

Attachment 2

Trail Assessment Maps

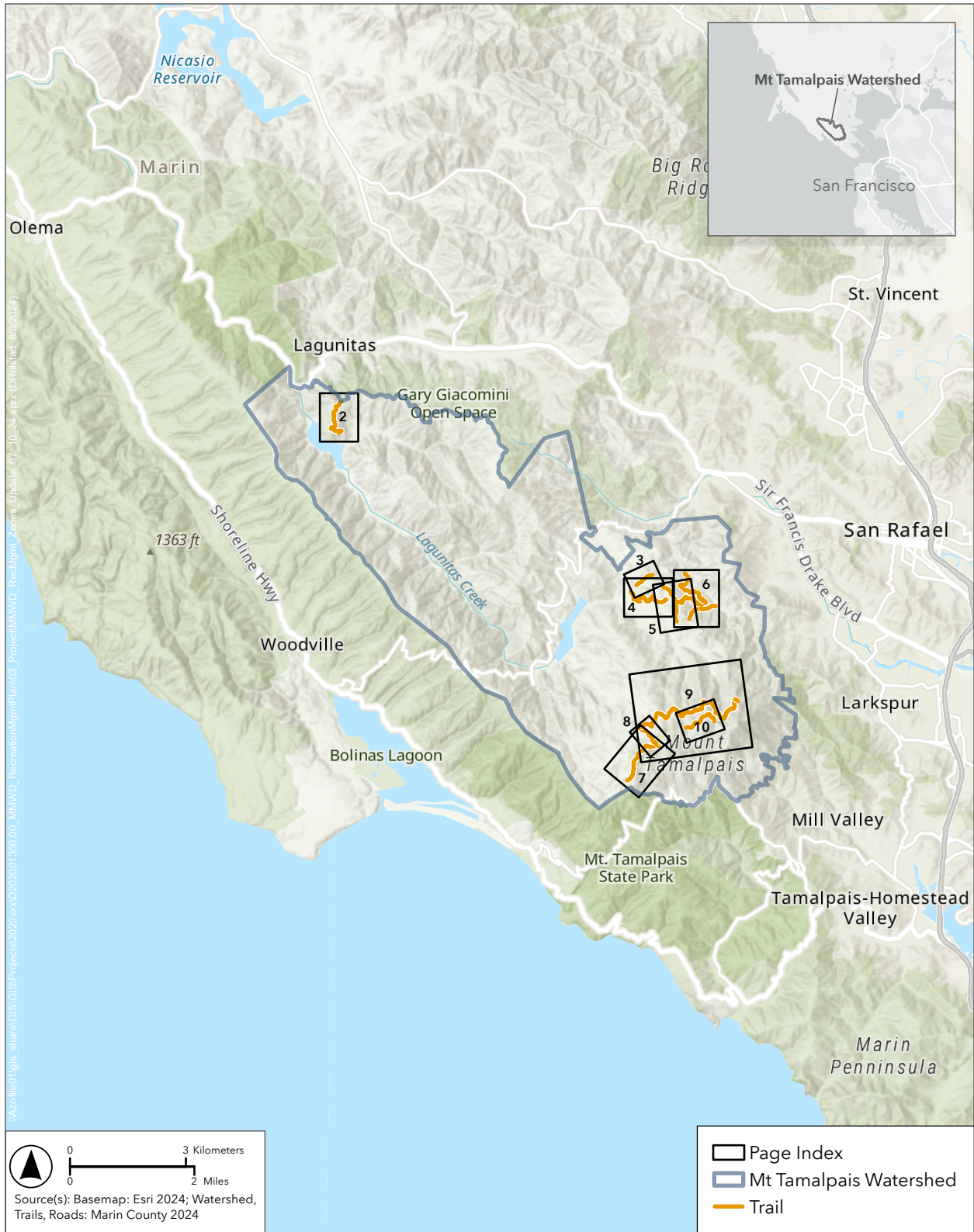


Figure 1A
 Trails Overview
 Marin Water Recreation Management Plan



△ Monitoring Point

Average Trail Slope

- 0-1%
- 1-5%
- 5-10%
- 10-15%
- >15%

○ Other Trail

■ Optional Re-Route

— Road

⋯ Rare Plant Zone

— NHD Flowline

■ NHD Waterbody

Marin County Fine Scale Vegetation Map

Shrub

- Adenostoma fasciculatum Alliance
- Arctostaphylos (bakeri, montana) Alliance
- Arctostaphylos (canescens, manzanita, stanfordiana) Alliance
- Arctostaphylos (nummularia, sensitiva) - Chrysolepis chrysophylla Alliance
- Arctostaphylos glandulosa Alliance
- Artemisia californica - (Salvia leucophylla) Alliance
- Baccharis pilularis Alliance
- Ceanothus cuneatus Alliance
- Ceanothus thyriflorus Alliance
- Lotus scoparius - Lupinus albifrons - Eriodictyon spp. Alliance
- Quercus durata Alliance
- Quercus wislizeni - Quercus chrysolepis (shrub) Alliance
- Toxicodendron diversilobum - (Baccharis pilularis) Association

Conifer

- Hesperocyparis sargentii Association
- Hesperocyparis sargentii / Ceanothus jepsonii - Arctostaphylos spp. Association
- Pinus muricata - Pinus radiata Alliance
- Pseudotsuga menziesii - (Notholithocarpus densiflorus - Arbutus menziesii) Alliance
- Sequoia sempervirens Alliance

Hardwood

- Acer macrophyllum Association
