PRIORITY HABITATS AND SPECIES MANAGEMENT RECOMMENDATIONS:

MAZAMA POCKET GOPHER

The Washington Department of Fish and Wildlife (WDFW) is providing these management recommendations to inform local government permit reviewers, applicants, consultants, and landowners working on projects with potential impacts to Mazama pocket gopher, a state-listed threatened species. These recommendations are part of a series of Priority Habitats and Species (PHS) management recommendations issued by WDFW. These recommendations are not regulatory, but are based on best available science for avoiding, minimizing, and mitigating impacts to gophers and their habitat, which is primarily located in South Puget Sound. WDFW recommends the following mitigation sequence for reviewing and conditioning proposed development projects with potential impacts to Mazama pocket gophers:

1. **Avoid** direct impacts to occupied Mazama pocket gopher habitat.
    a. Determine the potential for gopher occupancy. A list of soil types known to be inhabited by Mazama pocket gopher in Mason, Pierce, Thurston, and Lewis Counties is attached (Attachment 1). A generalized map of these soil types in Thurston and Pierce Counties is posted online, along with these management recommendations, at http://www.wdfw.wa.gov/hab/phsrecs.htm. WDFW also maintains information on gopher locations based on survey and research information, which is updated frequently. Applicants can request current data on known locations of Mazama pocket gopher from WDFW's Priority Habitats and Species program (http://www.wdfw.wa.gov/hab/release.htm), or by calling 360-902-2543. WDFW also provides gopher location data directly to local jurisdictions.

    b. Because mapped gopher data is incomplete, WDFW recommends that the local permit authority require a **Mazama pocket gopher mound survey** for all projects proposed on sites with soils listed in Attachment 1. We recommend that a qualified professional who has received training from WDFW in Mazama pocket gopher survey protocols conduct the mound survey between the months of June and October. Surveys conducted outside that time period may not be accurate as to the presence of gophers, and applicants should be encouraged to plan ahead for their projects in order to complete a survey between June and October. A list of consultants who have received the training is available online at http://www.wdfw.wa.gov/hab/phsrecs.htm. Information on identifying gopher mounds, including differences from mole mounds, can be found at http://wdfw.wa.gov/living/gophers.html .

    c. If a survey shows occupied gopher habitat on a proposed project site, require the applicant to design/re-design the project to **avoid** impacts to the occupied area. WDFW defines occupied gopher habitat as active Mazama pocket gopher mounds found wholly or partially within the boundaries of the parcel(s) to be developed, buffered by a 10-m

radial buffer, with overlapping radii dissolved, and multiplied by a factor of three (3). This accounts for estimated burrow systems occupied by the pocket gopher and biological needs for dispersal.[1] (Consultants trained in the survey protocol are familiar with these mapping criteria.) See Attachment 2. All development should be located outside the gopher habitat area or areas. The permit authority may want to include active mounds located off site in areas that will be directly impacted by infrastructure improvements required by the development (e.g., right-of-way improvements).

d. If relocating the project completely outside of existing, occupied gopher habitat is *not* possible without impacting reasonable use of the property, go to Step 2- minimize impacts. A determination of reasonable use is at the discretion of the local permit authority, but it is assumed that legal definitions of reasonable use within the context of the property's zoning/land use designation will be followed. WDFW recommends that the full mitigation sequence described here, including a consideration of offsite mitigation opportunities, be employed before issuing a reasonable use exception.

e. If a survey has been completed for a site, a record of this survey should be maintained by the local permit authority, even if the development project does not move forward and even if no pocket gophers were found on the site. Requiring the survey to be recorded is the best way to notify future landowners that occupied gopher habitat has been found on their site. We recommend that a new survey be required if more than one year has passed between an initial survey and the issuance of preliminary plat approval or site plan approval. If mitigation is not implemented at the preliminary approval stage of the project, a new survey should be required when 5 or more years pass between preliminary approval and beginning of earth-moving work. Depending on available resources, WDFW staff may provide comment on the survey to the local jurisdiction and/or may be available to work with a consultant who is new to the survey protocol to fulfill survey requirements. WDFW will add the survey results to our mapped gopher data if the permit authority or consultant provides the results as a GIS shapefile or hard copy map, along with basic information including parcel number, surveyor and landowner name, date of survey, and number of mounds found (if any). By receiving this data, WDFW will be able to provide it to future landowners and jurisdictions planning or reviewing projects on the same or adjacent sites. Data should be submitted to WDFW Biological Data Management, Gretchen.Blatz@dfw.wa.gov.

