



Photo courtesy of David Charlet

Southern Nevada Restoration Team

Accomplishments
Fiscal Year 2011



Southern Nevada Restoration Team

2011 Accomplishments

SOUTHERN NEVADA AGENCY PARTNERSHIP

SNAP is a partnership of federal land managers from the U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service and the National Park Service, formed in 1997 to coordinate the protection, conservation and use of the federal lands.

SOUTHERN NEVADA RESTORATION TEAM

SNRT was established in 1998 to respond to major issues of regional exotic plant impacts and human-caused disturbances. The purpose of the team is to coordinate exotic plant management and land restoration across agency boundaries by sharing information, labor and other resources to maximize effectiveness and cost efficiency.

Vision To maintain the ecological health of native species, habitats, and ecological processes across agency boundaries in southern Nevada, restore degraded areas, and manage the spread of exotic plant species.

Mission Promote restoration of public lands surrounding Las Vegas valley through education, community involvement, research, and project implementation.

SNPLMA PROJECTS

Most of SNRTs activities are partly or completely funded by the Southern Nevada Public Lands Management Act (SNPLMA) through these Conservation Initiatives projects:

- Round 4, priority 4-11
Invasive Weed Removal and Habitat Restoration
- Round 5, priority 5-3
Interagency Restoration – Weed Management, Phase II
- Round 6, priority 6-7
Habitat Restoration – Program Sustainability

Several SNRT projects are funded by SNPLMA Capital Improvement projects or grants.

FUNDING STATUS				
	\$ APPROVED	\$ SPENT	\$ OBLIGATED	\$ REMAINING
Round 4	5,596,988	5,595,981	0	1,007 deobligated
Round 5	5,140,667	4,458,537	599,423	82,706
Round 6	8,884,501	2,750,202	974,083	5,160,215



FY 2011 ACCOMPLISHMENT HIGHLIGHTS

Interagency protocols were completed for the inventory and documentation of habitat disturbances and areas in need of restoration, as well as documentation of restoration treatments and effectiveness monitoring of those treatments. The protocols are now being incorporated into an interagency database that should be ready for implementation in early 2012.

“Alternative Spring Break” project in a remote and rugged area of the Desert National Wildlife Refuge involved volunteers from University of Nevada and Friends of Nevada Wilderness, as well as Wilderness Interns from the Student Conservation Association. They spent 5 days removing 2,900 feet of fence from a no-longer-needed bighorn sheep enclosure, hiking in more than 2 miles each way and carrying the wire and other materials out on foot. At least 3 tons of scrap metal were recycled. Various funding sources contributed to this accomplishment.

FWS began a major restoration project at Corn Creek. Contractors re-dug the deepest of the ponds and redirected the stream channels from irrigation ditches to historic meandering patterns. The restoration should improve wildlife habitat and riparian vegetation structure, and reduce aquatic invasive plants and animals. A horse pasture was converted to wetland. The project increased stream channel habitat at Corn Creek by 1,105 feet, and will generate 2 acres of future riparian habitat.

SUMMARY OF ACCOMPLISHMENTS

	FY 2011	TOTAL
Disturbances on public lands restored	2,675 ACRES	5,962 ACRES
Unauthorized roads/trails restored	41 MILES	149 MILES
Invasive non-native weeds treated	1,600 ACRES	4,142 ACRES
Protective barriers installed or repaired	10,863 FEET	99,450 FEET
New disturbances surveyed	1,809 ACRES	13,730 ACRES
Unauthorized roads/trails surveyed	7 MILES	159 MILES
Trash and debris removed	67 CUBIC YARDS	4,569 CUBIC YARDS
Native plant seed collected	78 LBS	655 LBS

Pahranagat NWR achieved significant reductions of Russian knapweed in some of the most infested fields; one field in particular saw a reduction in cover of Russian knapweed by 97.4%, and now has roughly 7 native grass plants to every Russian knapweed plant. Also, a 3 phase project to restore and enhance endangered southwestern willow flycatcher habitat is roughly half complete, ahead of schedule, and showing early signs of success.

