



The Oasis

Spring/Summer 2016

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Program Manager's Corner

From the Program Manager's Desk:

So Long, Farewell, It's Time to Say Goodbye...

This is my last Program Manager's Corner article. The MOJN I&M 2016 spring field season is coming to an end as the preparation for the summer sun and heat is ahead on the western horizon. With that, I turn eastward to join the hovering seabirds, sandy beaches, and kettle ponds of Cape Cod National Seashore as their Chief of Natural Resources and Science.

I feel incredibly lucky to have had the opportunity to work in such challenging yet beautiful and inspiring park lands, and with such fantastic friends. It has been my pleasure to serve as the Program Manager for MOJN I&M since 2010. I hope that during my time here I have been able to make a difference and have had a positive impact on the parks that I have fallen in love with. Working and playing in the deserts, dunes, oases, mountains, lakes, springs, and riparia of the MOJN parks has fortified my passion for the great outdoors and created new opportunities to grow. Most importantly, it has given me the education and experience I need to be a better leader.

I feel privileged to have worked with and learned from such knowledgeable, compassionate and talented Superintendents, Chiefs, Professionals, Technicians, Administrators, Rangers, and Specialists and would like to thank everyone for their assistance and confidence throughout my time at MOJN I&M. I have enjoyed being the boots in the field, the voice on the calls, a champion for the parks, and the leader of the MOJN I&M team. I am proud to have helped the network parks and Inventory and Monitoring Division accomplish all it has over the past six years.

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Acting Program Manager: Geoff Moret, MOJN Hydrologist, has accepted a 90-day detail as MOJN Program Manager while Nita's replacement is hired. See [page 2](#) of this newsletter for his contact information.

PROGRAM MANAGER'S CORNER CONTINUED

Although I won't list every single success I'm incredibly proud of, some of the larger achievements of the MOJN team include:

- Recruiting an outstanding Team comprised of NPS employees and partners from near and far (including two student hires, more than 15 interns and three international volunteers) to inventory and monitor water, vegetation, and soils in deserts of the Mojave and Great Basin.
- Publishing five protocols, with our final water monitoring protocol submitted for review in April and an Invasive Species Early Detection Plan currently being written.
- Establishing monitoring sites for generations of natural resource professionals to visit in this century and beyond.
- Assisting parks with a variety of efforts from volunteering for park clean-ups, site restorations, special events and the Centennial BioBlitz extravaganzas, to supporting the development of the Invasive Plant Guide, and assisting parks with documenting and reporting efforts such as Natural Resource Strategies, State of the Parks Reports, and Natural Resource Roll Outs.

Many thanks to the Inventory & Monitoring Division for their leadership and support, my fellow Network Program Managers for examples, listening ears and much laughter, and the overall encouragement and guidance provided by the Pacific West Region Program Managers past, Penny Latham and present, Lisa Garrett.

And then there is the MOJN I&M staff who are the true champions that have made this Network shine. Words can't fully describe my gratitude to my wonderful work family. The MOJN I&M Team has given me support above and beyond and laughter through even the most uncomfortable moments. You have taught me the value of a fantastic dedicated Team and the joy of wonderful friends. Thanks for the great memories. I will miss you all.

The National Park Service is a big family in a very small world, so I am sure that we will continue to share our careers and lives. 'Till then, adieu.

Best wishes and please know every one of you have a place to stay at the beach. I'll leave the light on. . .

With gratitude,

Nita Tallent

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Nita Tallent, MOJN I&M Program Manager, says goodbye to the west and its desert sand dunes (left, Kelso Dunes MOJA) to head eastward towards the coastal sand dunes of Cape Cod National Seashore (right, Dune Valley CACO).

Desert Springs Monitoring

First Field Season Ends in Success

The Mojave Desert Network just finished a successful first field season implementing the Desert Springs Protocol. MOJN, LAKE, and Great Basin Institute field crews hiked to 100 springs in MOJA, 43 springs in LAKE, and 10 springs in PARA to collect data on a variety of natural resource characteristics at these springs.

Compared to the surrounding landscape, desert springs are hotspots of plant and animal diversity, and several of them support endangered species. Desert springs are also crucial sources of water in the summer heat for wildlife, like bighorn sheep. By monitoring these springs, MOJN is collecting data that will allow park natural resource managers to make sure these springs stay healthy and take action to protect them, if necessary.