- Aesculus californica Alliance

- Arbutus menziesii Alliance
- Notholithocarpus densiflorus Alliance
- Quercus agrifolia Alliance
- Quercus chrysolepis Alliance
- Quercus garryana Alliance
- Quercus kelloggii Alliance
- Quercus lobata Alliance
- Umbellularia californica Alliance

Non-native Forest, Shrub, and Herbaceous

- Cortaderia (jubata, seloana) Semi-Natural Alliance
- Eucalyptus (globulus, camaldulensis) Provisional Semi-Natural Association
- Genista monspessulana Semi-Natural Association
- Hesperocyparis macrocarpa Ruderal Provisional Semi-Natural Association
- Non-native Forest
- Pinus radiata Plantation Provisional Semi-Natural Association

Herbaceous

- Californian Annual & Perennial Grassland Mapping Unit
- Californian Cliff, Scree & Rock Vegetation Group

Developed and Built Up

- Developed
- Major Road

Other Map Classes

- Barren and Sparsely Vegetated
- Forest Fragment
- Shrub Fragment
- Water

Herbaceous Wetland

- Arid West Freshwater Marsh Group
- Vancouverian Freshwater Wet Meadow & Marsh Group

Riparian Shrub

- Vancouverian Lowland Marsh, Wet Meadow & Shrubland Macrogroup

Riparian Forest

- Acer macrophyllum - Alnus rubra Alliance
- Alnus rhombifolia Alliance
- Fraxinus latifolia Alliance
- Salix gooddingii - Salix laevigata Alliance
- Salix lasiolepis Alliance