Quarterly team meetings provided opportunities for members to share information about current projects, including progress and successes, as well as needs and challenges. New research findings concerning restoration ecology and practices were presented. Meetings in 2011 included field tours of the National Park Service's native plant nursery, restoration projects at Lake Mead National Recreation Area and Spring Mountains NRA, fire ecology and revegetation studies at Red Rock National Conservation Area, and the Wesley E. Niles Herbarium at University of Nevada, Las Vegas.

The Team drafted and submitted 16 research concept papers to the Science and Research Team for the 2nd annual Needs Assessment.

A new Interagency Restoration Coordinator was hired in November 2010.

The first of our SNPLMA projects, Round 4 priority 4-11 Invasive Weed Removal and Habitat Restoration, is 99% completed and is being closed out as of December 2011. Funding for Round 5 priority 5-3 Interagency Restoration – Weed Management, Phase II was extended to December 2012. Round 6 priority 6-7 Habitat Restoration – Program Sustainability was extended to December 2014.

SNRT's activities contribute to accomplishing the following agency goals and performance measures established in accordance with the Government Performance and Results Act (GPRA):

Dept. of Interior
(BLM, NPS, FWS)

1.1 Restore watersheds and landscapes

1.1 Manage and protect watersheds and landscapes
2.1 Provide habitat for biological communities to flourish

3.1 Improve the condition of cultural and natural heritage resources

Dept. of Agriculture (FS)

2.1 Restore and conserve the nation's forests, farms, ranches, and grasslands

2.2 Lead efforts to mitigate and adapt to climate change

2.3 Protect and enhance

America's water resources.



Photos, top to bottom: SNRT visits fire restoration study (Red Rock Canyon NCA, BLM); SNRT visits Lee Meadows restoration areas; Volunteers, Great Basin Institute, Friends of Nevada Wilderness, and Forest Service staff hiked 1,900 seed balls to Griffith Peak in September 2011.



Project Details

Desert National Wildlife Refuge (FWS):

Corn Creek Restoration: Realigned stream channel and ponds to restore natural flow and reduce aquatic weeds, and converted a pasture to wetland, increasing riparian habitat by 1,100 ft (2 acres). Salvaged 667 native plants, 62 flats, 28 plugs, and 993 cuttings from 18 species for restoration of the realigned stream, wetland and disturbed areas around the new visitor center under construction. Collected 28 lbs of seed from 14 species. Planted and maintained 74 plants in disturbed sites.

Invasive Weed Management: Treated 86.5 acres for 23 weed species at 27 infestations around Corn Creek, remote springs and other sites throughout the refuge.

Corn Creek Grounds and Trail Maintenance: Removed 1,567 ft of barbwire fence; all scrap metal was recycled. Constructed 2,519 ft of trail, including the new Birdsong and Whispering Ben Trails. Removed fallen trees and hazardous limbs, and cleared vegetation from existing trails.

Wilderness Protection/Restoration: Constructed 253 ft of fence at 3 dispersed campsites. Restored 2,545 ft of illegal roads (plus 9,971 ft natural/passive restoration). Constructed 35 ft post and cable fence to limit access. Volunteers removed 2,920 ft of sheep fence; 3 tons of scrap metal recycled. Removed 31 cubic yards of trash from 2 sites totaling 10.5 acres. Restored 3 backcountry springs.

Volunteer Events: Coordinated volunteer events with Friends of Nevada Wilderness, Friends of Desert Refuges, UNLV social clubs, Red Rock Audubon, Fraternity of the Desert Bighorn, the 5,000 Kids Organization, Boy Scouts of America, Four Seasons Hotel/Casino, and Get Outdoors Nevada. Volunteers and Nevada Conservation Corps (NCC) crews helped in weed control, plant salvage, seed collection, “seed ball” making, planting, trail building, road restoration, fence and trash removal.



Photos, top to bottom: Volunteers restore decommissioned road (Desert NWR, USFWS); Volunteers planting at Corn Creek (Desert NWR, USFWS)

Moapa Valley National Wildlife Refuge (FWS):

Apcar Habitat Restoration: Planted 875 plants and installed irrigation. Maintained 3,815 plants and irrigation on 10 acre revegetation site. Applied rabbit/ground squirrel repellent to protect plants and irrigation lines. Collected 4.5 ounces of seed from 6 species of plants.

