

Past Performance - Mach 8 Biological Consulting, Inc.

Construction / Restoration

Project: **New Melones Weed Abatement Services, Bureau of Reclamation**

Location: Tuolumne and Calaveras Counties

Completed: May 2018 – May 2023 (on-going)

Contract #: 140R2018C0007

Work Description: Provide weed abatement along the roadsides, parking lots and islands as well as provide pest abatement around the restrooms and outbuildings in various locations at the New Melones Lake Recreational Complex. This requirement calls for repeated mowing and spraying of herbicides on all thistle infested in fields adjacent to all recreation areas including day use and campgrounds next to parking lots, buildings and 200 miles of roadside. Also to provide a Best Management Plan to avoid environmental and habitat degradation. Which includes surveying for nesting bird surveys during the migratory bird season as well as design and implement a native Sonoran grass and wildflower reseeding plan.

Project: **Sugar Pine Reservoir Recreation Complex Hazard Tree Mitigation**

Location: National Forest Service, Tahoe National Forest

Completed: February 2018 – March 2018

Contract #: 129JGP18C0010

Work Description: Hand-fell, transport, and treat designated hazard trees from campgrounds and day-use areas within the Sugar Pine Reservoir Recreation Complex to identified disposal areas. Additional treatment requirements include: end-lining, skidding, transporting of included timber and slash to identified disposal sites, applying a borate compound to stumps, stump grinding designated stumps and restoring recreation sites.

Project: **Post Construction Reseeding and Hydro-mulch Application**

Location: National Park Service, Yosemite National Park

Completed: July 2018 - Present

Contract #: P17PC00603

Work Description: Hydraulically apply native seed, mulch, and fertilizer along highway. Work was performed under peak visitor use in the park. Weed inspections were completed for all equipment before entering the park. Pesticide application along public roads with traffic control. Spot spraying in remote areas.

Project: **Loading and Hauling of Base Rock and Fill**

Location: Yosemite National Park

Completed: September 2016

Contract #: P16PX02733

Work Description: Load and haul ~1000 cubic yards of road base and fill from the old Lower Pines campground to South Landing. Strict weed control protocols were maintained: all equipment was inspected by a park representative before entering the park.

Project: **Revegetation and Seeding Services Along Tioga Road**

Location: Yosemite National Park

Completed: November 2016

Contract #: P16PX0075

Work Description: Hydraulically apply native seed, mulch, and fertilizer along highway. Work was performed under peak visitor use in the park. Weed inspections were completed for all equipment before entering the park Traffic management was also implemented.

Desert Tortoise

Project: **AT&T Fiber Optic Cable Replacement Project
Halloran Summit Road to Slash X Regeneration Station**

Location: San Bernardino County, CA

Completed: July 2018 – Present

Permit #: 2081-2014-007-06

Work Description: Conducted pre-construction surveys and flag all desert tortoise burrows, and excavated burrows and moved desert tortoises if the project activities are likely to affect them. If a desert tortoise was moved, it was moved into appropriate habitat adjacent to the project site, but not more than 1,000 feet if it is an adult or 300 feet if it is a juvenile or hatchling.

Removed any desert tortoise that was threatened to a nearby location in accordance with protocol set forth by USFWS (USFWS 2009).

Est. Survey Hours 20
Est. Monitoring Hours: 40
Individuals Observed: 0
Dens Excavated: 2

Project: **SoCalGas L3000 Post ILI Segment Replacement**

Location: San Bernardino County, CA

Completed: April 2017 – July 2018

Work Description: Conducted pre-construction surveys, flagged all desert tortoise burrows, excavated burrows and moved desert tortoises if the project activities are likely to affect them. If a desert tortoise was moved, it was moved into appropriate

habitat adjacent to the project site, but not more than 1,000 feet if it is an adult or 300 feet if it is a juvenile or hatchling.

Removed any desert tortoise that was threatened to a nearby location in accordance with protocol set forth by USFWS (USFWS 2009).

