

Monitoring the Olympic Marmot



Photo by J&S Pagacz

Olympic Marmot Monitoring Program

Olympic National Park recognizes marmots are an important iconic species. Almost all Olympic marmots reside in Olympic National Park so the park has a special responsibility to safeguard the species. Information about changes in the distribution and abundance of marmots will allow managers to evaluate the status of the population on an ongoing basis. If conditions warrant, management actions could be evaluated and undertaken before the situation became critical. Intensive studies with marked animals can provide a detailed snapshot of a few colonies but these studies are expensive and do not provide a picture of the marmot population throughout its range.

Occupancy surveys offer a relatively simple and inexpensive tool for monitoring marmots throughout their range. The idea is simple: Patches are visited once or several times a year and the presence or absence of the species is recorded. Changes in the population over time are deduced from changes in the percent of patches that are occupied. Occupancy is not expected to be static – local populations may disappear and vacant patches may be recolonized. However, if the population is stable, the proportion of patches that are occupied should remain roughly constant over time.

Like any approach, there are limitations to occupancy monitoring. One is that animals may not be detected even though they are present. Previous work has found that marmots, when present, are typically detected more than 90% of the time, but we need to confirm that this holds true

when volunteers are conducting the surveys. If detection rates are lower, statistical approaches can be used to adjust the results. Another limitation is that occupancy monitoring can only detect declines that result in patches becoming vacant. In some cases, local populations may become quite small before survey units become vacant. Finally, our survey can not sample all types of marmot habitat. Safety concerns and access difficulties prevent us from surveying the steepest and most remote terrain, thus, limiting our scope of inference. However, most areas known to be occupied by marmots, as well as some recently abandoned and some highly suitable but unoccupied areas are included. Thus, the surveys provide a reasonably representative picture of Olympic marmot distribution now and in the future.

Who Can Be a Marmot Monitor?

What Skills Are Required?

Volunteers must be capable of traveling and camping in remote areas, be comfortable navigating off-trail, and be able to work on steep slopes. Trips will typically include a 5-20 mile (1-2 day) hike with substantial elevation gain to the survey area. Travelling to the camp sites will not require any special skills beyond the ability to hike those distances with a full pack. Volunteers will usually work from a base camp, surveying areas up to 2-3 miles from that camp. Many of the survey units are not accessible by trail. Although park safety regulations prohibit us from sending volunteers onto terrain with a greater than 35 degree slope, there are some areas that will require considerable route-finding skills, bush-whacking, and bouldering. In the past, volunteers with moderate back-country experience and a strong “can-do” attitude have been highly successful.

If you are a strong hiker and able to work off-trail in difficult terrain but prefer day-hiking, you may volunteer to survey sites in the Hurricane Hill, Klahhane Ridge, and Obstruction Point area.

Group Size

For safety reasons, volunteers must travel and work in groups of at least two people. You must find your own partner. Up to 6 members of families or friends can travel and camp together, breaking into teams of 2 or 3 for the surveys. Children aged 13-17, accompanied by a responsible adult, can participate in the surveys. In fact, they make excellent volunteers! Younger children, if capable of hiking to the study areas, can remain in camp with a non-participatory adult.



This project was made possible in part by a grant from Washington's National Park Fund.

What to Expect as a Marmot Monitor

Prior to Your Work Session

Volunteers will sign up for one of four sessions, each to start on a Monday in August. Volunteers can work 5 days or 8 days. Volunteers for either of the first two sessions will be assigned their survey units by early June. Maps of survey units and other details can be provided to those volunteers at that time. Volunteers for the latter two sessions will be assigned tentative areas but will not receive final details until about 5 days prior to the start of their work period. This is because they will be surveying units that were not reached in the first two weeks or resurveying units where marmots were not detected in the initial surveys.

Before you arrive, we ask that you visit the Info for Volunteers section of this web site. There you will find the necessary paperwork as well as gear lists and other valuable information.

Transportation and Accommodations

Volunteers are responsible for their own transportation. Camping fees will be waived at Heart-of-the-Hills and other front-country campsites the night following the training session. All entrance and backcountry fees will be waived.

Training Day (9:30 – 5:30)

The first day of each work period will consist of indoor and field training on marmot ecology, recent Olympic marmot research, program goals, and field work specifics. This will include general instruction on using GPS units (pre-loaded with maps of the survey polygons), finding survey units, conducting the surveys, and filling out data sheets. We'll cover safety issues and use of a park radio. You will see many photographs of marmots in their habitat and of occupied and abandoned burrows. Then we'll go to actual occupied and abandoned marmot colonies. At the end of the day, additional GPS training will be offered for those who are unfamiliar with this important tool. Bring lunch, snacks, and field gear sufficient for a short day-hike.

Field Days

Field days will consist of hiking, surveying, or both depending on your destination. Where possible, you will camp in or very close to survey units. However, in some cases, day hikes of up to three miles will be necessary to access the survey units. When possible, you should survey before 11 am or after 4 pm. In rain and heavy fog, marmots stay in their burrows and volunteers can stay in their tents.

For safety reasons, you should survey in pairs. You will travel off-trail and will traverse steep ground with loose rocks. Volunteers will be given a GPS unit with the survey

units pre-loaded on it. Using the GPS, you will identify the boundaries of units then scan the area for marmots. If you don't see any, you will walk systematically back and forth across the area looking for burrows or marmots. After using the GPS to record the locations of burrows and marmots, then you will complete a data sheet for each survey unit.

If you do not find marmots in a unit, you may return later in the day or the following day to confirm that you did not miss them. However, it is more important to survey all your assigned units one time than to resurvey unoccupied units. During the last two sessions, volunteers will be scheduled to resurvey to those units where marmots were not found.

Post-survey

After completing the field work, you will return field gear and data sheets to Port Angeles or to a ranger station near your exit point. Park staff will review your data sheets for completeness and contact you if they have any questions. You will also be asked to fill out an evaluation form to help us improve communication, training and field protocols.



Weather

Summer conditions in the Olympic high-country are highly variable. July and August are generally dry but wind, rain, and freezing conditions occur. Plan for rain and for cold evenings. At high elevations, sunburn is a concern. Biting insects are troublesome in many areas.

Equipment

Volunteers must provide their own personal equipment. The provided list is only a guide. Ultimately, you are responsible for determining what gear you need for 4-7 days in the backcountry and for supplying that gear.

Marmot Sighting Disclaimer

We cannot guarantee that you will see marmots! Volunteers will survey places that are known to have had marmots recently, areas where marmots used to live but were not found in recent surveys, and a few places where marmots are not known to have ever lived but where the habitat appears suitable. To monitor the population over time, it is important that we survey previously occupied and never occupied (to our knowledge) locations so that we can detect colonizations as well as extinctions.