



# POSITION DESCRIPTION

## Winter 2023

**NPS UNIT:** Yosemite National Park

**Position #:** 1264

**Position Title:** Geomorphology Assistant

**Number of positions available:** 1

**Primary natural resource discipline:** Physical Sciences

**Position Keywords:** Geology, hydrology, climate change, remote sensing, snow

**Location:** El Portal, California

**Can this position be fully remote:** Yes

### POSITION DESCRIPTION AND WORK PRODUCTS

**Project Description:** The SIP intern will assist park geologists and hydrologists with a funded project ("Tracking Climate Change Through Disappearing Snow") to document historical trends, present status, and future loss of permanent ice and snow fields in Yosemite's high country. Warming temperatures and multi-year droughts have severely diminished snow and ice fields in Yosemite in recent years, with some smaller ones already gone. These losses affect the adjacent physical environment, water supplies, and wildlife habitat in the park's alpine and subalpine zones.

This project will use a combination of remote sensing data (primarily aerial imagery but also lidar and other data sources) and field work to quantify changes in the spatial extent of snow and ice in Yosemite over the past century. This information will allow for detecting historical trends and estimating when these resources will entirely disappear. Field work will also help to quantify the water content of these resources, which supports aquatic and riparian ecosystems downstream.

The work will primarily involve computer-based analyses of remote sensing data in the office, with some field work to calibrate remote analyses.

**Work Products:** Final deliverables will include field notes, photos, GIS-based maps and shapefiles, data tables, figures, and short reports, all of which may be incorporated into longer reports or publications. Many prior interns in Yosemite have been co-authors on peer-reviewed maps and publications.

### NATURAL & PHYSICAL WORK ENVIRONMENT

Yosemite National Park is famous for its soaring cliffs, spectacular waterfalls, deep glacial valleys, and rugged wilderness. Yosemite Valley includes such geologic landmarks as Half Dome, El Capitan, and Yosemite Falls, the tallest waterfall in North America. The elevation of the park ranges from 2,127 ft. in the western foothills to 13,114 ft. at the crest of the range. Yosemite National Park is in the center of the Sierra Nevada Mountains, which were formed during two phases of mountain building. The Yosemite landscape consists of primarily granitic rocks with sparse metamorphic roof pendants. Small glaciers and snowfields still cling to the highest peaks and feed clear rushing creeks and rivers. The 11,000 feet of altitudinal variation in the park supports a wide variety of life forms.

During the dates this position is open, much of the high country above 8,000 feet is under snow, but Yosemite Valley and the Merced River Canyon are generally snow-free for much of the winter. Most of the fieldwork will take place in these areas. The job may involve strenuous physical activity (steep hiking for several hours at altitude), and exposure to heights and to weather extremes. The participant will receive training in backcountry safety, travel, and navigation. Mariposa, the nearest community, has a large grocery store, hospital, public library, etc. Smaller versions of these facilities are also located in Yosemite Valley. Fresno (~90 miles away) is the nearest large (university) town with a full range of amenities, including Fresno-Yosemite International Airport. Yosemite National Park has almost unlimited hiking, snowshoeing, and backcountry skiing opportunities in the winter, and hosts a small ski resort at Badger Pass.

### QUALIFICATIONS



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The applicant must have completed at an undergraduate degree in the geosciences or earth sciences. Current or recent graduate students are strongly encouraged to apply. Previous geologic and/or hydrologic field skills, experience with data collection and analysis, and writing experience are highly desirable, as is coursework in geomorphology, hydrology, and/or remote sensing. The applicant should be able to work well independently both in the office and in the field, have basic map reading and GPS orientation skills, and must be comfortable hiking cross-country in a rugged mountain environment. Computer skills are essential, including working with ArcGIS. Prior experience working with remote sensing data such as aerial imagery, lidar and/or Structure-from-Motion photogrammetry data is a big plus.

The applicant must be a U.S. citizen or U.S. permanent legal resident (“green-card-holder”). Prior to starting this position, a government security background clearance will be required.

### VEHICLE AND DRIVER LICENSE REQUIREMENTS

Applicant must have a valid driver's license to drive a government vehicle.

A personal vehicle is recommended for this position.

If the SIP is required to drive a park vehicle for their position, Stewards will perform a driving records search, and the SIP's ability to drive a park vehicle during work hours will be contingent upon the results. SIPs will have to have had their license for 3 years or be over the age of 21 to be insured as drivers under Stewards insurance policy. Examples of things that will preclude a SIP from driving a park vehicle include: SIP under the age of 21 years old that has been licensed less than three years, DUIs, multiple moving vehicle violations, suspended or revoked license, or three or more accidents (regardless of fault) in the last 3 years. If the driver's search is favorable, Stewards will provide driver's liability insurance while the intern is driving a NPS vehicle for their SIP position. If the SIP is denied coverage by Stewards, they will not be permitted to drive during work hours.

### HOUSING

**Park housing is available and will be provided at no cost to the participant.** Park housing consists of a shared apartment (private room) in the town of El Portal, with kitchen and bathroom facilities and coin laundry. The SIP intern will need to bring bedding for a single bed and kitchen and bathroom supplies. Wifi is available at the apartment but will need to be set up with the phone company provider, or is available for free at the El Portal Community Hall.

### INTERNSHIP DATES

**Start Date:** 10/03/2022

**Number of Weeks:** 20

**Flexible Start Date:** Yes

### LIVING ALLOWANCE

20 Weeks (\$480.00/week = \$9600.00)

### RELOCATION ALLOWANCE

350.00

### AMERICORPS PROGRAM



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**AmeriCorps**

AmeriCorps is a program that engages individuals in intensive community service work with the goal of “helping others and meeting critical needs in the community”. The SIP Program is supported through AmeriCorps by providing a Segal Education Award in addition to the SIP’s living stipend and relocation allowance.

Upon successful completion of the SIP position, the SIPs (AmeriCorps members) are eligible for a \$1,638 - \$6,195 pre-tax education award that can be used for paying back student loans or for continuing their education. The amount of the education award is based on the length of the position.

AmeriCorps limits the number of terms an individual can serve to 4 terms. If an applicant has previously completed 4 SIP or other AmeriCorps positions, they will not be eligible to apply for an additional SIP position.

### Partners

This position is offered through the National Park Service's Scientists in Parks (SIP) Program in partnership with various organizations.