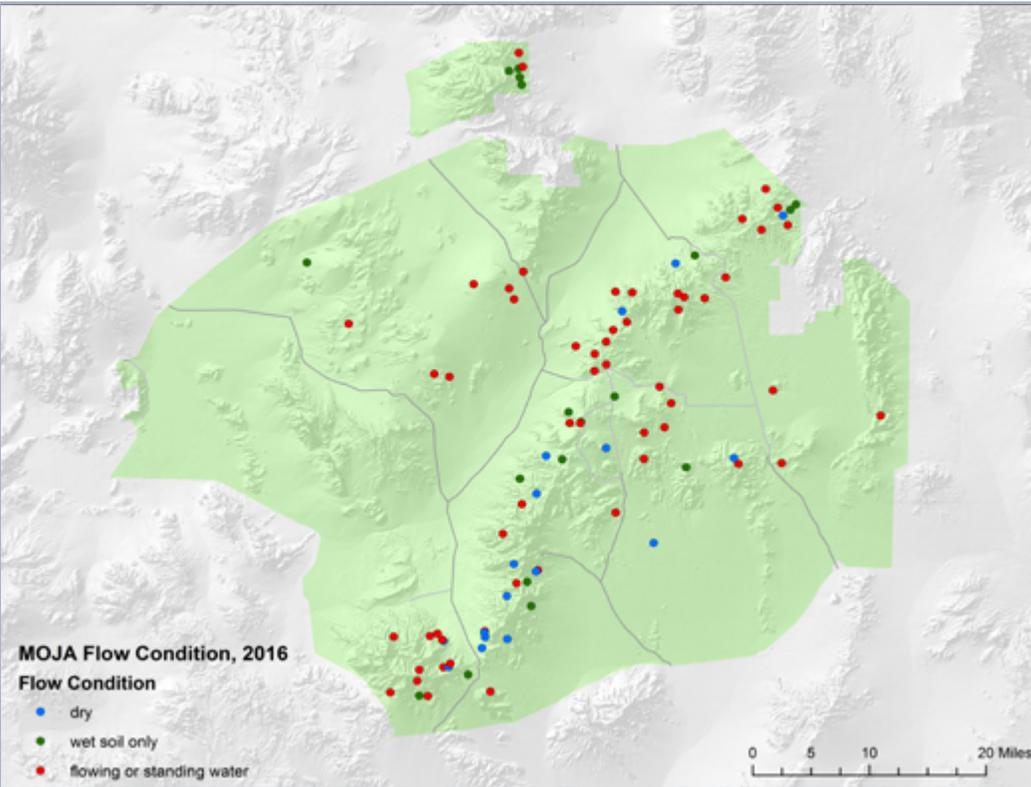
Desert springs face several threats. For example, tamarisk is an invasive plant that harms sensitive spring environments by sucking up all the water through its roots and leaving springs dry and native plants and animals without water. If tamarisk is found early enough, however, it can be controlled or eradicated. 21 of the 153 springs visited this field season had tamarisk, found mostly as a few young plants. With this information, exotic plant management crews can remove the tamarisk before it becomes an overwhelming infestation.

Climate change also poses a risk to desert springs. Many springs become seasonally dry during the hot summer months, but warmer conditions throughout the year may cause springs to be dry for longer periods of time. Springs that once flowed all year long may also begin running dry during the summer. This means less water would be available for local wildlife and migrating birds when they needed it most. At a number of springs in each park, field crews deployed small sensors that record whether or not water is present at the surface. About the size of a quarter, these sensors collect data every day, so MOJN can know what is happening at a spring even when field crews are not there to make observations.

After several years of collecting data, MOJN can look for trends or changes in water availability. With this information, park biologists can track shifts in wildlife habitat and decide if vulnerable animals need additional protection.

In addition to monitoring water availability and invasive plants as part of this protocol, MOJN also monitors water quality, vegetation, evidence of wildlife, and natural and human disturbance at each spring. If you want to learn more about Desert Springs monitoring or our other monitoring efforts, [click here](#).

- Jennifer Bailard, MOJN Hydrologic Technician



Above: Map showing which springs had water available and which springs were dry at time of visit, MOJA. A total of 487 springs in DEVA, JOTR, LAKE, MOJA, and PARA are monitored using the Desert Springs protocol. Some of these springs (60 of them) are visited every year and some are visited every three years on a rotating basis, to ensure there is continuous data being collected over both short and longer-term time frames. This allows park managers to adapt management actions to changing conditions rapidly in order to protect spring health.