[1] Methodology to determine gopher habitat is based on best available science, including peer-reviewed literature and the best professional judgment of WDFW species experts. The 10 m buffer distance was derived from data on home range. Witmer et al (1996) reported a mean home range of 108 sq m for males, 97 for females (ranged up to 151). This could be thought of as a 10X10 m square , or circle of 100 sq m size; in reality likely an irregular shape. Anderson and MacMahon (1981) also reported that in the similar Northern pocket gopher, adults typically made only small shifts (10-15 m) in the their home range over the course of the year. A multiplication factor accounts for species reproduction and dispersal needs and buffering from development impacts, and is WDFW's recommendation based on the best professional judgment of our species and habitat experts. See Attachment 4 for literature citations and other resources.

f. WDFW can assist landowners with projects that do not require local permits, but whose property is likely to contain Mazama pocket gopher habitat. The permit authority is encouraged to refer such landowners to WDFW for guidance and stewardship advice. Information on living with pocket gophers can also be found at http://wdfw.wa.gov/wlm/living/gophers.htm#mazama. Malicious harm to state threatened species is prohibited.[2]

2. If impacts to some active gopher mounds can't be avoided, **minimize** impacts to occupied Mazama pocket gopher habitat.
   a. Designate as a **set-aside** area includes the highest active gopher mound density, plus additional area(s) to make up for occupied habitat that will be destroyed by development. Large, contiguous patch(es) that maximize width to length ratio such that long, narrow corridors are avoided are most appropriate for the gopher set-aside. Multiple set-asides may be appropriate on some parcels. Corridors may be appropriate to maintain connectivity with adjacent sites that also have known gopher populations.

   b. The total set-aside area should include an area equivalent to the total occupied habitat area (as calculated above). Attachment 2 shows a set- aside area shaped to incorporate the concentrated population of gopher use onsite while also achieving the amount of buffer or protection area necessary to afford long-term benefits of habitat use. The set-aside area should include habitat suitable for gophers. Restoration may be needed to achieve suitable habitat. See subsection (f), below.

   c. Record the location of the set-aside area on the face of the plat, short plat, or site plan. The set-aside may be designated as a separate tract.

   d. Access to the set-aside should be restricted. Perimeter fencing should be installed if necessary to reduce human impacts and pet predation on gophers. Informational signage should be installed at the set-aside perimeter stating "Mazama pocket gopher habitat area: No entry" and explaining that the set-aside contains habitat sensitive to disturbance of a state-threatened species.

   e. A habitat management plan (HMP) detailing the location and long-term management of the set-aside area should be required as a condition of project approval, and recorded to run with the title. A recommended habitat management plan template is attached (Attachment 3). We request that the permit authority provide WDFW an opportunity to review the HMP by sending the Department a copy during the project review period (however, WDFW will not maintain HMP records and we may not have resources to provide timely comment on all submitted HMPs).

[2] RCW 77.15.130 defines the unlawful taking of protected fish or wildlife as when a person hunts, fishes, possesses or maliciously kills protected fish and wildlife, or maliciously destroys the eggs or nests of protected fish or wildlife, and the taking has not been authorized by rule of the commission; or the person violates any rule of the commission regarding the taking, harming, harassment, possession or transport of protected fish and wildlife. Unlawful taking of protected fish or wildlife is a misdemeanor. WAC 232-12-297 classifies state threatened and sensitive species as subcategories of protected wildlife.

