

**DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT**

**Lowell Observatory's Discovery Channel Telescope
Environmental Assessment**

**Mogollon Rim Ranger Districts
Coconino County, Arizona**

Introduction

An environmental assessment (EA) has been completed for the construction of an observatory that would house a 4-meter-class telescope. This decision also includes a water storage tank, road reconstruction and new construction, underground trenching for a power line, security fence, removal of existing outbuildings at the Happy Jack Ranger Station, and replacement of those facilities with new buildings.

The EA and the Project Record is available for review at the Blue Ridge Ranger Station, 60 miles south of Flagstaff, AZ on State Highway 87.

Decision and Rationale

Based upon my review of all alternatives as well as all comments received during the 30-day Notice and Comment period, I have decided to implement Alternative 2 as described in the Lowell Observatory's Discovery Channel Telescope Environmental Assessment. This action renders a decision on the application for a Special Use Permit submitted to the Forest Service by Lowell Observatory to construct and operate an observatory on National Forest System lands.

My rationale for choosing Alternative 2 is as follows:

Very few sites within the continental United States possess the characteristics that would justify the cost of building and operating a modern telescope. This site has demonstrated an extraordinary combination of astronomically related qualities, access to nearby existing infrastructure, and the ability to use previously disturbed land. The astronomical qualities include exceptionally clean unpolluted air, stable atmospheric conditions thousands of feet above the site, dark skies, and numerous clear nights. In addition, the proximity of a paved road, electrical power, and the opportunity to share facilities at the Happy Jack Ranger Station reduces the cost of development and disturbance of new land. The area also has minimal resource issues relative to heritage resources and wildlife issues.

A Biological Assessment was completed resulting in a determination of 'may affect, but is not likely to adversely affect, the Mexican Spotted Owl or its Critical habitat and the Bald Eagle.

A Biological Assessment and Evaluation was completed resulting in 'no effect' for Coconino National Forest Sensitive species, with the exception of Eared trogon, Flagstaff beardtongue, Mt. Dellenbaugh sandwort, Navajo Mountain Mexican vole, Northern goshawk, and Rusby's milkvetch. This project 'may

impact these individuals, but is not likely to result in a trend toward federal listing or loss of viability'. The project will not affect habitat trend or population trends of management indicator species within Management Area 3. There will be no potential disturbance effect from noise and human activity to Cordilleran Flycatcher. There is potential disturbance for migratory birds such as olive-sided flycatcher, and Purple Martin.

Archaeological surveys were completed and no sites are present. The buildings at the Happy Jack Ranger Station were also evaluated and found not to be eligible for the National Register of Historic Places.

This project will also facilitate Lowell Observatory's need to pursue the study of astronomy, to conduct research and to bring the results of this research to the general public through education and outreach programs.

This observatory has a wide ranging benefit to the public at large, both nationally and globally. Results of the research will expand the public's awareness and understanding of the universe in which they live and may have an affect on quality of life in ways we could not imagine.

During the 30-day Notice and Comment period, only supportive comments were received. There appears to be an over whelming local and non-local support for this project.

Description of the Selected Alternative (Alternative 2)

The action proposed by Coconino National Forest to meet the purpose and need consists of:

- Construction of an observatory that would house a 4-meter-class telescope.
- One 15,000-gallon water storage tank.
- One half mile of road reconstruction. Graveling the surface with native materials is initially planned.
- Approximately 500 feet of new road construction. Graveling the surface with native materials is initially planned.
- Approximately 1.0 mile of underground trenching for a powerline.
- Security fence installation around the observatory facilities. The fence would likely be 6 to 8-foot-high chain-link with a gate where you enter the facility.
- Removal of the existing workshop, cook house, wash-house, and barracks at the Happy Jack Ranger Station.
- The above buildings would be replaced with new construction of a shop (approximately 1500 square feet) and dormitory (approximately 2000 square feet), providing sleeping quarters for four persons, a kitchen, and a living area at the Happy Jack Ranger Station.