Est. Survey Hours 50
Est. Monitoring Hours: 2,400
Individuals Observed: 8
Individuals Handled: 1
Dens Excavated: 4

Project: **MCAGCC Base Expansion and Desert Tortoise Translocation**

Location: San Bernardino County, CA

Completed: September 2013 – February 2017

Permit #: BO 8-8-11-F-65

Work Description: Translocated over 1,200 desert tortoises as part of a larger team of consultants. Translocation methods included transport by hand, vehicle, or helicopter as approved by USFW protocols identified in the Biological Opinion.

Assisted authorized biologists in conducting health assessments on desert tortoises found on and around MCAGCC training grounds. Health assessments included taking subcarapacial blood samples, visual assessment of symptoms of URTD, oral cavity examinations, re-hydration via nares, affixed/remove transmitters and morphometric measurements (weight, MCL...)

Supervised desert tortoise (DT) staff of 5-9 people while conducting clearance surveys.

Attached and removed radio transmitters on all adult and sub adult desert tortoises encountered. Juveniles too small to receive a transmitter were captured and transported to a head start facility until the large scale translocation.

Est. Survey Hours 2,400
Individuals Observed: 250+
Radio Transmitters Attached or removed: 45
Blood Sample (handler only): 29

Project: **Rice Solar Energy Project**

Location: San Bernardino County, CA

Completed: September 2013 – October 2013

Permit #: 08B0279-11F0276p

Work Description: Conducted pre-construction surveys, flagged all desert tortoise burrows, and excavated burrows.

Monitored construction equipment and activities during desert tortoise fence installation. Inspected fence on systematic intervals.

Est. Survey Hours 24
Est. Monitoring Hours: 80
Individuals Observed: 0
Individuals Handled: 0
Dens Excavated: 12
Project: **NV Energy's Southwest Intertie Project (SWIP) / ON-Line Project**

Location: Clark County, NV

Completed: February 2012 – May 2013

Permit #: 84320-2010-F-0391

Work Description: Supervised desert tortoise (DT) staff of 5-9 people while conducting presence / absence surveys. Excavated DT burrows and possible cover sites within the impact area. Relocated (no transmitters) all desert tortoises in immediate harm's way. Presented DT awareness trainings to construction crews. Monitored construction activities to ensure environmental compliance. Escorted vehicles with low visibility through tortoise habitat without exclusion fencing.

Conducted pre-construction surveys, flagged all desert tortoise burrows, excavated burrows and moved desert tortoises if the project activities are likely to affect them. If a desert tortoise was moved, it was moved into appropriate habitat adjacent to the project site, but not more than 1,000 feet if it is an adult or 300 feet if it is a juvenile or hatchling.

Removed any desert tortoise that was threatened to a nearby location in accordance with protocol set forth by USFWS (USFWS 2009).

Monthly reports submitted to CDFW.

Est. Survey Hours 160
Est. Monitoring Hours: 2,500+
Individuals Observed: 4
Individuals Handled: 0
Dens Excavated: 12

Project: **BrightSource Energy's Ivanpah Solar Electric Generating System**

Location: San Bernardino County, CA

Completed: October 2010 – December 2012

Permit #: 8-8-10-F-24

Work Description: Supervised DT staff of 5-9 people while conducting clearance and presence / absence surveys. Monitored construction equipment and activities.

Periodically inspected DT fencing.

Excavated DT burrows and possible cover sites. Dug artificial DT burrows in holding pens and inspected enclosure installation.

Radio Telemetry.

Est. Survey Hours 1,000
Est. Monitoring Hours: 1,000
Individuals Observed: 8
Individuals Handled: 0
Dens Excavated: 25

Project: **Silver State Solar Project**

Location: Clark County, NV

Completed: February 2011 – April 2011

Permit #: 84320-2010-F-0208

Work Description: Supervised DT staff of 5-9 people while conducting clearance surveys. Presented DT awareness trainings to construction crews. Monitored construction equipment and activities during DT fence installation. Inspected DT fence. Constructed temporary enclosure fencing around juvenile DT burrows. Excavated DT burrows and possible DT cover sites (ie. rodent and canid burrows). Located 1 juvenile DT (45 mm) and 2 adults (>100mm). Radio telemetry.

