

Species Notes for
Long-tailed Weasel (*Mustela frenata*):

California Wildlife Habitat Relationships (CWHR) System
Level II Model Prototype



William F. Laudenslayer, Jr. (author)¹ and
Monica D. Parisi (editor)²

California Department of Fish and Game
California Interagency Wildlife Task Group

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¹ United States Forest Service, Pacific Southwest Research Station (ret.)

² California Department of Fish and Game, Biogeographic Data Branch

PREFACE

This document is part of the California Wildlife Habitat Relationships (CWHR) System, operated and maintained by the California Department of Fish and Game (CDFG) in cooperation with the California Interagency Wildlife Task Group (CIWTG). The information will be useful for environmental assessments and wildlife habitat management. For more information on the CWHR System and all of its components, please see <http://www.dfg.ca.gov/biogeodata/cwahr/>.

Notes such as these were prepared for 32 species by the US Forest Service Pacific Southwest Research Station as part of a 2000/2001 contract with CDFG. Each is part of a prototypical “Level II” model for a species. As compared with the “Level I” or matrix models initially available in the CWHR System, “Level II” models incorporate spatial issues such as size of a habitat patch and distance between suitable habitat patches.

The notes are divided into three major sections. First, “Distribution, Seasonality and Habitats” represents information in the existing Geographic Information System (GIS) range data and in the Level I matrix model for a species. There is a vector-based GIS layer of geographic range and seasonality for each species in CWHR as well as a matrix containing all suitability ratings – High (H), Medium (M), Low (L) or Unsuitable (-) – by habitat (e.g. BOW or Blue Oak Woodland), stage (e.g. 4P or small tree, open canopy) and life requisite (reproduction, cover, or feeding.). Tools such as “Bioview” within the CWHR software will return these suitability ratings for a species to a user-supplied data set containing habitats and either stages (e.g. 4P) or stage values (e.g. trees of 16.0 average diameter at breast height in a stand of 30% canopy closure).

Second, “Required Attributes of Suitable Habitat Patches” represents spatially-explicit requirements of a species. The information here builds upon what is known about habitat patch size and the most critical attributes of a habitat patch needed by an individual of the species. Applications such as “GRABS”, which stands for “Grouping Resources Algorithm for Biological Data Sets”, will “clump” pixels of a user-supplied raster-based GIS data set representing patches of a suitable habitat and stage for a species. It will calculate area, perimeter, and complexity within each patch and analyze its outside edge for juxtaposition with other habitats and stages of interest. Many of the attributes are what were once called “elements” in the CWHR model.

Third, “Spatial Habitat Requirements for Persistence of Population” represents estimates of the amount of habitat needed to maintain a population of a species. This may be considered the starting point for a “Level III” CWHR model, which would take into account spatial issues as well as a number of population parameters not yet incorporated into CWHR. Such information is included for most, but not all, Level II-modeled species.

M157 Long-tailed Weasel *Mustela frenata*

Distribution, Seasonality and Habitats

<i>Model Parameter</i>	<i>Threshold Value(s) for Species</i>
<p><u>Biogeographic Range and Seasonality</u> range of the species, by season, in the state</p>	Species is a common to uncommon resident of most habitats in California, except xeric habitats in the Mojave and Colorado deserts.
<p><u>Suitable Habitats</u> habitats rated in the California Wildlife Habitat Relationships (CWHR) System as high (H), medium (M), or low (L) suitability for reproduction, cover, or feeding</p>	Species finds suitability (H --->L) for reproduction, cover and/or feeding in some or all stages of: Alkali Desert Scrub, Alpine Dwarf-Shrub, Annual Grassland, Aspen, Bitterbrush, Blue Oak Woodland, Blue Oak – Foothill Pine, Chamise-Redshank Chaparral, Closed-cone Pine – Cypress, Coastal Oak Woodland, Coastal Scrub, Deciduous Orchard, Desert Riparian, Desert Scrub, Desert Succulent Shrub, Desert Wash, Douglas Fir, Dryland Grain Crops, Eastside Pine, Eucalyptus, Evergreen Orchard, Irrigated Grain Crops, Irrigated Hayfield, Irrigated Row and Field Crops, Jeffrey Pine, Joshua Tree, Juniper, Klamath Mixed Conifer, Lodgepole Pine, Low Sage, Mixed Chaparral, Montane Chaparral, Montane Hardwood, Montane Hardwood – Conifer, Montane Riparian, Pasture, Perennial Grassland, Pinyon – Juniper, Ponderosa Pine, Red Fir, Redwood, Sagebrush, Sierran Mixed Conifer, Subalpine Conifer, Urban, Valley Foothill Riparian, Valley Oak Woodland, Vineyard, Wet Meadow, and White Fir.
<p><u>Water</u> whether water is required, enhances, or is irrelevant for habitat suitability</p>	Water enhances suitability. While water does not seem to be essential, water in all forms (e.g., lake, pond, vernal pool, spring) is preferred and animal does likely secure water.

Required Attributes of Suitable Habitat Patches

<i>Model Parameter</i>	<i>Threshold Value(s) for Species</i>
<p><u>Patch Size</u> L = low suitability. This is the minimum patch size for persistence of an individual. H = high suitability. Above this patch size, area alone does not increase habitat suitability for an individual.</p>	<p>20 acres (L) 100 acres (H)</p>

<p>Edges requirements for a transition between two life form types – tree/shrub, tree/grass, tree/water, tree/agricultural, shrub/grass, shrub/water, shrub/agricultural, grass/water, grass/agricultural, or water/agricultural</p>	<p>Edges are not required by this species.</p>
<p>Structural Habitat Attributes requirements for live vegetation, dead or decadent vegetation, vegetation residues, physical features, or human-made features</p>	<p>A mixture of layers is desirable to provide for a diversity of prey species. Various layers of cover provide protection from predators. Physical features (burrow, rock, talus, mud flats) and human-made features (buildings, pack stations) also desirable.</p> <p>Snags of all sizes and conditions provide cover for prey species and can provide opportunities for breeding.</p> <p>Residue of all sizes is cover for prey species. GOOD RODENT HABITAT - ESPECIALLY FOR VOLES AND MICE - IS GOOD WEASEL FORAGING HABITAT. Larger residue provides cover and breeding locations for this species.</p>
<p>Food vegetative or animal diet requirements</p>	<p>Essential or secondarily-essential diet items include small mammals (shrews, mice, voles), medium mammals (gophers, ground squirrels, rabbits), small birds (sparrows, warblers), medium birds (jays, robins), and larger birds (woodpeckers, band-tailed pigeon, kestrel). Small mammals seem to dominate.</p>

Spatial Habitat Requirements for Persistence of Population

<p>Lowest suitability = 5000 acres, if suitable patches, are of a minimum size (see above), and are a maximum of 200 meters apart</p> <p>Highest suitability = greater than 5,000 acres, if suitable patches are of a minimum size (see above), and are less than 50 meters apart</p>