Plummer and Pedersen Riparian Habitat Restoration: Planted 94 trees, shrubs and grasses; maintained another 150 planted trees and shrubs. Installed and maintained

irrigation. Collected 20 ounces of seed from 4 species of plants; salvaged 20 desert tobacco plants for future revegetation. Cleared vegetation from 1,650 square ft of trail.

Invasive Weed Management: Treated 35 acres for 15 weed species, and 3,265 square ft of aquatic weeds. NPS's EPMT treated 23 acres of weeds and removed 8,850 sq ft of aquatic weeds (not SNRT funded).

Volunteer Events: Coordinated 3 volunteer work days with more than 45 volunteers, including groups from UNLV and a local heart center. Coordinated volunteers and Nevada Conservation Corps crews in invasive species removal, planting, and irrigation installation.

Moapa Dace: Assisted USGS to install and maintain underwater cameras and fiber optic cables. Helped with snorkel surveys and data gathering to link population data with fiber optic temperature data throughout the Apcar and Pedersen stream channels.

Pahranagat National Wildlife Refuge (FWS):

Cottonwood Springs Restoration: Restored 1.15 acres at spring site. Coordinated with contractor, monitored site following construction; removed protective jute matting to initiate growth on about .23 acre, and seeded

0.15 acre. Assisted with the introduction of 1,000 Pahranagat roundtail chub.

Ell Spring Restoration: Restored .55 acre site. Reviewed and made comments on consultant's revegetation plan. Monitored site following construction.

Ag Field Restoration: Treated 120 acres of Russian knapweed on former agricultural fields. Imported wetland soil from within refuge and spread onto Lower Cropland Field (8 acres); prepped soil by discing, and seeded the site. Designed, constructed and maintained irrigation system. Monitoring and vegetation data collection.

Southwestern Willow Flycatcher (SWFL) Habitat Restoration: Completed restoration/enhancement plan and data collection/analysis of existing SWFL habitat (2.5 acres). Selectively cleared dead and down understory vegetation (.7 acre). Planted 330 plants/cuttings; spread small amount of seed; constructed and installed wire mesh plant cages. Collected and planted 40 wild grape cuttings.

SWFL Habitat Creation: White River Inflow (1.3 acres): Mowed dogbane and bulrush, and disced the area. Planted 700 live plants/cuttings with NCC crew; planted another 50 shrubs with volunteers. Selectively cut bulrush as restoration site maintenance.



Photos, top to bottom (Moapa NWR, USFWS): Plants staged and ready to be transplanted; Every plant location was flagged on the ground; NCC Crew members transplanting plants

Northeast Shoreline (1 acre): Planted 220 trees and shrubs with volunteers.
Inflow Marsh (20 acres): Assessed habitat conditions and mapped current vegetation; began to develop a revegetation plan.

Shoreline Restoration/Enhancement: Collected data on milkweed phenology and bulrush establishment. Seeded .15 acre of milkweed and planted 300 coyote willow cuttings on 1 acre on the southwest side of Upper Pahranaagat Lake. Assessed 2 miles of the Upper Lake's eastern shoreline for tree removal/pruning; collected vegetation data on emergent cattail and bulrush.

Integrated Pest Management: Treated 122 acres for 8 species of invasive weeds. Mapped 306 acres of other infestations. Collected vegetation data in Black Canyon. Participated in Pahranaagat Valley Cooperative Weed Management Area working group.

Saltbush Community Restoration: Collected more than 3.3 lbs of seed from native quailbush, 4-wing saltbush, and shadscale.

Riparian Habitat Restoration: Collected 12 lbs of seed from velvet ash. West Terrace (1.2 acres) - Disced the site; planted 320 live plants/cuttings and spread small amount of seed with volunteers.

Burn Area Restoration: "Bowl" (1.25 acres) - Monitored overall plant health and survival following prescribed burn. Selectively cut bulrush as restoration site maintenance.

Lower Lake Restoration: Mesquite Bosque (acres unknown at this point); Assessed physical, chemical, and biological site conditions.

Wetland Restoration (Dove/WHIN wetland): Assisted with prescribed fire (500 acres). Prepped site by discing. Planted and seeded 2 acre test plot with volunteers.

