior Bruce Babbitt (former Governor of Arizona) with finding areas worthy of

land uses including mining, ranching, recreation, adjacent land owners, ranchers, and mining companies. The Coalition for Sonoran Desert Protection had input and proposed boundaries were drawn and redrawn.

The Desert Museum's two-plus decades of study positioned us to be a great resource of knowledge regarding the western Avra Valley watershed. The Museum's Executive Director at the time, Rick Daley, was contacted to lend our assistance and expertise in many areas of site inventory and analysis. In addition to Mark Dimmitt, Tom Van Devender, Gary Nabhan, and me, the Desert Museum enlisted help from other Museum staff members; Assistant to Systems Administrator-Records Kim Buck, Conservation Biologist Yajaira Gray, and Geologist Robert Scarborough. In an amazingly short time we were able to create a master inventory of geological and ecological diversity for that area. Our team compiled the flora, created a vegetation map, compiled existing geological maps, and filled in missing soils data.

The Designation Happens

In March of 2000 this information was incorporated into a huge document of the Sonoran Desert Conservation Plan called Resources of the Avra Valley Subarea. That document was sent to Secretary Babbitt's office and by May of that year things were finalized. Secretary Babbitt attended a special Pima County Board meeting announcing the designation of the area to be called "Ironwood Forest National Monument" under Presidential Proclamation 7320, dated June 9, 2000. After the meeting I accompanied Secretary Babbitt and Administrator Huckleberry (followed by cars full of reporters) to Ragged Top, where we climbed a steep slope to a spectacular view point at the base of the sheer cliffs. Secretary Babbitt and I marveled at the scenery while panting reporters pulled cactus spines from their shoes! What seemed to be a wonderful finale and success turned out to be just the end of a chapter, not the end of the story.

The Desert Museum's contribution in making this happen identified us as experts about the area, and in 2001 the Desert Museum received a contract from the BLM to do a vegetation and flora survey of the entire area. Our efforts were headed by Mark Dimmitt and included Tom Van Devender and me. Dozens of journeys into the area were made and more than 100 transects were made to quantify the vegetation. In addition, saguaros (*Carnegiea gigantea*), foothill (*Parkinsonia microphylla*) and blue (*Parkinsonia florida*) palo verde, velvet mesquite (*Prosopis velutina*), and desert ironwood (*Olneya tesota*) trees

were counted, measured and rated for health in these plots. We noted that the invasive Buffelgrass (*Cenchrus ciliaris*) was making inroads in some areas. We mapped and studied the Buffelgrass and made recommendations for its control. We also surveyed four wildlife species (lesser long-nosed bat, desert tortoise, chuckwalla, and desert iguana). Buffelgrass has turned out to be a pernicious and persistent pest in the Sonoran Desert and the Ironwood Forest National Monument was no exception. In 2009 the Desert Museum won another contract from the BLM to re-survey the entire monument for the invasive grass. We found range and density expansions in some areas and dieback in others. Discussion of impact and recommendations were again made for control.

A Powerful Legacy

So, what did we (the public) get for everyone's efforts? Fragile archaeological sites throughout the area provided the legality for this designation, while the preserved and protected geology, flora, and fauna are truly a legacy. Within an hour's drive of downtown Tucson we now have 189,712 acres (78,807 hectares) of varied, protected Sonoran Desert habitat stretching from the Roskrige Mountains north of Kitt Peak to nearly Casa Grande. This national monument encompasses parts or all of seven desert ranges (Pan Quemado, Ragged Top, Samaniego Hills, West Silver Bell Hills, and the Silver Bell, Roskrige, Waterman, and Sawtooth Mountains) and parts of Avra, Santa Cruz, Tat Momoli, and Aguirre Valleys. Elevations range from 1575' (480 m) in the Aguirre Valley to 4261' (1299

m) at the summit of Silver Bell Peak. It is managed by the BLM, but there are also State Trust and private holdings within. At this time, we have identified nearly 600 taxa of plants in 82 families. We have a very thorough baseline of the flora and vegetation which will help us to monitor changes in the future. There exists within this area a healthy population of desert bighorn sheep (*Ovis canadensis nelsonii*) and chuckwallas (*Sauromalus obesus*) near the limits of their ranges. There are abandoned mines creating homes for colonies of bats. And last but not least there is an incredible mix of geology, topography, and microhabitats.



The Ironwood Forest National Monument has brought Southern Arizona a great, rugged recreational resource to cherish. Today our local community continues the work with trash cleanup, buffelgrass removal, revegetation, and ongoing public education. In the end, this is something for Desert Museum members and our community to be proud of. It is a powerful reminder of how the collaborative efforts of many individuals, organizations, and government entities came together for the good of all.

For information on the sources used in this article please go to www.desertmuseum.org/infmrefs.