Mitigation

Mitigation actions required to implement Alternative 2 are outlined in the EA, Chapter 2 - Alternatives. Mitigation actions include protection of archaeological sites, if any new sites are found, minimizing invasive plant spread or introduction of weeds, implementation of Soil and Water Best Management Practices and minimizing visual quality impacts.

Monitoring

Monitoring required to implement Alternative 2 is outlined in EA, Chapter 2 – Alternatives. Monitoring activities will be included in Discovery Channel Telescope’s Site Plan and Construction Design. District Wildlife crew will monitor the site during construction and after for introductions of invasive weeds on an annual basis.

Public Involvement

The proposal was first listed in the Schedule of Proposed Actions in April 2004. The proposal was provided to the public and other agencies in a scoping letter requesting comment. The scoping period ended February 20, 2004. The scoping letter was sent to approximately 969 individuals and organizations. There were 108 comments received.

The Lowell Observatory’s Discovery Channel Telescope Draft Environmental Assessment was completed and made available for public comment for 30 days ending September 6, 2004. Fifty nine (59) comments received. All 59 comments were supportive of the Forest Services proposed action to construct the telescope and observatory.

Alternatives Considered

Alternative #1 (No Action):

This alternative serves as a baseline with which the proposed action is compared and is a requirement of NEPA [40CFR 1502.14 [d]].

Under this alternative, none of the proposed action elements would be implemented.

Alternatives Considered But Eliminated From Detailed Study

During development of the proposed action, other alternatives were considered but not carried forward for further study. These alternatives are discussed below along with reasons why they were dropped.

Site Location Alternatives

The objective was to find a site location farther away from the growing city of Flagstaff and at a higher elevation than Lowell Observatory’s current site on Anderson Mesa. Sites throughout the entire Colorado Plateau were considered based on both topography and location, feasibility of access and perceived long-term vulnerability to light pollution. No private site was identified which would make a suitable site for an astronomical observatory within a reasonable distance of Flagstaff. For this reason, Forest Service lands were considered the only viable option.

Image quality measurements were made at three of the more promising sites—Saddle Mountain (northwest of the San Francisco Mountain), Hutch Mountain (southeast of Mormon Lake), and the proposed Happy Jack site. These measurements showed that the Happy Jack site provided the best image quality of the potential three sites and was consistently superior to the Anderson Mesa site in this regard. The attractiveness of this location was further enhanced by the presence of a paved highway and

commercial power adjacent to the site. Because of this, the Saddle Mountain and Hutch Mountain sites were eliminated from further analysis.

Access Road Alternative

The alternate access road considered would have used an existing access road. This existing road makes a nearly direct ascent from the access gate at FH3 and ascends the northeast face of the hill. The current road is too steep for heavy equipment access (in excess of 15 degrees) and therefore the route would have to be modified by traversing the hill to reduce the maximum grade to 10%. This would result in the use of retaining walls and cut banks to provide a level road surface. The advantage of this road is that it is much shorter and could be paved within the budget for the observatory. However, it does have northern exposure, and there was concern that it could be adversely affected by snow and ice accumulation. In addition, as it traversed the face of the hill toward FH3, it would be more visible from FH3 than the chosen longer road. Because of these reasons this alternate access route was eliminated from further analysis.

Powerline Route Alternatives

Two alternate powerline routes were considered in consultation with Arizona Public Service (APS). Both routes would have come from the north to link up with an existing APS line crossing FH3. One of these routes would have followed FH3 for approximately 200 yards, turned southwest on an existing skid road, then headed southeast on an existing numbered Forest Road, and proceeded approximately 0.3 mile heading straight up the side of the telescope cinder cone to the summit. The second northern powerline route considered would have paralleled FH3 for most of its length before cutting up to the telescope site. These two alternate powerline routes were longer in length, would cause greater disturbance, and were subsequently more expensive than the proposed route. Because of this, these alternative routes were eliminated from further analysis.