Monitoring: Monitored all restoration and revegetation project sites from the past 18 months to assess plant survival.

Ash Meadows National Wildlife Refuge (FWS):

Note: Ash Meadows projects are not funded by SNRT's Conservation Initiatives but with other SNPLMA funding.

Jackrabbit Channel: Monitored and maintained 1/3 mile of restored stream channel; manually removed weeds from 20 acres; removed cattails from 490 linear ft. Treated willows to limit expansion. Maintained drip irrigation system to plantings.

Bradford/Evil Acres/Tubbs Spring: Monitored and maintained previously restored site; controlled weeds by pulling or mowing. Planted 250 native plants with volunteers.

Point of Rocks: Planted 253 native trees and 400 grasses. Maintained previous plantings and drip irrigation system. Treated 5 acres of weeds in old agricultural field by pulling, spaying or scraping; removed 4 species of weeds by hand along the boardwalk.



Photos, top to bottom (Pahranaagat NWR, USFWS): Cottonwood Spring restoration area; SWFL habitat restoration

Removed cattails and willows in 330 ft of stream channel and Kings Pool. Pruned or removed vegetation along trails and boardwalk.

Upper Carson Slough: Planting for Phase II was completed, but a December 2010 flood event washed away most of the new vegetation, and brought in new weed infestations, in sections of the restored channel. Repairs were made, including bank stabilization, debris removal, replanting (9,300 plants and 500 plugs) and seeding (72 lbs). Weeds were pulled by hand and/or treated by spraying, cutting or mowing.

Cold Spring: About 125 Salt cedars were treated by pulling, cutting and spraying.

Warm Springs Complex: Planted 1,461 grass plants with weed barrier fabric and burlap for bank stabilization, and applied 63 lbs of seed of 5 species by slurry mix along 2 miles of restored Indian Springs outflow stream channel. Treated salt cedars at Scruggs Spring.

Spring Mountains National Recreation Area (USFS):

Archery Range Restoration: Conducted planning and public scoping for the Archery Range restoration project. In cooperation with FWS, the biological evaluation/biological assessment and project design were completed. The Decision Memo was signed to restore 4.7 acres.

Griffith Peak Trail Restoration: Restored 0.3 miles of user-created trails. Forest Service staff, Friends of Nevada Wilderness, Great Basin Institute (GBI), and volunteers collected 0.4 lbs of seed from three native plant species, made 1,900 seed balls, and placed the seed balls on top of Griffith Peak.



Photos, top to bottom (Ash Meadows NWR, USFWS): Before and after, cattail control at Point of Rocks pool; Before and after restoration, Rogers/Longstreet Channel, April 2011 and August 2011; Before and after, southern end of Fairbanks/Longstreet phase two restoration, April 2011 and August 2011

Campground Forest Restoration: Commenced thinning of 37 acres of campground forest trees attacked by bark beetles.

Lee Meadows Restoration: Salvaged 400+ whole plants of Torrey's milkvetch from the construction site, of which 99 survived through FY11. 1,248 containerized plants from five species were grown from cuttings, whole salvaged plants, and collected seed. 3,500 seed balls were made from four species. Two headcut structures and five erosion control structures were built to prevent further headcutting and downcutting the channels. The erosion control structures occurred over approximately 2.1 acres and were estimated to improve forest health by minimizing further erosion of approximately 7.1 acres. Two culverts contributing to erosion were armored. Two pedestrian bridges were installed across the artificial drainage to provide safe access to the meadow for recreationists. The bridges are anticipated to reduce further bank erosion along an unspecified distance by providing safe passage for visitors to the meadow. During construction, the total disturbance footprint was reduced. Roughly 0.4 acres of Mt. Charleston blue butterfly habitat was impacted instead of the 1.2 acres predicted during project planning.

Wilderness Restoration: In partnership with Friends of Nevada Wilderness, 98 volunteers donated 930 hours to restoring wilderness areas and trails.

Site & Trails Restoration: Restored 0.18 acre of ground disturbance and 4 miles of trails.

Invasive Weed Management: NPS Exotic Plant Management Team surveyed 268 acres of 10 weed species, and treated 31 infested acres of 211 gross acres. EPMT also conducted an Early Detection Rapid Response project controlling a 2-acre patch of African mustard near Lee Canyon Ski Resort.

