

Request For Drone Waiver
Mojave National Preserve
Date of Use: TBD

The undersigned party, in conjunction with the Peaceful Valley Donkey Rescue, Inc.'s Wild Burro Capture Program, respectfully submits the following information in accordance with NPS Policy Memorandum 14-05 for the use of Small Unmanned Aircraft Systems (sUAS) on public lands administered by the National Park Service pursuant to and in support of the General Management Plan(s) of Death Valley National Park and Mojave National Preserve approved in April 2002, the NPS is to adopt a "no burro or wild horse" strategy.

General Considerations:

Will the operation endanger public health and safety?

No, the operation of sUAS(s) under this request, will explicitly not be used over any non-participants. Operations can easily be stopped, delayed and relocated to eliminate any potential risk. Spotters and federally licensed, wireless GMRS communication devices will be utilized to ensure public safety.

Will the use of sUAS conflict with the Park's enabling legislation or for the purposes the Park was established?

No, the use of drones will enable the safe and effective removal of feral burros without undue hardship on the animals, the public or the park service and its resources.

Will the use of sUAS comply with NPS and other authorities regarding protection of natural, cultural or historic resources?

Yes, see detailed explanation attached.

Will the operation conflict with the visitor experience, interpretive programs, or concession or other park operations?

No, see detailed explanation attached.

Specific Considerations:

Is the sUAS the safest way to accomplish the mission?

Drones employed by the Peaceful Valley Donkey Rescue are less than 10 pounds including the battery. They have a full array of proximity sensors, low battery "return to home" feature and the ability to land themselves on open ground in case of emergency. The alternative is the use of manned, rotary helicopters, several individuals on horse back over unknown terrain or people on foot. Any combination has the potential for safety issues. Drones eliminate the need for all of these and can find the burros and identify any safety issues before sending in the capture teams. They can also monitor activity in real time while the capture operations are underway, ensuring that the wranglers, burros, general public and wildlife are kept safe.

Do the sUAS and Operator meet FAA and DOI operating requirements?

The FAA requires that a commercial sUAS Pilot in Charge must be at least 16 years, pass an aeronautical knowledge test every two years and pass a Transportation Safety Administration security screening. The FAA also requires that all sUAS operators must keep the aircraft in their line of site at all times, fly at or below 400' above ground level (AGL), fly during daylight or twilight hours only, fly below 100 miles per hour, do not fly over non-participants. The FAA allows for the use of a spotter, to keep the aircraft in site and an operational pilot under the direct command of the commercially licensed Pilot In Charge. The Department of Interior currently follows the FAA's guidelines for sUAS use.

PVDR has several types of drones that they use. All sUAS in their employ have safety lights, avoidance sensors and return to home features.

Is the sUAS capable of performing the mission objective?

PVDR's primary sUAS are the DJI Phantom 4+ Pro. These drones feature 4K quality video with built in First Person View flight monitors. They also have the ability to connect to external monitors so that other crew members can watch for, count and record burro locations leaving the pilot to concentrate on flying the aircraft system. Each flight, depending on weather conditions, will last 24 minutes before another battery needs to be installed.

Can the raw data be processed in a useful manner?

If flown above 100' AGL, wildlife is generally not bothered by the presence of drones, besides gathering the required data on the wild burros, the footage could also be used to determine the presence of other species as well.

Is the sUAS a cost effective and efficient tool for the purpose of the mission?

Manned, rotary aircraft typically cost between \$4,000-\$6,000 per day. As PVDR already owns the drones, they are used for many of the Rescue's operations and projects, the only expense is vehicle fuel and labor to bring the teams to the Preserve, this equates to literally a fraction of the cost.

Could the mission be executed without the use of a sUAS?

Wild Burro captures have taken place on public lands since the 1930's, various methods have been utilized that are still practiced today. Much time and resources have been wasted over the decades because a practical platform, such as a sUAS, was not available. Now, with the ability to quickly and efficiently find and track the burro's movement, the project will be completed much sooner, with little environmental impact and a great deal of cost savings.

Overview:

A. Purpose

The Wild Burro Project currently underway in both Death Valley National Park and the Mojave National Preserve by the Peaceful Valley Donkey Rescue, Inc. (PVDR), is a massive undertaking funded entirely through private donations. It is imperative, as well as ethically responsible, to use the most cost effective tools at our disposal.

In order to effectively locate, capture, process and remove the burros, resources must be in place to adapt to a changing capture environment that is easily affected by weather, public access, available forage and water resources. According to Peter G. Sanchez's "Impact of Feral Burros on the Death Valley Ecosystem" written for the National Park Service in 1974 (Sanchez '47) wild burros in desert terrain graze areas within a five mile radius of available water. Therefore a single water source (both natural and man-made) generates a potential grazing area of nearly 80 square miles.

To effectively gather the Mojave NP Burros, PVDR must first 1) Locate the burros and document their patterns and 2) mobilize resources and direct them to the appropriate locations. To this end, PVDR requests permission to use Small Unmanned Aircraft Systems (sUAS) or Drones on the Mojave National Preserve.