f. The HMP should include invasive vegetation control and restoration. WDFW recommends removing all Scotch Broom (*Cytissus scoparius*) using above ground hand techniques (e.g. no significant movement of earth or large machinery). Twice annually, the habitat protection area should be mowed to control Scotch Broom and enhance herbaceous plant growth. (Information on Scotch Broom control may be found at http://www.southsoundprairies.org/scotchbroom.htm. Restoration of native plants should occur following invasive/Scotch Broom removal. A planting plan should incorporate herbaceous species and minimizes the number of trees proposed for planting in the tree tracts. Examples of beneficial herbaceous plants include legumes, broadleaf forbs, and grasses such as broadleaf lupine (*Lupinus latifolius*), clover (*Trifolium sp.*) nodding onion (*Allium cernuum*) common yarrow (*Achillea millefolium*), field chickweed (*Cerastium arvense*) showy fleabane (*Erigeron speciosus*) coast strawberry (*Fragaria chiloensis*) and blue wildrye (*Elymus glaucus*). Possible deciduous trees to plant include Oregon white oak (*Quercus garryana*), big leaf maple (*Acer macrophyllum*) or dogwood (*Cornus sp*).

g. Avoid using herbicides and pesticides in the set-aside area(s).

h. WDFW encourages the permit authority to require the applicant to submit annual compliance reports to the local jurisdiction for a period of three to five years after the HMP is approved. Such reports should provide basic information on how the conditions of the HMP are being implemented. WDFW recognizes that the ability to track compliance information is dependent on available local resources.

3. **Mitigate** unavoidable impacts to Mazama pocket gopher active mounds.
   a. Only if the avoidance or minimization of impacts through an onsite set-aside is not possible, as determined by the permit authority, then offsite mitigation *or* a combination of onsite and offsite mitigation may be used. A *combination* of onsite and offsite mitigation is preferred where there is the potential to retain some onsite set-aside, even if that set-aside is less than the amount recommended here.

   b. The offsite mitigation ratio should be calculated at the rate of three acres of suitable gopher habitat permanently protected for every one acre of occupied gopher habitat (as defined above) that is destroyed. Permanent protection may come in the form of a permanent conservation easement implemented by another property owner with gopher habitat. The offsite set-aside should be one contiguous patch in single ownership, and use of the site for permanent habitat mitigation should be an allowable use by the local land use permitting authority. The site should contain suitably drained prairie soils of a type and quality equivalent to the gopher habitat on the development site, and be free of impervious surfaces or structures within the set-aside area. WDFW biologists may be available to review off site proposals for suitability as gopher habitat.

   c. A habitat management plan as described in Step 2, above, should be implemented for the mitigation site. The HMP should also specify that the site is being used as off site

mitigation for another development site, and may not be used as mitigation for other development activities.

WDFW Key Contacts

Area Habitat Biologists
HMP review, general project assistance

Thurston County:	Tel. 360-902-2579	E-mail	Jason.Kunz@dfw.wa.gov
Pierce County:	Tel. 360-895-3965	E-mail	Gina.Piazza@dfw.wa.gov
Mason County:	Tel. 360-249-4628 x 249	E-mail	Gloria.Rogers@dfw.wa.gov
Lewis County:	Tel. 360-785-0472	E-mail	Scott.Brummer@dfw.wa.gov

District Wildlife Biologist
Consultant training for surveys
Tel. 253-813-8906 E-mail Michelle.Tirhi@dfw.wa.gov

PHS Data
For applicant data requests
Tel. 360-902-2543 Web http://www.wdfw.wa.gov/hab/release.htm

Biological Data Management
To submit gopher survey results
Tel. 360-902-2484 E-mail Gretchen.Blatz@dfw.wa.gov