Fence Repair: Assessed fences for repair needs, and repaired 3,579 ft of fence.

Disturbance Assessment: Recorded and assessed 4.7 miles and 2.5 acres of new disturbances.

Monitoring: Monitored 63 disturbance and restoration sites.



Photos left to right (Spring Mountains National Recreation Area, USFS): Lee Meadows pedestrian bridge; Thinning bark beetle infected trees; Erosion before restoration; Erosion control after restoration

Seed Collection: Collected more than 2.2 lbs of seed.

Plant Materials: Organized the Forest Service herbarium, data, GIS, and updated seed collection and weed identification guidebooks specific to the SMNRA.

Restoration Planning: Continued planning to complete forest restoration and illegal motorized trails restoration projects on the SMNRA. Continued to identify appropriate volunteer-based restoration projects on the SMNRA.

Bureau of Land Management:

Coyote Springs ACEC: Restored 4.7 acres of denuded OHV disturbance and 5.5 miles of illegal routes. Removed 32 cubic yards of trash.

Gold Butte ACEC: Restored 6.3 miles of illegal routes in critical tortoise habitat. 3.2 miles in Gold Butte Part A; 1.7 miles in Gold Butte Part B. Repaired and reinforced 440 ft of t-post fencing.

Gold Butte Byway: Constructed 0.25 miles of t-post fence to impede off-road motor vehicle traffic.

Khota Circus: With Boy Scouts, restored 1 mile of closed road, blocked illegal ATV access through a wash, and modified a post and cable fence, to protect cultural resources and tortoise habitat.

Sloan Canyon National Conservation Area: The largest BLM volunteer based restoration event was for National Public Lands Day in Sloan Canyon NCA. Restored 0.35 miles of illegal routes and planted 190 native plants in desert tortoise habitat.

Piute Valley ACEC: Restored 2 miles of illegal routes.

Gypsum Wash: EPMT controlled 11 gross infested acres of tamarisk per agreement with BLM.

Monitoring: All previous restoration sites are being monitored with an average of approximately 75% survival of native transplants.



Photos top to bottom: Before and after illegal road restoration (Gold Butte, BLM); Crew cleans up desert litter (Coyote Springs ACEC, BLM); Exotic Plant Management Team tamarisk treatment(Gold Butte, BLM)

BLM Restoration

Outside Desert Tortoise Critical Habitat:

Kodachrome Road: Restored illegal routes in rare plant habitat. Removed 25 cubic yards of trash. Restored 2 ponds for relict leopard frog habitat. Collected native seed. Watered and monitored previous restoration sites. EPMT surveyed and treated 334 gross infested acres of tamarisk.

Hiko Spring: Removed 419,353 Sahara mustard and 40 fountain grass plants. Treated 32 saltcedar.

South McCullough Wilderness Area: Decommissioned approximately .75 of a mile of illegal routes, with NCC crew. Removed large pieces of trash, an old metal watering tub and tires.

Eglington Preserve: Planted and maintained 164 Las Vegas buckwheat plants.

Hiko Spring: Planted 130 acacia plants.

Moapa: Planted 123 honey mesquite plants.

Bitter Spring: Planted 100 honey mesquite saplings and 30 willow poles. Removed old fence post and installed signs. Removed 2 large bags of garbage.

OHV restoration: Restored approximately 2 miles of illegal routes throughout the district.



Photos top to bottom: Before and after OHV damage restoration (Gold Butte, BLM); Crews work restoration area (Wee Thump Wilderness Area, BLM)

Lake Mead National Recreation Area (NPS):

Mead-Davis Powerline Road: Rehabilitated and restored 3.5 miles of abandoned road using soil decompaction, rock replacement, berm removal, raking, and vertical mulch.

Lower Bridge Canyon Barrier: Installed 40 feet of post and cable barrier to protect cultural resources and a spring from off-road vehicle traffic.

Sand Mine Road Track Rehab: Obliterated 5.35 miles of illegal tracks.

Sandy Cove: Conducted shoreline weed survey.

Lost City Area: Assessed resource damage from off-road vehicle use.

Northshore Road Area: Assessed resource damage from off-road vehicle use at MM 20.4.