Finding Of No Significant Impact

I have determined through an environmental assessment that Alternative 2 is not a major Federal action that would significantly affect the quality of the human environment, individually or cumulatively with other actions in the general vicinity. This determination is made considering significance in both context and intensity (40 CFR 1508.27).

Context

I have determined that Alternative 2 is a site-specific action that by itself does not have international, national, region-wide, or statewide importance. The discussion of the significance criteria that follows applies to the intended actions and is within the context of local importance in the area associated with the Mogollon Rim Ranger District.

Intensity

Beneficial and Adverse Impacts:

The physical and biological effects are confined to the immediate area of Happy Jack Knoll, the Happy Jack Ranger Station and the identified powerline route between the two sites.

Public Health and Safety:

Given the current and expected numbers of people who may be recreating and traveling in the area and the mitigation measures prescribed to reduce potential conflicts, there are no known or expected adverse effects on public health and safety.

Implementing Alternative 2 will not disproportionately impact any minority population in the immediate area or surrounding counties.

Unique Characteristics:

This project area is not in proximity to any unique historic sites, parklands, prime farm land, wetlands or ecologically critical areas.

Controversy:

The environmental effects to the human environment are documented in the environmental assessment and are typical for the action proposed. The effects are not controversial from a scientific or technical standpoint.

Uncertainty and Risk:

The actions also do not involve unique or unknown risks, nor are the environmental effects highly uncertain. The activities are typical of past activities on the Forest. To the best of my knowledge, the effects of activities are known and have been addressed.

Precedent:

Implementing Alternative 2 does not set a precedent for future actions that would have significant effects.

Cumulative Effects:

Cumulative effects are addressed in the EA. The analysis team evaluated the projects listed on the current Schedule of Proposed Actions (SOPA) for the Coconino National Forest for potential impacts of reasonably foreseeable action. There are no significant cumulative effects to the environment, or to the economy of the project, region or Nation, from implementing Alternative 2.

Significant Scientific, Cultural or Historical Resources:

Implementing Alternative 2 will not cause the loss or destruction of significant scientific, cultural or historical resources. An Archaeological Survey and Cultural Resources Clearance report is complete and available for review in the Project Record. A 'no effect' on cultural resources was determined for this project.

Threatened and Endangered Species or Critical Habitat:

Implementing Alternative 2 will have no significant effects on threatened, endangered, candidate or proposed species or Forest Service listed sensitive species, and is not likely to destroy or adversely modify proposed critical habitat of any species. A Biological Assessment and Evaluation has been complete for threatened, endangered, candidate species occurring within or adjacent to the project area and a Biological Assessment and Evaluation was completed on sensitive, management indicator species and migratory birds [#PR 50, 51 and 63].

Federal, State and Local Laws:

Implementing Alternative 2 does not threaten nor is it in violation of Federal, State or local laws, or requirements imposed for the protection of the environment.

Consistency

The actions planned under this decision are consistent with the management direction in the Coconino National Forest Land Management Plan 1987 (as amended), and with Forest Service direction and policy.

Implementation Date

This project can be implemented immediately after publication of the Decision Notice in the *Arizona Daily Sun*.

Appeal Procedures and Administrative Review Process

This decision is not subject to administrative review (appeal) pursuant to 36 CFR 215.12 (e)(1) when... 'No substantive comments expressing concerns or only supportive comments are received during the comment period for a proposed action analyzed and documented in an EA.'

Contact Person

For additional information concerning the decision or the Forest Service appeal process, contact Carol Holland, Planning Staff; Mogollon Rim Ranger District; HC31 Box 300; Happy Jack, AZ 86024 or by telephone at (928) 477-2255

/s/ **NORA B. RASURE**

October 9, 2004

Nora B. Rasure
Forest Supervisor

Date