

Great Basin To Test Electronic “Ear Ring” As Cattle Control

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The enabling legislation that created Great Basin NP identified livestock grazing as an appropriate historic use and its continuation was specifically enacted "subject to constraints imposed by the Secretary to ensure proper rangeland management practices."

The environs of Great Basin NP, as well as of many other areas of the intermountain west, have been considerably altered by expansive livestock production which began in the early 1900s (Young et al. 1978). Contributing factors of fire suppression and perhaps climate change have interacted with grazing to cause an increase in upland woody plant cover. This has reduced upland forage productivity, forcing cattle to concentrate in limited and highly sensitive riparian areas.

At Great Basin NP, riparian habitats extend over an approximate 1320 m elevational gradient from 1850 m to 3170 m (Murray and Smith 1990). Although riparian

habitats comprise only a small proportion of the total park area, they are the nucleus of the greatest diversity and highest productivity. These areas provide a direct physical and biological link between different community types (Brown 1982), as well as providing food, water, and breeding site resources for resident and migratory wildlife. Livestock grazing, and particularly intensive, protracted use, can have an adverse effect on riparian vegetation structure and function, soil stability, and water quality. Controlling livestock use in these critical areas is a priority management need.

Section 319(h) of the Clean Water Act provides 60 percent matching funding to qualified State sponsored projects. These grants are awarded to projects specifically focused on developing new technologies leading to best management practices for non-point source water pollution problems. Great Basin NP, in cooperation with the USFS Pacific Northwest Research Station, Oregon State University, the Texas Agricultural Extension Service, and Baker Ranches, Inc., has secured \$251,000 in project support through a Section

319(h) funding proposal to develop and test management alternatives to fencing, for controlling livestock use in sensitive riparian areas.

The technology involves using an electrical stimulus from specially designed ear tags to achieve animal avoidance of designated exclusion areas. The basic concept is that an animal can be controlled by electrical stimulation to the ear as the animal enters the zone of influence of a signal from a remote, battery powered transmitter installed in the area of desired exclusion. Funding for this project will support the development of prototype electronic ear tags and transmitters, controlled experiments on effectiveness, and field trials in Texas and Great Basin NP.

We anticipate that the results of this project will point the way for accelerated development and distribution of a new "best management practice" for controlling livestock movement on rangelands and pasturelands, resulting in improved riparian management and water quality. If successful, this technology will have application not only to the 27 NPS areas that currently authorize livestock grazing, but also to other NPS situations unrelated to livestock management.

The project is scheduled for completion in September 1992.

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