Fortification Hill: Restored 5,678 feet of illegal road. Installed 106 feet of protective barrier.

Eldorado Canyon: Repaired 90 ft of protective barrier, removed 171 square ft of graffiti, and rehabilitated 176 ft of damage from vehicle tracks.

Exotic Plant Management Team (NPS):

Blue Point Spring: Monitored 377.5 acres of previously treated sites, and retreated 1.31 acres of tamarisk. Treated small populations of date and fan palms totaling less than 1 acre.

Burro Spring: Monitored 25 acres of previous treatment and revegetated areas and retreated 1 gross infested acre of tamarisk and fan palms.

Cottonwood Cove: Treated .03 acre (1,300 square feet) of tamarisk.

Grand Wash Bay: Monitored and surveyed 484 gross infested acres of athel tamarisk. Treated .5 acres and retreated 1.7 acres; treated Sahara mustard in a 1 acre area.

Northshore Road: Treated 9 gross infested acres of Sahara mustard.

Red Bluff Spring: Monitored, surveyed and treated 1.5 gross acres of tamarisk.

Fountain Grass Control: Treated a total of 1,734 plants on 258 gross infested acres along 24 miles of Lake Mojave's shoreline.

Callville Wash: Treated 26 gross infested acres of tamarisk; monitored and retreated 105 gross infested acres.

Cottonwood Cove: Treated 2 acres of Sahara mustard.

Grand Wash Bay: Surveyed and treated 109 acres of camelthorn and small area of Malta starthistle.

Lakeshore Road: Treated isolated tamarisk trees along roadside, less than 1 acre.

Las Vegas Wash: Surveyed and treated 75 acres of scattered tall whitetop, tree tobacco, tamarisk and fan palm. Conducted survey, monitored and treated 100 acre area, 1 mile of stream.

Mid Basin Cove: Treated 1.5 acres of tamarisk sprouts and a small patch of Sahara mustard.

Nellis Cove: Treated 1 acre of tamarisk sprouts and .5 acre of Sahara mustard.

Nine Mile Cove: Treated 1 acre of tamarisk sprouts and .5 acre of Sahara mustard.

Rogers Spring: Surveyed and treated 91 acres of Malta starthistle, date palms and tamarisk, hand pulled a small patch of Sahara mustard. Monitored and retreated 5 gross acres of tamarisk totaling .15 acres of cover.

Tamarisk Cove: Treated .5 acre of tamarisk sprouts and .1 acre of Sahara mustard.

Shoreline Athel Tamarisk: Treated athel tamarisk along Overton shoreline of Lake Mead, covering 1,350 gross acres, totaling 8.1 acres of tree cover; monitored 118 acres of previous treatments; inventoried 1,229 acres of potential athel habitat.

Russian Olive Control: Partnered with and assisted Pahrnagat Valley Cooperative Weed Management Area and NV



Photos top to bottom (Lake Mead NRA, NPS): Invasive plant species Russian knapweed; Invasive plant Sahara mustard; Invasive plant Athel tamarisk

Department of Wildlife to install and treat 16 Russian olive control plots at two sites to evaluate effectiveness of multiple control methods totaling 2 acres; treated an additional 5 acres of Russian olive at Crystal Springs (about 150 trees). Conducted a Russian olive control demonstration training to local landowners in the Pahrangat Valley.

Native Plant Materials (NPS):

Lake Mead Native Plant Nursery: Propagated about 43,000 plants from seeds of 31 native species, and maintained more than 500 salvaged plants, for restoration projects for all four agencies. Inventory is more than 20,000 plants of 72 species. Collected 20 lbs of seed from 31 native plant species for agency projects; provided 172 bags (638 lbs) of seed for Highway 93 restoration.

Seed Storage Facility (NPS): This project has been incorporated into a larger NPS facilities improvement project. Anticipated construction contract bid date was delayed to December 2011 for the seedbank facility; completion should be in summer 2012.

Project Research, Management Analysis and Studies

Interagency Restoration

Database (NPS): Protocols were developed by USGS, with review and input from SNRT members, for the inventory and assessment of habitat disturbances, documentation of restoration actions, and monitoring of treatment results. An

interagency restoration database is being constructed by GIS specialists at NPS based on those protocols. Once complete, it will be implemented and maintained by the agencies.