Figure 1B
Trails Legend
Marin Water Recreation Management Plan



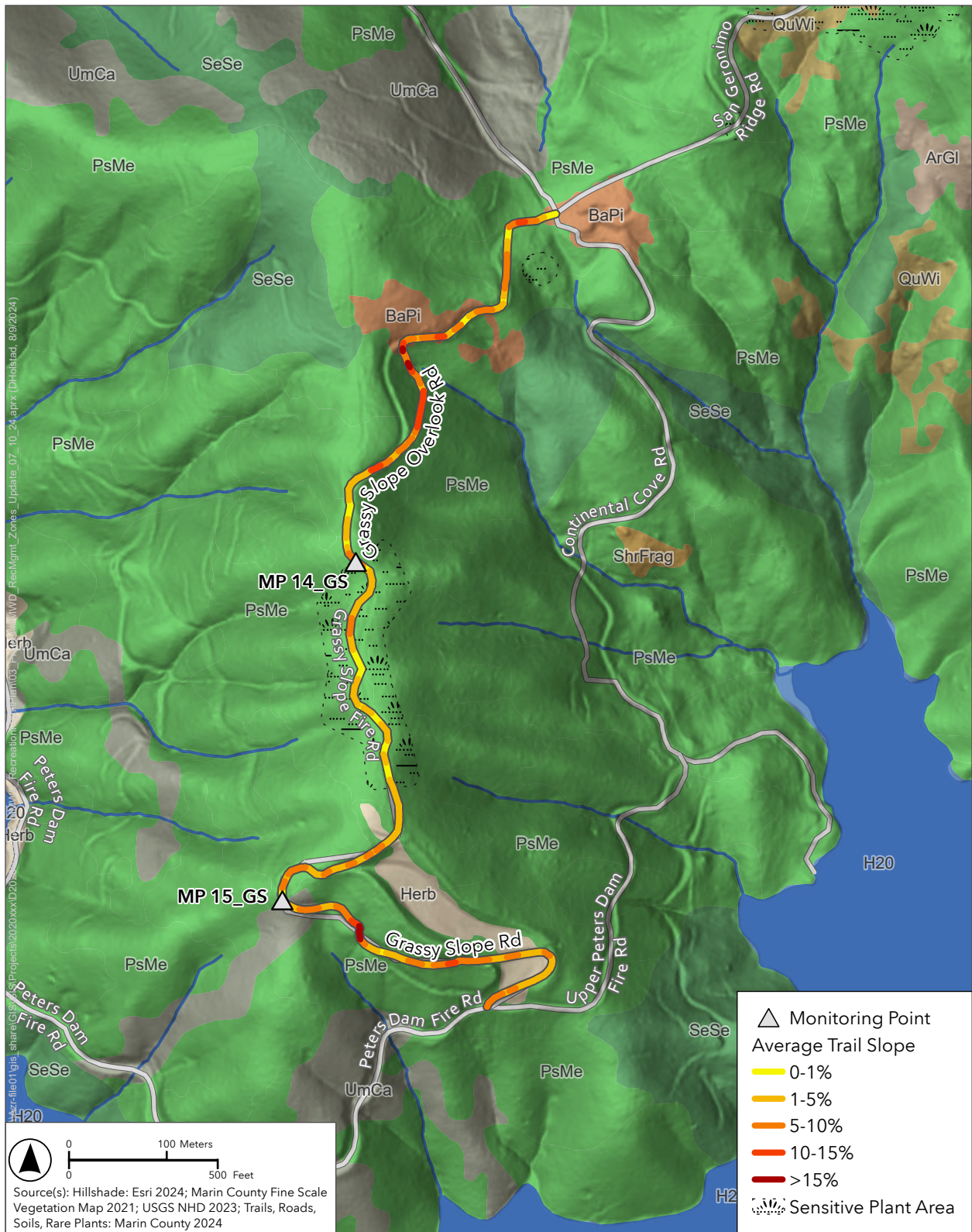


Figure 2
 Grassy Slope Rd & Grassy Slope Overlook Rd
 Marin Water Recreation Management Plan



