

Appendix M

Point Arena Mountain Beaver Protocol



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M. POINT ARENA MOUNTAIN BEAVER PROTOCOL

The following protocol was developed by USFWS and Kim Fitts¹ in October 2002. MRC has modified it to meet the needs of our HCP/NCCP.

On December 12, 1991, USFWS listed the Point Arena mountain beaver (PAMB) as endangered under the Endangered Species Act of 1973. The Recovery Plan for the Point Arena Mountain Beaver (USFWS 1998a) identified the need to conduct surveys to locate and protect new populations; moreover, it suggested that a presence-absence survey protocol should guide these efforts. The habitat assessments and surveys described in this document are not intended for research. Rather they are to be conducted prior to any project within the assessment area of Point Arena mountain beaver that might result in ground or vegetation disturbance. This survey assessment follows the current USFWS protocol for Point Arena mountain beaver (Hunter and Fitts 2005).

MRC will

1. Conduct an assessment to determine if potentially suitable habitat exists in a project area.
2. Conduct thorough surveys of these potential habitat areas for presence of Point Arena mountain beaver.

If only small pockets of potential habitat are located, MRC may conduct assessments and surveys simultaneously. Defining the “impact area” will depend on the type of the disturbance and the nature of the habitat-modification, both discussed in the conservation measures for Point Arena mountain beaver (C§10.3.3.3-1 through C§10.3.3.3-18). In most cases, assessment and surveys within 500 ft of proposed activities will be sufficient.

M.1 Habitat Assessments

While MRC can provide some generalizations about mountain beaver habitat, there is limited information based on quantitative descriptions of vegetation height, percent ground cover, species composition, and other variables. Burrow openings are often found in areas of lush herbaceous and woody vegetation. These areas are often, but not always, located on steep north-facing slopes or in gullies, where soils are well-drained and friable. Mountain beavers also are known to use areas around and beneath coarse woody material on the ground.

For habitat assessments, MRC will collect the following information:

- Date(s) of assessment.
- Time spent on-site in the field conducting the assessment.
- Name(s) and contact information for person(s) conducting assessment.
- A description of the project or activity for which the assessment was conducted.
- A map, at appropriate scale, showing: the footprint of the project area; locations of proposed activities; areas covered by the habitat assessment; areas not assessed; and reasons why areas were not assessed, e.g., lack of access to private land.
- A map, at appropriate scale, showing locations of potential suitable habitat.
- A general description of the vegetation in the potential habitat areas, including, if possible, photos with labels.
- Information, if available, on soils in the project and assessment area.

¹ Kim Fitts is the owner and wildlife biologist of Bioconsultant located at 122 Calistoga Road #360, Santa Rosa, CA 95409.

M.2 Surveys

M.2.1 Criteria for presence or absence

Once potentially suitable habitat areas are located, MRC will conduct surveys to determine whether mountain beavers are present or absent. Only areas with burrow openings are considered to have mountain beavers “present.” These areas can then be classified as either “active” or “inactive” (see M.2.5). MRC will consider a site “occupied,” if there are signs of mountain beaver activity or if signs of activity are inconclusive.

M.2.2 Timing of surveys

MRC may conduct surveys at any time of the year. Surveys, however, will not be conducted after heavy rains when soils are saturated; this will reduce the likelihood that burrows will collapse as a result of foot travel. Generally, we will not conduct surveys more than 8 weeks prior to operations to reduce the likelihood that mountain beavers move into a project area after a survey. In some situations, we may conduct surveys more than 8 weeks in advance of operations to allow sufficient time for environmental analysis. In these situations, we will re-survey these sites within 8 weeks of operations. During the mountain beaver dispersal season (April 15th to September 30th), we will not conduct surveys more than 4 weeks prior to operations and will re-survey if necessary. When mountain beaver are found or occupancy is assumed, re-surveying will not be necessary. If we do not locate mountain beavers within 500 ft of an operation’s impact area, these survey results will be valid for 2 years. If we do not locate mountain beavers within 250 ft of an operation’s impact area, these survey results will be valid for 1 year.

M.2.3 Survey method

The primary survey method consists of a set of transects that are approximately parallel to one another, where all areas are visually inspected for the presence of burrow openings or other signs of mountain beaver activity. The number of transects and the distance between transects is variable depending on the density of vegetation; however, all areas are visually inspected. The time of year is a factor; vegetation is generally denser in late spring and early summer and sparser in fall and early winter. In areas of very rugged topography or dense vegetation, the surveyor may need to actually crawl through vegetation. The use of a walking stick or similar object can be useful for parting or lifting vegetation to inspect for burrows. Areas not surveyed to this level are assumed to be occupied.