Sahara mustard project (NPS): USGS is researching best treatment protocols for control of this invasive weed. Gypsum habitat and soils restoration research are on-going. USGS has completed field data collection, data analysis is occurring and seed viability testing needs to be completed in the laboratory. Final results are pending.

Seed pelleting project (NPS): Develop a method of protecting seeds during restoration projects. Results of field studies are pending.

Tortoise PEP plants project (BLM): Identify and develop seed sources for native plants that contain high amounts of PEP, a nutrient beneficial to survival of desert tortoises. BLM completed 58 seed collections of 26 different native species. Historic locations for these species were scouted which resulted in the identification of 11 current populations. BLM also collected 500 plugs of big galleta grass from six different locations; the plugs were sent to the Tucson Plant Materials Center for our native plant materials project. A seed collection intern was hired for the summer. Initiated a Seed Transfer Zone study with USGS to understand how far we can move native plant materials across the Mojave desert and still maintain genetic integrity.



Photos top to bottom: Native plant nursery (Lake Mead NRA, NPS); Native plant seeds

Virgin River Interagency Weed Management Environmental Assessment (BLM): A term NRS position was hired in August to focus on moving forward the comprehensive environmental assessment for restoration and weed treatment on the Virgin River. Statement of work is done and preparing to go to contract for preparation of the EA.

plants nutritious to desert tortoises for future restoration in tortoise habitat.

Complete the interagency weed management environmental assessment for the Virgin River.

Participate in a new Cooperative Weed Management Area in southern Nevada.

Southern Nevada Restoration Team Staffing

Steering Committee: Core representatives from each agency serve as the SNRT Steering Committee. Some are partly or wholly funded by agency base funding rather than SNPLMA project funding.

Complete restoration/enhancement of southwestern willow flycatcher habitat, Pahranaagat NWR.

Complete restoration following construction of new visitor center and stream channel reconfiguration at Corn Creek, Desert NWR.

Agency Liaisons: Restoration liaison positions are maintained at each agency; some are temporary or term positions, and some are through agreement with Great Basin Institute.

Expand invasive weed control efforts and restoration of springs, streams and wetlands at Ash Meadows NWR.

Interagency Restoration Coordinator: A new coordinator was hired by FWS in November 2010; new employee orientation and other administrative training were provided. Other training completed includes Restoration Ecology, Advanced GPS Applications for Natural Resources, and Grant Writing for Conservation. USFS is currently providing office space for the coordinator.

Implement restoration following construction of recreational facilities on the Spring Mountains NRA.

Plan and implement restoration as part of a forest health project on the Spring Mountains NRA.

Projects Planned or in Progress

Implement the interagency restoration database at all four agencies and begin coordination and data sharing.

Inventory, assess, and implement restoration of 90+ miles of illegal motorized routes on the Spring Mountains NRA.

Finalize studies on treatment protocols for invasive species Sahara mustard.

Continue collecting seed for restoration projects and for potential post-wildfire seeding, performing weed surveys and treatments, fence maintenance, and working with tribal nations using Native American techniques to restore areas on the Spring Mountains NRA.

Finalize studies on seed pelleting techniques for restoration.

Complete construction and stocking of seedbank storage facility at the NPS native plant nursery.

Complete development of preferred varieties and seed sources for native



Needs and Opportunities

New disturbances on public lands are likely to continue to occur. Common sources of disturbance include off-highway vehicle incursions, illegal dumping, wildland fires, and exotic species. Left untreated, such disturbances can lead to soil erosion, spread of invasive species, changes in vegetation composition, altered fire regimes, loss of sensitive species habitats, and failure of ecosystem functions. Regular surveys and assessments are needed to identify and evaluate disturbances and to prescribe and prioritize treatment actions. Early detection and rapid response to new disturbances can prevent the spread of weeds, and treatment of a small infestation is less costly and more likely to succeed.

Monitoring and maintenance of previously restored ecosystems is an important component of restoration. The goal of restoration is set the ecosystem on a trajectory to a healthy self-sustaining condition, but it may take years for that condition to be achieved. Follow-up is needed to determine if treatment was successful or if additional treatments or different techniques are needed. Otherwise, small problems can become big problems and more costly to fix later.