Attachments

1. Soils list
2. Mazama pocket set-aside example
3. Habitat Management Plan template
4. Resource list

Attachment 1

Soil types where Mazama pocket gophers are most commonly found

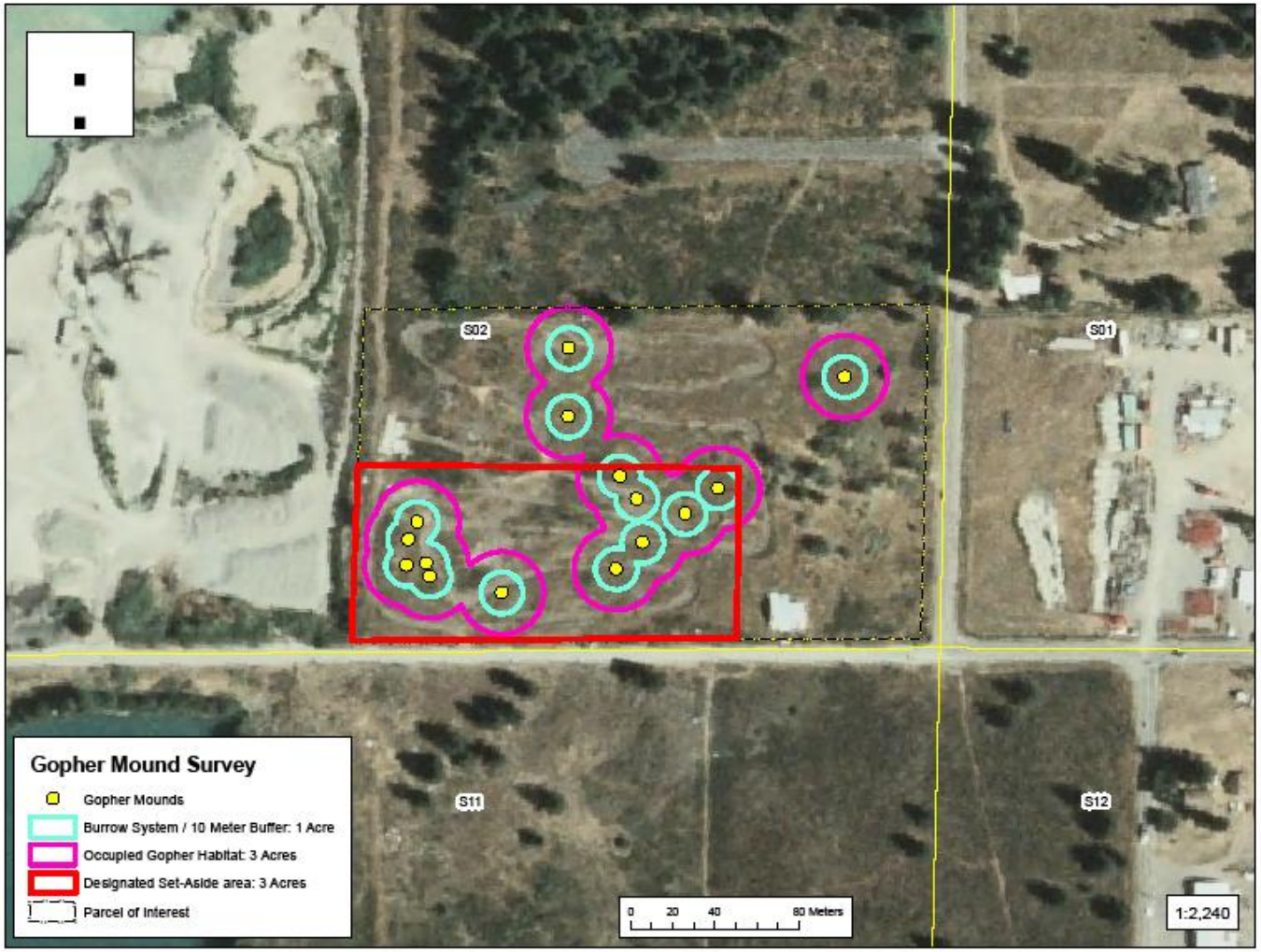
20 Cagey loamy sand
Carstairs gravelly loam, 0-5% (Mason County)
32 Everett very gravelly sandy loam, 0-3%
33 Everett very gravelly sandy loam, 3-15%
46 Indianola loamy sand, 0-3%
47 Indianola loamy sand, 3-15%
73 Nisqually loamy fine sand, 0-3%
74 Nisqually loamy fine sand, 3-15%
109 Spana gravelly loam
110 Spanaway gravelly sandy loam, 0-3%
111 Spanaway gravelly sandy loam, 3-15%
112 Spanaway stony sandy loam, 0-3%
113 Spanaway stony sandy loam, 3-15%
114 Spanaway-Nisqually complex

Go online to http://www.wdfw.wa.gov/hab/phsrecs.htm to see a generalized map of these soils in Thurston and Pierce Counties (does not include Mason County). Local records may be more accurate.