Above: MOJN Field Logistics Lead pointing to a sensor deployed at the source of water in Lower Spring, PARA. These sensors measure percent humidity on an hourly basis. If the sensor is submerged in water, the sensor will log 100% humidity for that hour. If the sensor is not submerged, it will log a percentage much lower than 100%, closer to the percent humidity of the air at that time. This percentage gives us information about whether the spring is dry, damp, or has standing water available for wildlife.



Right: A close-up view of a sensor, deployed at the source of water in Coyote Spring, PARA.

GeoScientist In The Parks Program

New experiences in the Mojave Desert



Michael Steiner, former GeoScientist in the Parks Program intern, talks about his experience working for MOJN I&M and within the Mojave Desert Network parks, and how the internship opened the door to a full-time temporary position as a Hydrologic Technician for the Network.

Before applying to the GeoCorps America Geoscientist in the Park program, I had never heard of the National Park Service Inventory and Monitoring Program (I&M). These programs are designed to monitor park vital signs and inventory natural resources within a network of parks.

During my internship, I visited six parks including Lake Mead National Recreation Area where the MOJN office is located. Throughout my five months as a GIP intern, I learned a lot about how the National Park Service operates and what MOJN's role is with the parks and within the region. This gave me a good look at what a potential career in the National Park Service would be like.

Since MOJN works within eight unique parks that each have differing resources and sizes, a day in the field is different depending on the needs of the park. Typically, water monitoring efforts involve hiking to a remote source of water and using a variety of instruments to measure water quality, as well as collecting data on water quantity and availability (Fig. 1). Whenever data is collected the water quality equipment needs to be calibrated to ensure the best quality data. Other field work included replacing a broken weir at Blue Point Spring (LAKE) which required diverting a spring that produced 300+ gallons/minute by building a dam out of a tarp, some sandbags, and PVC pipe (Figs. 2 & 3). This proved to be more of a challenge than expected because the strong flow of the spring slowly seeped through the dam and risked destroying our newly installed weir. For eight hours we took turns using a hand pump to remove water and keep the area dry. In the end it all paid off when the weir was in place and the spring was back to flowing like normal.

During my time at MOJN, I contributed to a handful of other projects, but the majority of my time was spent analyzing historic data for streams located at Great Basin National Park in order to



Above: Figure 1. Measuring reference benchmarks on a measuring rod ruler relative to the water surface of MC Spring, MOJA.



Above: Figure 2. Using a hand pump to keep the newly installed weir dry while cement dries at Blue Point Spring, LAKE.

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Celebrating the Centennial: MOJN BioBlitz Events

Discovering & Documenting Biodiversity in the MOJN Parks

The Mojave Desert Network parks have kicked off the National Park Service's 100th birthday celebration with a bang! The MOJN I&M made sure to get in on the action by volunteering and attending both the Lake Mead and Death Valley BioBlitz events. Joshua Tree and Great Basin also recently held their BioBlitz events. Check out the photos below to learn more about these events and MOJN I&M's involvement in them.

An NPS BioBlitz is an event where scientists, naturalists, park staff, students, and park visitors all come together in an effort to record as many species within a designated area of the park as possible in a set amount of time.

Using [iNaturalist](#), anyone can participate in the inventorying of park biological resources!

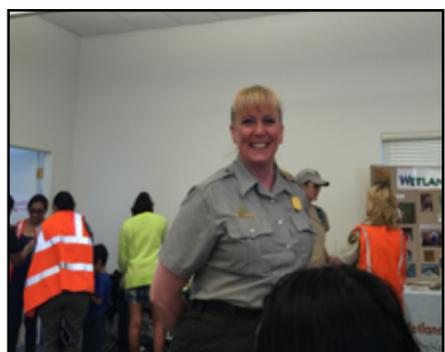
These observations help park managers learn more about resources found in their parks, generate student interest in natural resource management and the sciences, and are a great excuse to get out and enjoy the beauty and wonder in parks that the NPS preserves for both this and future generations.