Climate change is bringing new challenges and increasing needs for restoration. Hotter and drier summers, colder winters, and

NEEDS & OPPORTUNITIES SUMMARY

New Disturbances:	Surveys, assessments, and early response
Restored Sites:	Monitoring and maintenance
Climate Change:	New models and techniques
Fragmentation:	Restore habitat connectivity
Tamarisk Beetle:	Restore defoliated sites
Desert Tortoise:	Refine restoration methods
Plant Propagation:	Nursery/seedbank support for restoration projects
Partnerships	Building on partnerships across boundaries and disciplines
Future Funding	Sustainability of operations

greater weather extremes are already changing the landscape by affecting the quality and availability of habitat for plants and animals. As conditions change, many species are expected to shift their geographic distributions and abundances. Connectivity of habitats is expected to be important to allow the range shifts to occur, allowing species to persist in a changing landscape. New habitat models and other planning tools are needed to help identify restoration needs and practices.

Habitat fragmentation on a landscape scale is a result of urban growth in southern Nevada. The watershed of the Las Vegas valley begins in the Spring Mountains and Las Vegas Range, and drains to Lake Mead. Urban development has interrupted the natural flow of water and cut off many of the corridors that serve as routes of expansion for populations of wildlife, plants and pollinators. Restoration includes treating disturbances but also restoring connectivity between habitats or ecosystems. Planning should consider sustainable ecosystems at all scales and changing conditions.

Tamarisk leaf beetle populations are progressively spreading along riparian areas through southern Nevada. This introduced biological control is effective in defoliating invasive tamarisk plants, but will not eradicate them entirely. Restoration is needed to complete the job and to replant native plant species before other weeds can invade. As tamarisk is removed, whether through biological, chemical, or mechanical means, restoring native riparian habitat is critical for the endangered southwestern willow flycatcher.

Desert tortoise habitat restoration is a major need. The Desert Tortoise Recovery Plan lists restoration as a major component but

lacks details. A recent NPS research report predicts climate change will have major impacts to tortoise habitat, and proposes actions to reduce these impacts. The study focuses on Lake Mead NRA but uses existing data and could be applied to other areas.

Native plant propagation faces challenges. The NPS Nursery Manager has completed her term, and nursery responsibilities were delegated to staff that still has other duties. Construction of the seed storage facility is still underway, but there is no funding to stock or manage it. The College of Southern Nevada had been maintaining salvaged plants and propagating native plants for SNRT, but their nursery has closed, and NPS nursery has limited capacity for additional stock at this time. Partnerships are needed with other nurseries to meet restoration plant needs.

Opportunities for partnerships include state agencies, Landscape Conservation Cooperatives (LCC), Mojave Desert Initiative (MDI), volunteer organizations (including SNAP Volunteer team), invasive weed groups, and agency fire programs. SNRT has the ability to work across agency boundaries, and our success has gained national recognition.

Future funding for restoration is being sought. Current SNPLMA funding for staff and projects expire in 2014, but some agencies will have been expended their funds before that time. Term employees are limited to a certain length of time regardless of funding. Additional funding sources are needed, including base budget funding, to continue planning, implementation and monitoring of restoration projects. Otherwise, the tremendous amount of institutional knowledge, skills and experience of many SNRT members may be lost, and restoration programs may be eliminated.

Southern Nevada Restoration Team Members 2011

Steering Committee:

Laurie Simons, FWS (Lead)
Lauren Brown, BLM
Alice Newton, NPS
Marisa Anderson, FS

Ex-Officio Steering Committee:

Curt Deuser, NPS/EPMT
Fred Edwards, BLM
Amy Sprunger, FWS
Susan Garlow, FWS

Amy Lavoie, FWS
Sharon McKelvey, FWS
Chivia Horton, FWS

Technical Committee:

Dara Scherpenisse, NPS
Carrie Norman, NPS
Janis Lee, NPS
Henry Weckesser, NPS
Jacob Stockton, NPS
Karen Maloof, NPS
Darrell Freeman, FWS
Lindsay Smythe, FWS
Christi Baldino, FWS

Christiana Manville, FWS
Darrick Weissenfluh, FWS
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