*** Note: This page updated December 2009 to add Carstairs soil type.***

Attachment 2

SAMPLE MAZAMA POCKET GOPHER SET-ASIDE DESIGN, BASED ON SURVEY RESULTS



Attachment 3

HABITAT MANAGEMENT PLAN TEMPLATE:
MAZAMA POCKET GOPHER

WDFW Mazama pocket gopher management recommendations can be found online at http://www.wdfw.wa.gov/hab/phsrecs.htm.

Applicant
NAME AND ADDRESS

Subject Property
PARCEL NUMBER, ADDRESS, JURISDICTION

EXISTING CONDITIONS

1. Parcel size, location, and current use including any improvements.

2. Mazama pocket gopher status and use of subject property. If other wildlife species of concern are also found on or near the property, their status and use should also be described. A single HMP can be used to cover multi-species and habitat management issues.

PROPOSED ACTIVITY

Describe the proposed activity including a discussion of proposed structures, roads, right-of-ways and their location on the subject parcel. Include a timeline for proposal activities and whether or not this proposal is part of a long-term plan for continued development of the property.

HABITAT MANAGEMENT PLAN CONDITIONS

ON-SITE

1. Describe and habitat preservation actions that will be taken on site. Include size and shape of any preserved area (set-aside) and how this area relates to the existing pocket gopher mound distribution on the parcel.
2. Describe actions that will be taken to maintain and enhance the habitat preservation area on the parcel. This may include but is not limited to; mowing, invasive species control, reestablishment of native plant species associated with gopher habitat.
3. Describe protection and education actions that will be taken on the preservation site and the property as a whole. This may include fencing, educational signs, etc.

OFF-SITE

1. Describe any mitigation actions that will be taken on parcels other than the parcel where the project is proposed.
2. Include a description of the parcel(s) their location(s).

3. Discuss how these parcels will be acquired and how managed as was done for the ON-SITE parcel.

DURATION OF PLAN and MODIFICATIONS

1. Describe how long the plan will be enforced, how often the plan will be reviewed, and what conditions lead to this review.
2. Describe how the plan will be funded and who or what organization(s) will be responsible for ensuring the plan is carried out and the site maintained.
3. Describe how responsibility for maintaining this plan will be transferred if ownership changes.
4. Describe how the plan will be reviewed and modified should land use on the parcel is proposed to change. This could include changes in how other natural resources on the parcel are managed in addition to additional or change in development.
5. Describe who will notify the local jurisdiction of any new proposed land use activities.

COMPLIANCE

Failure to comply with this Plan is a violation of [JURISDICTION] codes and may be subject to civil or criminal penalty.

_____ _____

_____ _____

Landowner or Agent Signature (Date)

Landowner or Agent Names (Print)

_____

Address

_____

City, State, Zip

_____

[JURISDICTION] Representative (Date)

For review and comment purposes, a copy of this plan may be sent to:
WDFW- Habitat Program
Attention: Region 6 Area Habitat Biologist
600 Capitol Way North
Olympia, WA 98501-1091

Attachment 4

Resources for further information about
Mazama pocket gopher species and habitat

Andersen, D.C. and J.A. MacMahon. 1981. Population dynamics and bioenergetics of a fossorial herbivore, Thomomys talpoides (Rodentia: Geomyidae), in a spruce-fir sere. Ecological Monographs 51:179-202.

Campbell, B. 2004. Restoring Rare Native Habitats in the Willamette Valley. A Landowner's Guide to Restoring Oak Woodlands, Wetlands, Prairies and Bottomland Hardwood and Riparian Forests. See Chapter 5. http://www.southsoundprairies.org/documents/Landownerguide.pdf

Stinson, D. W. 2005. Washington State Status Report for the Mazama Pocket Gopher, Streaked Horned Lark, and Taylor's Checkerspot. Washington Department of Fish and Wildlife, Olympia. 129+ xii pp. http://wdfw.wa.gov/wlm/diversty/soc/status/prairie/index.htm

WDFW Living with Wildlife Series: Pocket Gophers http://wdfw.wa.gov/wlm/living/gophers.htm

Witmer, G. W., R. D. Sayler, and M. J. Pipas. 1996. Biology and habitat use of the Mazama pocket gopher (Thomomys mazama) in the Puget Sound area, Washington. Northwest Science 70:93-98.