Nita Tallent serves as MC for the presentation tent as Drew Kaiser, MOJA Vegetation Technician, prepares to teach visitors about local plants at the DEVA BioBlitz at Salt Creek March 12



Alex Whalen assists a group of volunteer citizen scientists as part of LAKE's BioBlitz at Pyramid Canyon March 19



Barb Nelson mans the BioBlitz Dance table to teach participants the moves at the LAKE BioBlitz at Boulder Beach



Janel Brackin provides visitors with information about non-native plants at Boulder Beach



Photo op! Some of the MOJN I&M staff pose with Mojave Max at the DEVA BioBlitz

Data from the MOJN BioBlitzes such as observations made, species identified, most observed species, and even observations of iconic & endangered species can be found at the following links: [Death Valley](#), [Great Basin](#), [Joshua Tree](#), and [Lake Mead](#).

What is the Mojave Desert Inventory & Monitoring Network?

(click on [hyperlinks](#) to learn more)

Mojave Desert Network Inventory and Monitoring (I&M) Program is one of 32 networks of parks established under the National Park Service I&M Division to implement long-term ecological monitoring across multiple park units that share relatively similar ecological attributes. Data collected through this program will help inform park resource management decisions.

DEVA: [Death Valley National Park](#)

CAMO: [Castle Mountains National Monument](#)

GRBA: [Great Basin National Park](#)

JOTR: [Joshua Tree National Park](#)

LAKE: [Lake Mead National Recreation Area](#)

MANZ: [Manzanar National Historic Site](#)

MOJA: [Mojave National Preserve](#)

PARA: [Grand Canyon-Parashant National Monument](#)

TUSK: [Tule Springs Fossil Beds National Monument](#)

bring the discharge records up to date. I accomplished this by using monthly measurements from the last five years to develop a rating curve. This meant learning to use software specialized for processing discharge records. Initially, the software had a steep learning curve. I spent hours reading through the user manual and working through examples so that I was able to face any challenge when using real data. While this task was long and tedious, it proved very useful when processing the historic data. This data will eventually be used in a report for the National Park Service Natural Resource Data Series.

This opportunity influenced my view of working for the National Park Service. When I visit parks, I always think about the people who carry heavy equipment up miles of mountain terrain so that hikers have a better path, a nice place to sit, or information about what they are looking at. I know that my work may not directly improve visitor experience, but it is nice to know that

what I did will help the park make decisions that could lead to how people enjoy the park.

This experience has helped give me practical working experience both in the field and an office environment. As a recent graduate, it can be difficult to qualify for positions that require experience outside of school. Working as a GIP allowed me to apply what I had learned in school as well as develop skills that I can put on a resume.

During my time as a Hydrology Assistant an opening became available at the MOJN office for a Hydrologic Technician. I applied and was offered a position that started directly following the completion of my GIP internship. I don't think I would have been as successful getting hired so quickly if I did not have the experience gained through my GIP internship. I am very excited to continue working for the National Park Service and hope this is the start of a long career.

-Michael Steiner, MOJN Hydrologic Technician



Above: Enjoying fieldwork with Hydro Techs J. Bailard and R. Fletcher, and Field Logistics Lead A. Whalen.



Above: Figure 3. Assisting MOJN Hydrologist Geoff Moret with the installation of a new weir at Blue Point Spring, LAKE.

The National Park Service, Geologic Resources Division (GRD) created the Geoscientist-in-the-Parks Program and began placing geoscientists in parks in 1996. The program responds to requests by park and central office staff for short-term assistance with geologic and other natural resource science projects. Participants in the GIP Program enable the National Park Service to complete important natural resource projects that would not be feasible without their help. GIP positions are advertised through a partnership with The Geological Society of America (GSA) and Environmental Stewards (ES).

To learn more about opportunities available through the GIP Program and how you can apply for an internship, visit the [GIP Program website](#).

The Mojave Desert Inventory & Monitoring Network now has a Facebook Page!



[Click here to check out our Facebook Page](#)

We are pleased to announce that our Facebook page is now up and running!

Please “Like” and “Share” our page, and be sure to check back regularly for data and information about our monitoring efforts, as well as field season updates and photos of the stunning scenery and amazing resources found within the MOJN parks.

We will also be using Facebook as an opportunity to share status updates, photos, and information posted on the MOJN Park Facebook pages.