Est. Survey Hours 80
Est. Monitoring Hours: 100
Individuals Observed: 6
Individuals Handled: 3
Dens Excavated: 2

Project: **Translocation of Desert Tortoise From the Southern Expansion Area of Ft. Irwin to Occupied Habitat**

Location: San Bernardino County, CA

Completed: September 2008 – December 2010

Permit #: 1-8-05-F-43

Work Description: Conducted DT clearance surveys and interpret DT sign. Collected morphometric data and perform health assessments on wild, captive and research tortoises. Decommissioned DT enclosure fencing and restored the resulting impacts. Fixed radio transmitters and marked individual DT's with notches on their shell. Radio telemetry of over 200 DT's.

Worked as a part of a larger team including USGS personnel, translocated over 800 adult and juvenile desert tortoises from DOD property to identified translocation sites and monitored their status after translocation compared to resident and control animals for 5 years after translocation.

Est. Survey Hours 600

Individuals Observed: 70
Individuals Handled: 39

Project: **Addition of Maneuver Training Land at Ft. Irwin, CA**

Location: San Bernardino County, CA

Completed: August 2007 – September 2008

Permit #: 1-8-03-F-48

Work Description: Presented weekly DT awareness briefs to incoming soldiers and construction crews. Conducted pre-construction surveys, and monitored construction activities. Responded to “tortoise emergencies” (ie: DT in road on Ft. Irwin property). DT husbandry for over 70 wild juvenile desert tortoises – maintained individual pens, to prevent disease transmission, monthly health assessments and weighed/measured until their translocation the following spring.

Blunt-nosed Leopard Lizard (BNLL)

Project: **AERA EIR Compliance Support**

Location: Kern, Tulare County, CA

Completed: May 2016 – August 2016

Permit #: 8-8-11-F-65

Work Description: Completed section by section blunt-nosed leopard lizard according to accepted CDFW protocol, other rare wildlife species, and botanical surveys of all of Aera’s oil leases in Kern County. This was done in support of Aera’s compliance with the recently certified (December 2015) EIR for Revisions to the Kern County Zoning Ordinance focused on Oil and Gas Local Permitting

Survey Hours: 360

Individuals Observed: 8

Yosemite Toad / Mountain Yellow Legged Frog

Project: **Presence Absence Data Collection for Habitat Modeling**

Completed: Summers 2009 – 2014

Location: **Yosemite National Park**

Work Description: Collaborated with USGS researchers, UC students, and National Park biologists to develop and implement a study of yosemite toads (*Bufo canorus*) based on established research and protocol

Developed a random sampling frame to determine the species richness and abundance of aquatic invertebrates, reptiles, and amphibians as part of an effort to create a biological index for the Merced river drainage in Yosemite Valley

Trained incoming field personnel to familiarize them with the research protocol and methods in wilderness settings

Duties included creating maps for backcountry trips, organizing human resource paperwork, developing species identification keys, and downloading data at the end of each trip

Survey Protocol consisted of visual encounter surveys in remote high elevation lakes, meadows, and streams for yosemite toads, sierra nevada yellow legged frogs (*Rana sierrae*), as well as other reptiles, amphibians, and aquatic invertebrates.

Fieldwork required: extensive backpacking experience over rugged (often cross-country) terrain for 8-9 day tours carrying ~50 lb packs; ability to work in a small crew with limited human contact in remote environments under inclement weather conditions for prolonged periods; and aptitude to work in and around cold water

Designed a database using ArcMap and Access to manage data from previous and for future field seasons

Assisted National Park biologists with various projects by developing maps for presentations and reports

Organized the National Park wildlife division's scientific literature in an electronic citation manager (Endnote) to facilitate the preparation of major sections of park management plans and research

Collected demographic and habitat data using Trimble and Garmin GPS units for analysis with ArcMap and other GIS software

Coordinated the deployment, maintenance, use, and storage of field equipment to prolong its utility

Western Pond Turtle / Foothill Yellow-Legged Frog

Project: San Francisco Public Utilities Commission: Upper Tuolumne River Ecosystem Program

Location: Tuolumne County, CA

Work Description: Worked as part of a collaborative team to assess the historical / current river conditions downstream of the Hetch Hetchy Dam operations. Data collected included: visual encounter surveys for foothill yellow-legged frog; western pond turtle; and other reptile and amphibian species; point counts for migratory birds; and stream temperature monitoring. Data were used to develop flow recommendations and resource management priorities in the Upper Tuolumne River.