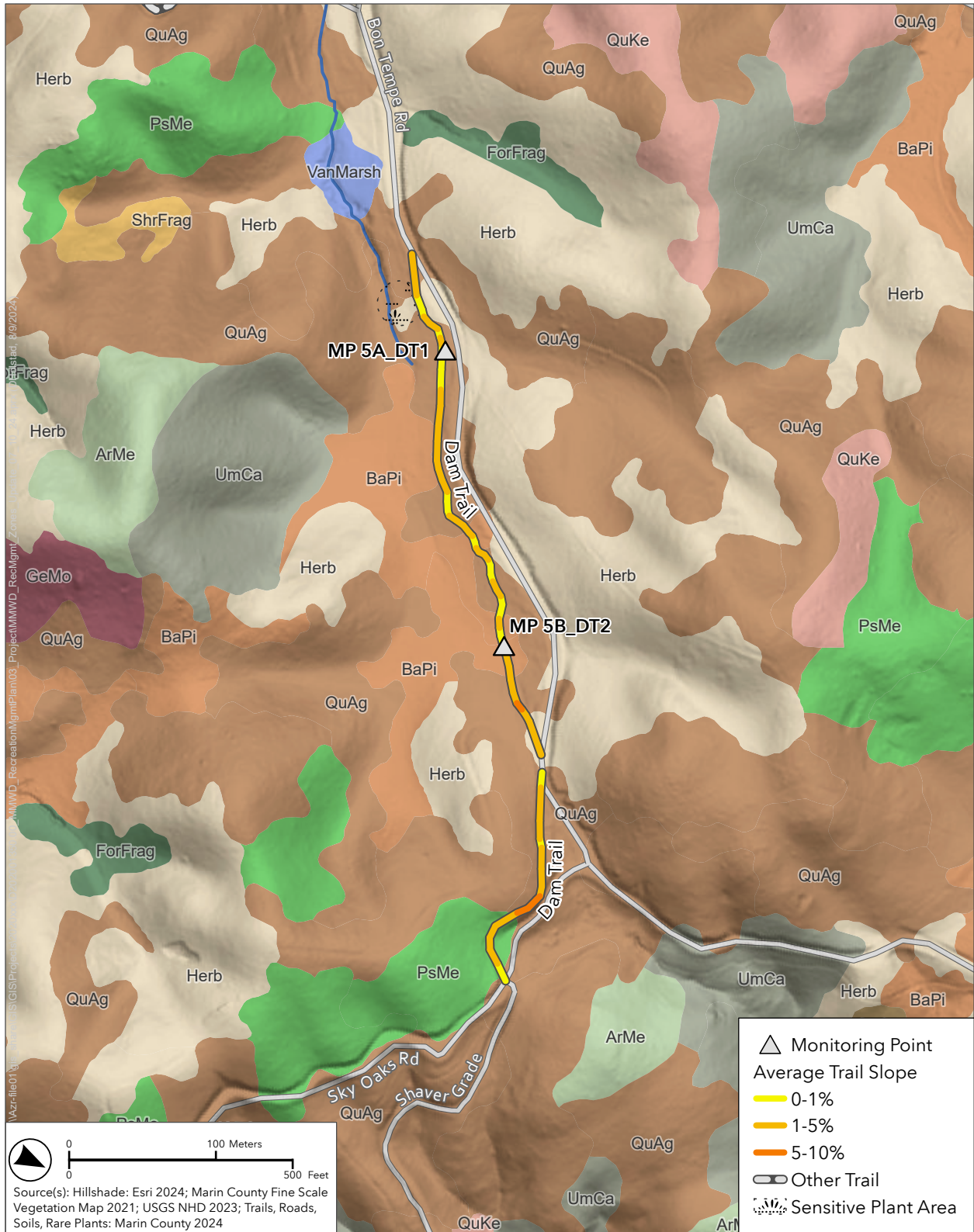


Figure 3
 Dam Trail
 Marin Water Recreation Management Plan



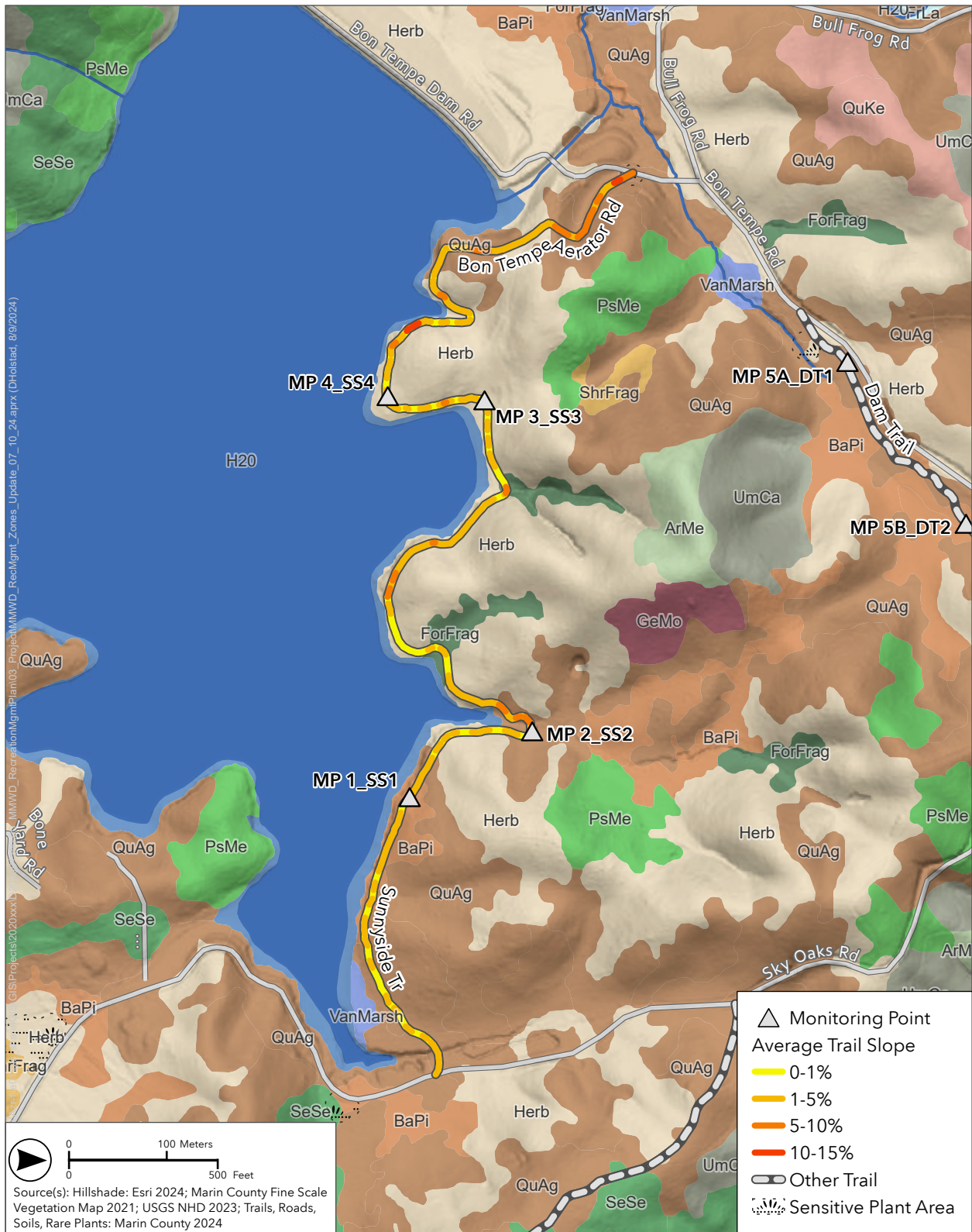


Figure 4
 Bon Tempe Aerator Rd, Bon Tempe Shoreline Tr & Sunnyside Tr
 Marin Water Recreation Management Plan



