REQUEST FOR STATEMENT OF INTEREST

EXPERIMENTAL MANIPULATION OF ARTIFICIAL WATER DEVELOPMENTS IN MOJAVE NATIONAL PRESERVE

Background

Mojave National Preserve bounds a significant portion of the Eastern Mojave Desert ecoregion (Bailey, 1995) and encompasses probably the most significant habitat for mule deer (*Odocoileus hemionus*) in the California deserts. Six big game guzzlers (wildlife water catchments) were constructed in the area around the mid-20th century that now support an important population of desert bighorn sheep (*Ovis canadensis nelsonii*). Also 133 small game guzzlers (gallinaceous bird guzzlers) are scattered around the Preserve. Surveys in 2002 and 2003 located approximately 100 natural seeps, many of which have been historically diverted to livestock troughs. California Department of Fish and Game approached the National Park Service in 2004 with a proposal to convert 12 former livestock wells to guzzlers, primarily for mule deer. These wells were abandoned from 2001 to 2003 following retirement of grazing allotments.

Water developments have benefited some wildlife populations in desert regions but there have been few studies examining the ecological effects of wildlife water developments (Rosenstock et al. 1999). Much of the information regarding response of game species is anecdotal, derived from research designed to address other issues, or compromised by various study design weaknesses. Mojave National Preserve is seeking researchers interested in designing and conducting long-term studies involving experimental manipulation of artificial water developments. Proposals involving both manipulation of water availability at existing sites – or where water historically has been available – and construction of new water sources where water was previously lacking will be considered. Research topics may address:

1. effects of water developments on populations and habitat use of game and non-games species,
2. effects of water developments on mammalian predator populations,
3. water quality at developed versus natural sites,
4. secondary effects on other biota such as plant communities,
5. the role of water developments in transmission of diseases (Rosenstock et al. 1999),

or experiments designed to test hypotheses proposed by the investigators.

Statements of interest should include hypotheses to be tested, a brief description of proposed study designs, qualifications of principal investigators, an estimate of approximate costs, and study time frame.

Review and Funding

Statements will be reviewed by an interagency panel drawn from National Park Service (NPS) and state wildlife agency staffs. Scientists selected by this review panel will be asked to

develop full proposals and submit detailed study plans. Selected parties must be willing to work with NPS to obtain funding. Some funding will be available to initiate work this fiscal year, depending on the requirements of the selected research proposal.

Contacts

Submit statements of interest to:

Superintendent
Water Development Research
Mojave National Preserve
2701 Barstow Road
Barstow, CA 92311
760-252-6101

no later than May 31, 2006.

For questions contact:

Larry Whalon, Chief of Resources, 760-252-6140, *Larry_Whalon@nps.gov* or
Debra Hughson, Science Advisor, 760-252-6105, Debra_Hughson@nps.gov

Additional selection criteria

Research proposals should recognize NPS management policies and general management plan guidance on the use of artificial water developments for wildlife management purposes. NPS management policies provide for natural processes to maintain native plants and animals whenever possible. These policies proscribe management actions that artificially inflate wildlife populations. NPS Management Policies are posted at:
http://data2.itc.nps.gov/npspolicy/index.cfm.

Guidance regarding wildlife guzzlers and ranching developments may be found on pages 69-70 of the Preserve's general management plan (2001), posted on the web at www.nps.gov/moja. Proposals that incorporate springs, seeps, and existing developed water sources in the research design will be ranked favorably compared with proposals that focus exclusively on new water developments. Information regarding springs, seeps, and existing developed water sources may be obtained by contacting the Preserve.

References

Bailey, R. G. 1995. Description of the Ecoregions of the United States, U.S. Department of Agriculture Forest Service, Ft. Collins, Colorado.

Rosenstock, S.S., W.B. Ballard, and J.C. Devos, Jr. 1999. Viewpoint: Benefits and impacts of wildlife water developments, J. Range Mangement 52:302-311.