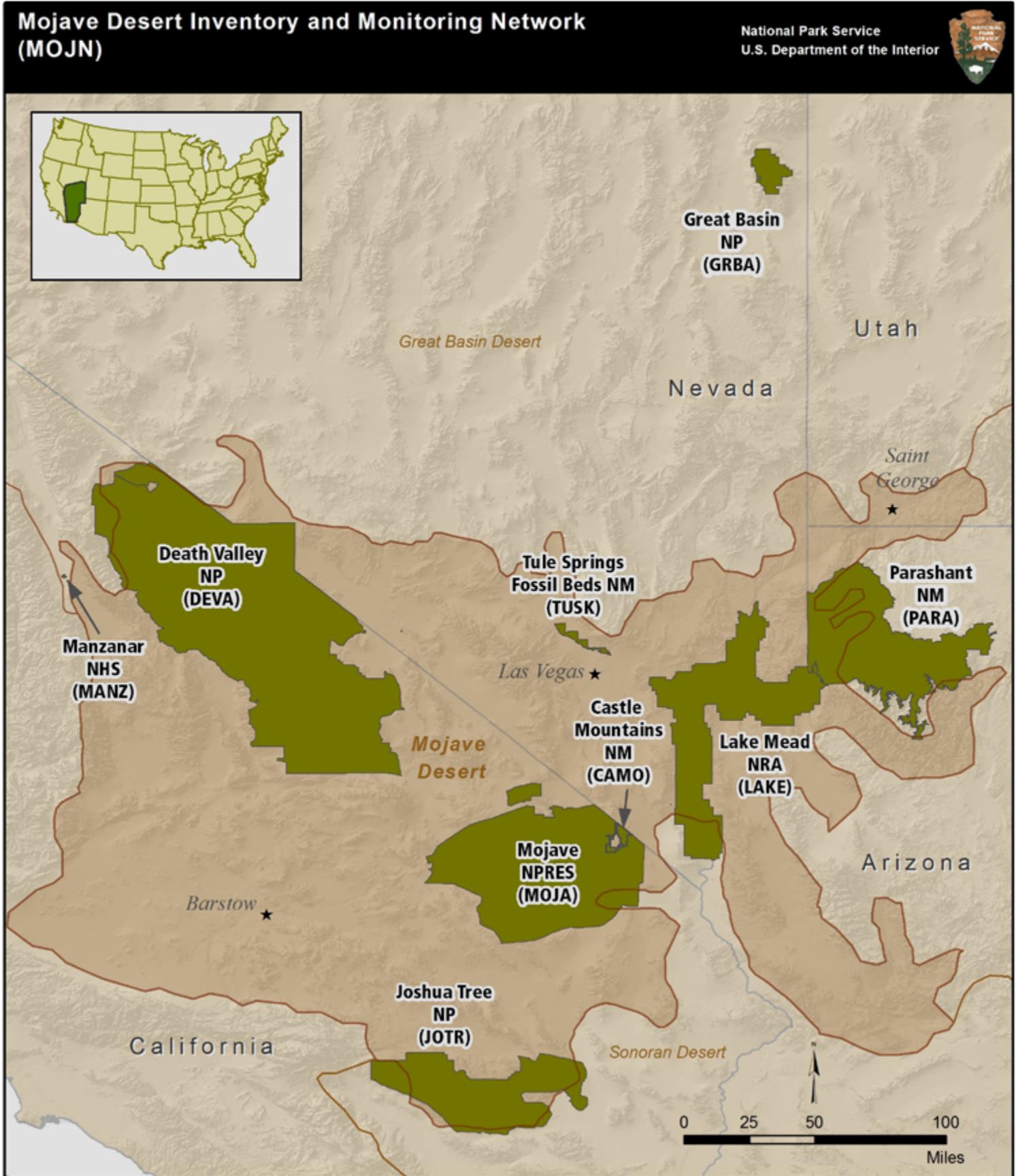


Fall 2016 Field Activity Schedule

	June	July	Aug	Sept	Oct	Nov	Dec
Integrated Uplands Vegetation monitoring	GRBA (site recon)		PARA (site recon)				
Streams & Lakes monitoring	GRBA						
Desert Springs monitoring					Desert Springs Monitoring Parks TBD		
Selected Large Springs quarterly monitoring	JOTR LAKE MOJA			JOTR LAKE MOJA			JOTR LAKE MOJA
Weather station installation		DEVA Date TBD					

Updated Network Park Map

With the designation of Castle Mountains National Monument this past February, we have yet another new park to add to the Network map! Map courtesy of MOJN I&M GIS Specialist, David Gundlach.



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