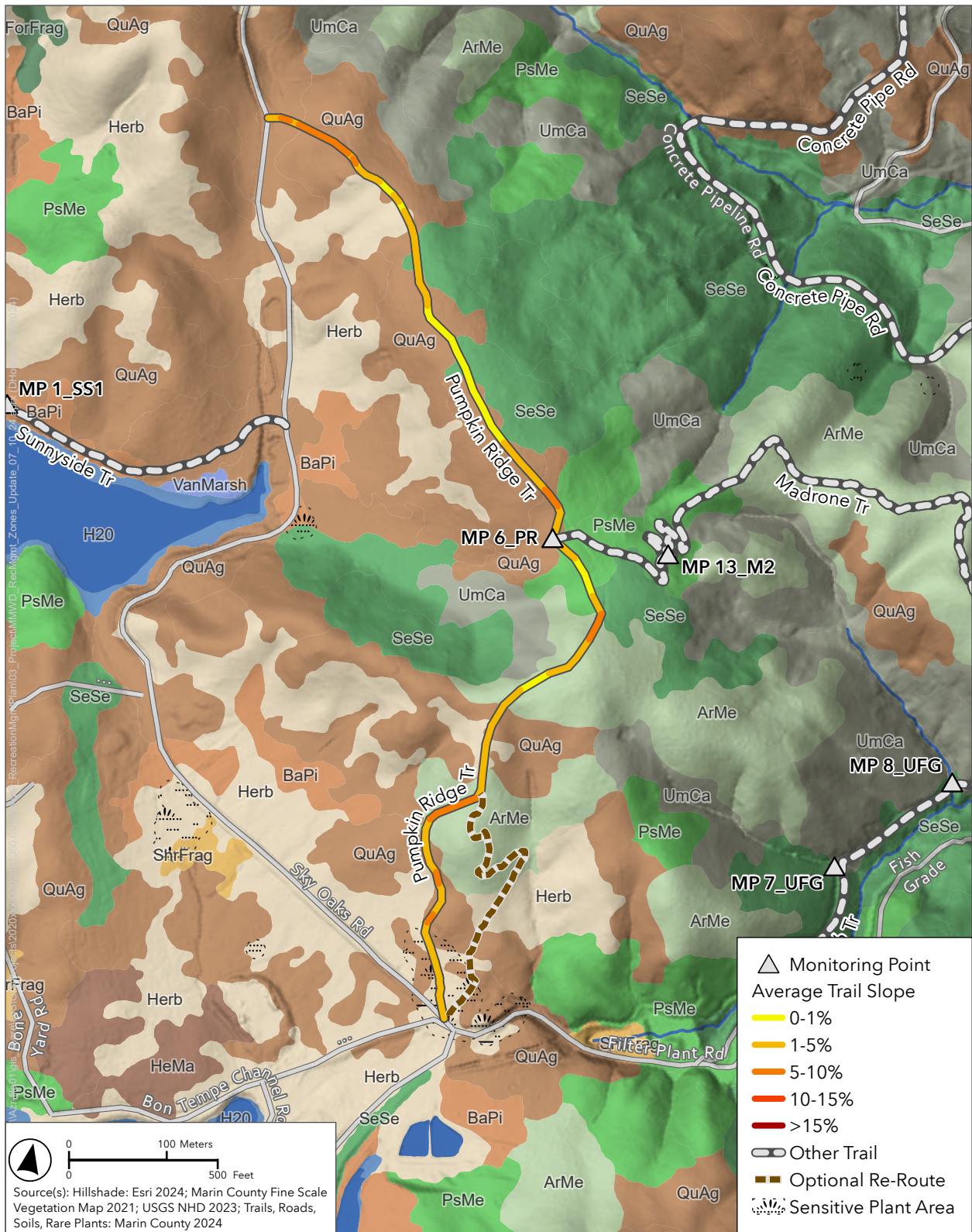


Figure 5
 Pumpkin Ridge Tr, Old Pumpkin Ridge Tr & Sky Oaks Spur
 Marin Water Recreation Management Plan