B. Designated Locations, Dates and Times of Use

In order to eliminate any conflict with the general public visiting the Preserve, unexpected vehicle traffic patterns on the Preserve, weather limitations or other unforeseen circumstances, we would request that the entire Preserve be opened for our use during the month of October 2018. Notice, along with each days flight plan with exact coordinates to be flown would be given, 48 hours in advance, to the NPS Representative/Liaison on each area to be aerial surveyed. This would provide the most flexibility, while having the least impact on other entities, native species and the general public.

All drone usage would begin no earlier than 30 minutes before official sunrise and no later then 30 minutes after official sunset, as per FAA Part 107 requirements. We would typically fly during the morning

and later afternoon hours when the burro are most active. USGS Map grids would be used as search areas in all requests. Each search area sUAS Team could include a visual aircraft spotter, a sUAS Pilot, monitoring personnel viewing live video images received from the drone to record burro locations and numbers and a commercially licensed Pilot in Command.

Given the required access, the entire aerial survey of the Preserve could be completed in the Month of October, 2018. Prior to the commencement of this survey, interviews would be conducted with locals, frequent preserve visitors, preserve employees and any other persons of knowledge to determine the areas most frequented by the wild burros in order to limit the areas needed to investigate.

C. Compliance with Department of Interior and National Park Service sUAS Policies

Small Unmanned Aircraft Systems are more focused and less disruptive than their larger manned counterparts, especially when used in areas where there are sensitive animal species (DOI UAS Strategy 2015-2020). The only other practical means of determining the whereabouts and patterns of wild burros would be by a manned rotary winged aircraft (helicopter).

The cost of using sUAS in place of manned helicopters is fractional. The daily rate for a manned helicopter on a 30 day project, as indicated in this request, would be \$4,000 per day or \$124,000 for the month of October 2018. Drones can perform this same job for less than 10% of this cost and cover more area each day with the use of additional Remote Pilots in Command.

D. No Interference with Visitor's Experience, Interpretive Programs, Concessions or Other Park Operations

Wild Burros, with few exceptions, seldom ever frequent places with heavy human use. Burros typically inhabit areas well removed from areas that would be "normal experiences" for the general public enjoying the National Park System. All FAA Licensed Commercial Pilots are prohibited from flying over "non-participant" populations. This rule will be followed.

E. Procedures for Data Management and Processing

The Drones will be recording High Definition Video (4K 30fps) during their entire flight. This data will be reviewed by on-site personnel to record burro numbers and location. Copies of the videos will be made available to NPS personnel upon request. No other data will be gathered during these flights.

F. Protection of Park Resources, Values and Visitor Enjoyment

As stated, drones are the least invasive means to complete this survey. No park resources will be used or imposed upon, areas with heavy tourist use can be excluded and ultimately the wild burros will be removed bringing the Mojave Preserve into compliance with the "No Horse or Burro Policy".

G. Compliance

The following laws and regulations were reviewed and this request is in full compliance with the following.

The Wilderness Act, 1964

Endangered Species Act, 1973

National Historic Preservation Act, 1966

Marine Mammal Protection Act, not applicable

Park Service Resource Protection Act, 2002

H. Potential for Controversy

Wild Burro Capture Programs have been misunderstood by the general public since their inception in the late 1930's. Education is a key component to moving opinion from the negative to the positive. Wild Burros have a negative impact of certain desert eco-systems and their removal is fundamental to preserving our natural heritage. There are thousands of wild burros outside of the Park System that remain free. Some are managed by the Bureau of Land Management but an even greater number exist on Indian Reservations, State Administered lands and unfenced private properties.

Drone usage, even if observed by the general public, would have no negative impacts on the reputations of the National Park Service, the Peaceful Valley Donkey Rescue or any livestock contractors used in the project. The opposite would actually be the case, the general public, according to social media and internet searches, does not approve of the use of manned helicopters for the removal of wild burros.

I. Environmental Impact Studies

Throughout the existence of the Park System and especially the Mojave National Preserve, wild burros have been found to have a negative impact on the local eco-systems and native wildlife. EIS, for this region, regarding burros, date back to the Environmental Assessment of the East Mojave National Scenic Area dated 1987.

J. Contacts

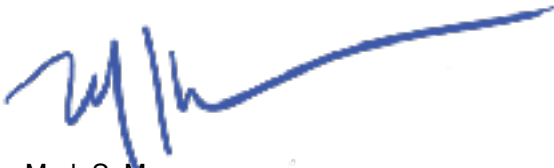
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K. References

The following Documents were studied and referenced for the preparation of this waiver.
Policy Memorandum 14-05
Wilderness Act 1964
Endangered Species Act 1973
National Historic Preservation Act 1966
DOI Unmanned Aircraft Systems Integration Strategy 2015-2020
DOI Operational Procedures Memorandum (OPM)-11
Management of Park Resources (Mojave Preserve)
Impact of Feral Burros on the Death Valley Ecosystem, Sanchez 1974
NPS Reference Manual 60 Aviation Management 2016
Interagency Aviation Training A3-11 Project Aviation Plans and Unit Aviation Planning 2015
USDA Unmanned Aircraft System Desk Guide 2016
Small Unmanned Aircraft Systems FAA Part 107 2016

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