

Options for Managing Park Natural History Collecting and Collections: Case Study—Death Valley National Park, Collecting and Permits

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Death Valley National Park is a large desert wilderness park in eastern California and south-east Nevada. It receives about 50 research permit applications annually, over half of which are for geology studies involving the collection of rock or soil specimens. The environmental specialist is the collateral-duty research permits coordinator responsible for review and processing of the research proposals and applications.

Prospective investigators apply on-line through the Research Permits and Reporting System (RPRS; on-line at <http://science.nature.nps.gov/research>) program of the National Park Service (NPS) and usually include their research proposals as an attached file. The RPRS program notifies the park research coordinator via email when a new application is entered into the system.

The objectives in administering the park's research permit program are to protect park resources for future generations and to promote the use of the park for research purposes. Death Valley's enabling legislation includes congressional direction to "retain and enhance opportunities for scientific research in undisturbed ecosystems" (California Desert Protection Act of 1994).

Research proposals are put to several tests during their review. The first is for scientific rigor. Most applications are from academic researchers from recognized universities with National Science Foundation or university grants, so additional peer review for scientific quality is usually not needed. The park does not require investigations to be applied towards park management needs such as those identified in park planning documents.

Another test is institutional affiliation. By regulation, collection permits may be issued only to an official representative of a reputable scientific or educational institution or a state or federal agency (36 Code of Federal Regulations 2.5). Some applications are received from people who lack institutional affiliation. These applications are denied

unless a park staff member feels strongly about supporting the particular researcher and research project and signs on the researcher as a park volunteer. Park volunteers have institutional affiliation with the park itself and work under a staff supervisor and a written position description. Field technicians collecting for multiple researchers and multiple studies cannot be accommodated on one permit. Each study, under a qualified researcher, must be permitted separately.

One applicant identified himself as a professor and corresponded on college letterhead but had actually been fired from his teaching position. His former college did not support this affiliation for his research project and his department was unaware he was using letterhead or posing as a professor. His application was rejected due to lack of institutional affiliation.

The applications and research proposals are circulated to park staff and sometimes to other subject-matter experts. The park archaeologist reviews all applications involving ground disturbance (including the removal of soil samples or rock samples). The park wilderness coordinator reviews all applications in wilderness areas of the park (95% of the 3.4 million-acre park). Other park staff specialists are often involved in the review (e.g., wildlife biologist, botanist, curator, mining engineer, hydrologist, landscape architect, internet technology specialist, GIS specialist, etc.). Their review comments and recommended or required mitigation measures are relayed to the park's research coordinator,

who usually calls or e-mails the principal investigator to discuss the project and any park issues. If the investigator agrees to the recommended changes and conditions, then the permit is issued. Sometimes these negotiations continue for several rounds and several weeks.

Most research permits are approved easily and at the lowest level of environmental compliance: a categorical exclusion (CE). The CE for "non-destructive data collection" is usually used. There has been some debate about the use of this CE for research involving collecting, especially that of non-renewable geologic specimens that is by its very nature destructive of park resources. However, if placed in context, such collecting is deemed to be insignificant. Geologic collecting typically involves a few dozen rocks or soil samples from common formations. Collecting requests are typically rejected for vertebrate fossils, macro-invertebrate fossils such as trilobites, uncommon crystal formations, uncommon strata, or strata of limited extent. The burden is on the researcher to demonstrate that the sample type he or she is requesting is common, and that the permanent removal of the specimen would not impair the research opportunities of future generations of investigators.

One Swiss geologist on his third year of a research project was cited by a park ranger for collecting specimens well over the permitted weight limit. The ranger confiscated two boxes of overweight specimens and later discovered that some of the rocks were not part of the research study but were valuable crystal formations apparently taken for personal collection or rock show sale. The investigator was fined for violation of permit conditions and his permit was cancelled. The park does not expect to issue another permit for this investigator.

For all research collecting permits the park curator assigns a park accession number to the study. The accession number is entered near the top of the permit. The accession file initially includes the research proposal, application, and a copy of the permit. The investigator's annual reports and publication records

are added to the accession file even prior to specimen records. Often it takes several years of tracking a study before all the specimen records are finally sent to the park's curator. Projects are tracked by keeping the permits active while waiting for the specimen information.

During park review of a proposal, the purpose of the study is rarely challenged, but the methods of the study often receive scrutiny and changes are suggested. Researchers are encouraged (or required) to use the existing study collection at the park or at other institutions before collecting new specimens. Researchers are encouraged to contact other investigators conducting similar or related work in the park. Often the park research permit coordinator serves as a liaison introducing investigators to one another. Often the researcher is asked to reduce the number, size, and type of specimens collected; for example, paleomagnetic coring is not allowed.

The default situation is for specimens to be returned to the park's study collection, but often researchers ask to keep the specimens in a non-NPS repository such as their home university. The park strives to use repositories where the specimens would be most useful to science. The researchers are usually the subject-matter experts who help the park to determine where to keep the specimens. The curators of the non-NPS repositories must accept an NPS loan agreement because the NPS retains permanent ownership of the specimens. The non-NPS repositories must be available to the public. Death Valley has had some problems with what appear to be private collections. The non-NPS repositories, above all, must be able to care for the specimens and their associated data. The park also has had some problems with smaller local museums requesting the specimens but not being able to curate the collections.

Many prospective researchers resent NPS collection policies. They feel it impedes their work. Ideally the scientific research gives added value to the park. It should be to both the park's and the National Park Service's advantage to host the research and accept the impacts of collecting. Death Valley, unlike

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most parks, issues lots of multi-year research permits. This has been at the request of the researchers and is one of the few things we could do to reduce their aggravation. Rarely have we had to cancel an approved multi-year project because investigators' annual reports were not received or for some other problem.

The park conducts little or no monitoring of researchers' field activities. Park resources are protected by the permit conditions and the good faith of the researchers in following them. The park requires notification prior to each trip in order to track researchers' activi-

ties, inform interpretive and patrol rangers, and watch out for the safety of the researchers.

Decisions on whether to approve collecting permits are based on the value of the research to science, the value of the specimen to nature and the ecosystem if left in situ, the value of the project to the park, the quality of the associated data (publications, annual reports, labels, catalogue data), and the value of the properly curated specimens.

If parks are made available for science, then science will benefit the parks with knowledge for protection and interpretation.