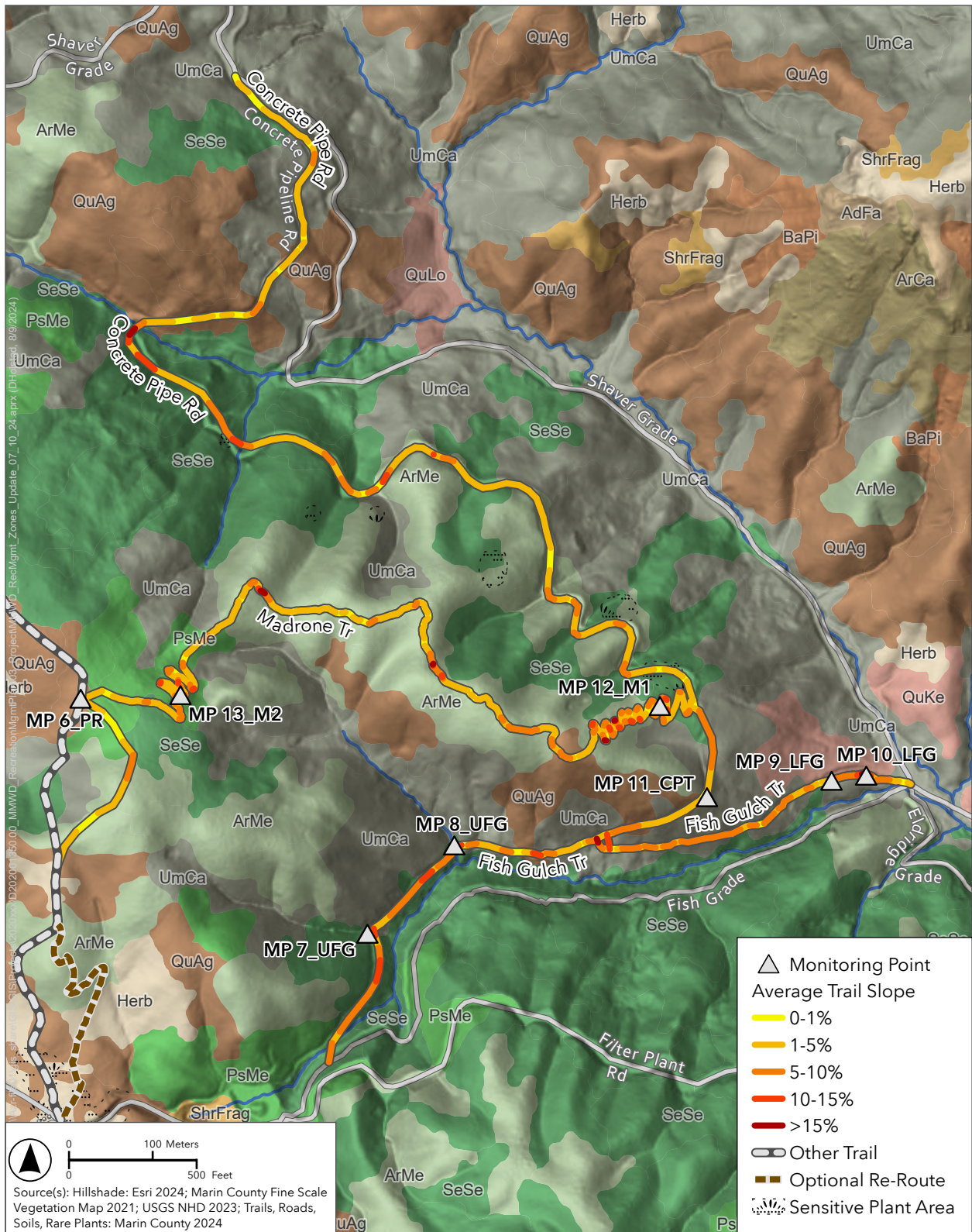


Figure 6
 Madrone Tr, Concrete Pipe Tr, Concrete Pipe Rd, Upper Fish Gulch Tr & Lower Fish Gulch Tr
 Marin Water Recreation Management Plan