Nesting Bird Surveys and Western Burrowing Owl (BUOW)

Project(s): SoCal Gas; NV Energy; BrightSource Energy; Silver State Solar

Work Description: During the nesting bird season (March 1 to September 15), nesting bird surveys for raptors and all other birds covered under the MBTA were conducted within a

500 foot minimum avoidance buffer for raptors and a 300 foot minimum buffer for passerines birds within a minimum of three days prior to the start of work.

Breeding habitat/nest sites were fenced and/or flagged in all directions in a minimum 100 ft buffer until the nest was inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project(s).

Monitored work activities occurring near a burrowing owl winter buffer or any active nest buffer in order to monitor burrowing owl and/or nest behaviors that may be impacted by construction activities. Buffers may be enlarged or decreased in size, depending on the nesting behaviors observed.

Nesting Bird Surveys

Est. Survey Hours: 500+
Est. Monitoring Hours: 80
Nests Observed: 200

Burrowing Owl Surveys

Est. Survey Hours: 500+
Est. Monitoring Hours: 0
Burrows Observed: 20 active, 80 non-active

Peregrine Falcon

Project:	Peregrine Falcon Prey Remains Collection
Location:	Butano and Big Basin Redwoods, California State Parks
Completed:	July 2018
Contract #:	A1868002
Work Description:	Climb or rappel into Peregrine Falcon nesting cliffs to collect prey remains at any nesting or pecking ledges to confirm if Peregrine Falcons are depredating Marbled Murrelet by identifying any feathers, beaks, bills, feet, or any other remains indicative of Marbled Murrelet

American Badger / Desert Kit Fox

Project(s):	SoCal Gas; NV Energy; BrightSource Energy; Silver State Solar
Work Description:	American badger and desert kit fox dens inspections were conducted as part of the desert tortoise clearance survey, conducted within the project area and buffer within a maximum of 48 hours prior to ground-disturbing work directly ahead of construction. The following protocols were enforced: <ul style="list-style-type: none"> ▪ American badger and desert kit fox dens located outside the project area and within the survey buffer were flagged for avoidance. ▪ Unoccupied dens located in the project that couldn't be avoided, were excavated and backfilled by hand. ▪ Dens that appeared to be active were further investigated for activity using flour, stick gates, and/or motion cameras. <ul style="list-style-type: none"> o During the non-breeding season (July 2 to January 15) one-way doors were utilized to prevent activity and dens shall be hand excavated once documented to be unoccupied.

o A 500-foot no-disturbance buffer was maintained around all active dens during the breeding season (January 16 to July 1). The active den will be avoided until it is determined that the occupied den did not contain pups or until after the breeding season. Active dens and dens within the buffer of the clearance survey shall be marked so that the equipment operators can identify and avoid such dens. These locations shall be flagged prior to initiation of the maintenance/replacement activities in the area.

Dens Observed: 400 potential dens, excavated dens (~200 potential dens, 5 known dens,

Clean Water Permitting (SWPPP / Spills and public health)

Project(s): SoCal Gas; NV Energy; BrightSource Energy; Silver State Solar

Work Description: Enforced a Stormwater Pollution and Prevention Plan (SWPPP) that address controlling construction-related erosion and sedimentation.

Constructed and installed all BMPs outlined in the SWPPP to limit sediment movement. Flow dissipation and sediment control structures were also constructed in appropriate locations. Small weed-free hay bale dams were placed below slopes as temporary erosion control measures.

Ensured that fueling of equipment did not occur adjacent to or in drainages. “No-fueling zones” were designated on construction maps and a minimum of 50 feet (15 meters) from drainages

REFERENCES

Please contact Alex Mach for references at: amach8@gmail.com / (951) 640-8598