M.2.4 Diagnostic features

Burrow openings average 6 in. (15 cm) in diameter, and range from 4-11 in. (10-28 cm). Excavated soil or debris may not always be present. A diagnostic feature of mountain beaver burrows is that burrows remain approximately the same diameter, about as far as a surveyor’s arm can reach. Burrows also lie at a downward angle. Unsealed openings of the pocket gopher are considerably smaller and narrower, i.e., to the width of several fingers. California ground squirrels are typically observed during the daytime near their burrow openings. The presence of rabbit pellets in burrow entrances and excavated soil does not indicate absence of mountain beavers since rabbits (and other species) will share burrows. While less diagnostic, other indicators of mountain beaver presence include: runways through the vegetation; vegetation that has been clipped off; and exposed caches of vegetative material such as “haystacks.” The presence of old, dried, or “worked” vegetation can be evidence of burrow cleaning activity. This material can be either food waste or old nesting material. A large amount of this vegetation (an arm load) indicates that the burrow leads directly to the nest chamber.

M.2.5 Active and inactive burrows

If possible, MRC will note during surveys whether burrow openings are active or inactive. Indicators of activity include: a large mound of freshly dug loose soil at the burrow entrance; wilted vegetation in or near the burrow opening; an open and clean burrow entrance; and a wad of old dried vegetation in or near the burrow opening or inside of the burrow. Indicators of inactivity include debris in burrow openings and collapsing of burrow openings. Heavy spider webs may indicate inactivity, but caution should be used when applying this criterion because web building can be very rapid. Burrow systems also have multiple entrances, some of which are infrequently used. In addition, certain burrows may only be used seasonally for specific activities or when certain nearby plants are optimum as a food source. Use of mountain beaver burrows by rabbits and other species also confuses assessment of activity. As a result, a determination that burrow openings are “active” or “inactive” is somewhat subjective; it is difficult to make a reliable determination that all mountain beaver burrows are inactive and a site is unoccupied.

A primary consideration during surveys is to prevent crushing or collapsing a burrow and disturbing the vegetation. Surveyors should walk slowly and carefully, making note of foot placement. While counting burrow openings and determining if they are active provides good information on the site, such data should not be collected if it may result in collapsing burrows.

For surveys, MRC will collect the following information:

- Date(s) of survey.
- Time spent on-site conducting surveys.
- Name(s) and contact information for person(s) conducting surveys.
- Map, at appropriate scale, showing the areas of potentially suitable habitat.
- Description of survey intensity and method, e.g., “parallel transects at 5 m spacing” or “wandering surveys with >75% of ground surface observed.”
- Map, at appropriate scale, showing suitable habitat areas with mountain beaver presence or absence and any suitable habitat areas that were not adequately surveyed, along with the reasons for not surveying, e.g., access denied to private property, presence of poison oak, steep topography, impenetrable vegetation, etc.
- UTM coordinates for the center point of each area with presence.
- Map detailing spatial extent of each burrow system observed.
- Discussion or description of the habitat in areas with burrow openings present versus suitable areas without burrow openings present. Topics should include plant species present, vegetation height and percent ground cover, slope and aspect, and soil characteristics if known.
- Presence of other fossorial species.

MRC will report all positive survey results to the CDFG Natural Diversity Database (NDDDB). In addition, we will submit an annual report to the wildlife agencies with the results of all surveys and habitat assessments. In the annual compliance report, we will include survey results for Point Arena mountain beaver, along with a map. The map will show (a) the nearest known burrows to projects completed in that calendar year and (b) the closest distance of known burrows to any activities (proposed or not) within 1000 ft of the burrows.

M.3 Qualifications of surveyors

MRC will conduct a training program to ensure that our staff properly conducts habitat assessments and surveys. We will invite the wildlife agencies to attend these training sessions and

include in an annual report to the wildlife agencies the date of the training, an outline of topics covered, the names and backgrounds of individuals who attended, and length of training. The wildlife agencies may decide not to approve surveyors; in such cases, they will submit to MRC within 30-days of receiving the annual report their reasons for denying approval.