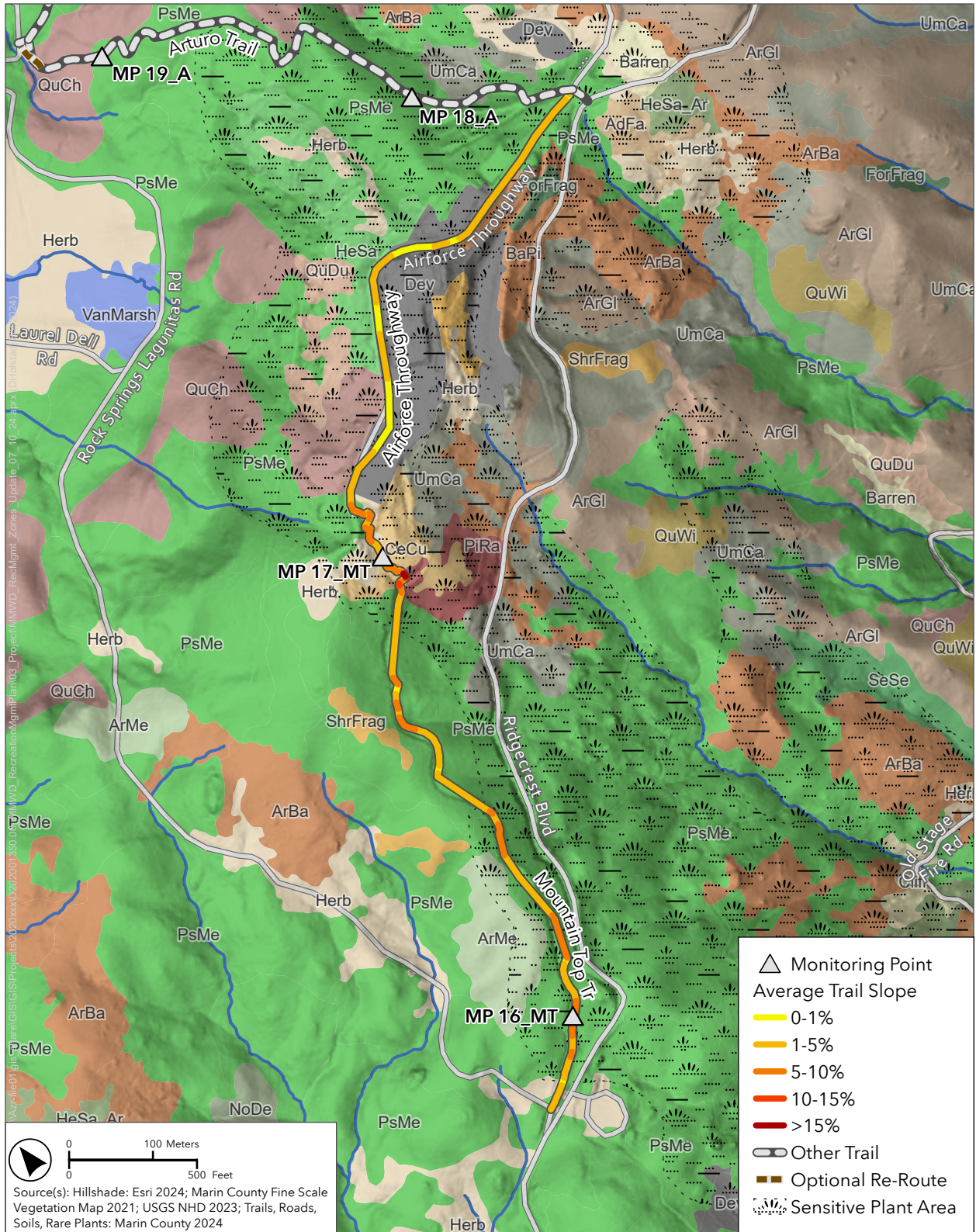


Figure 7
 Airforce Throughway & Mountain Top Tr
 Marin Water Recreation Management Plan



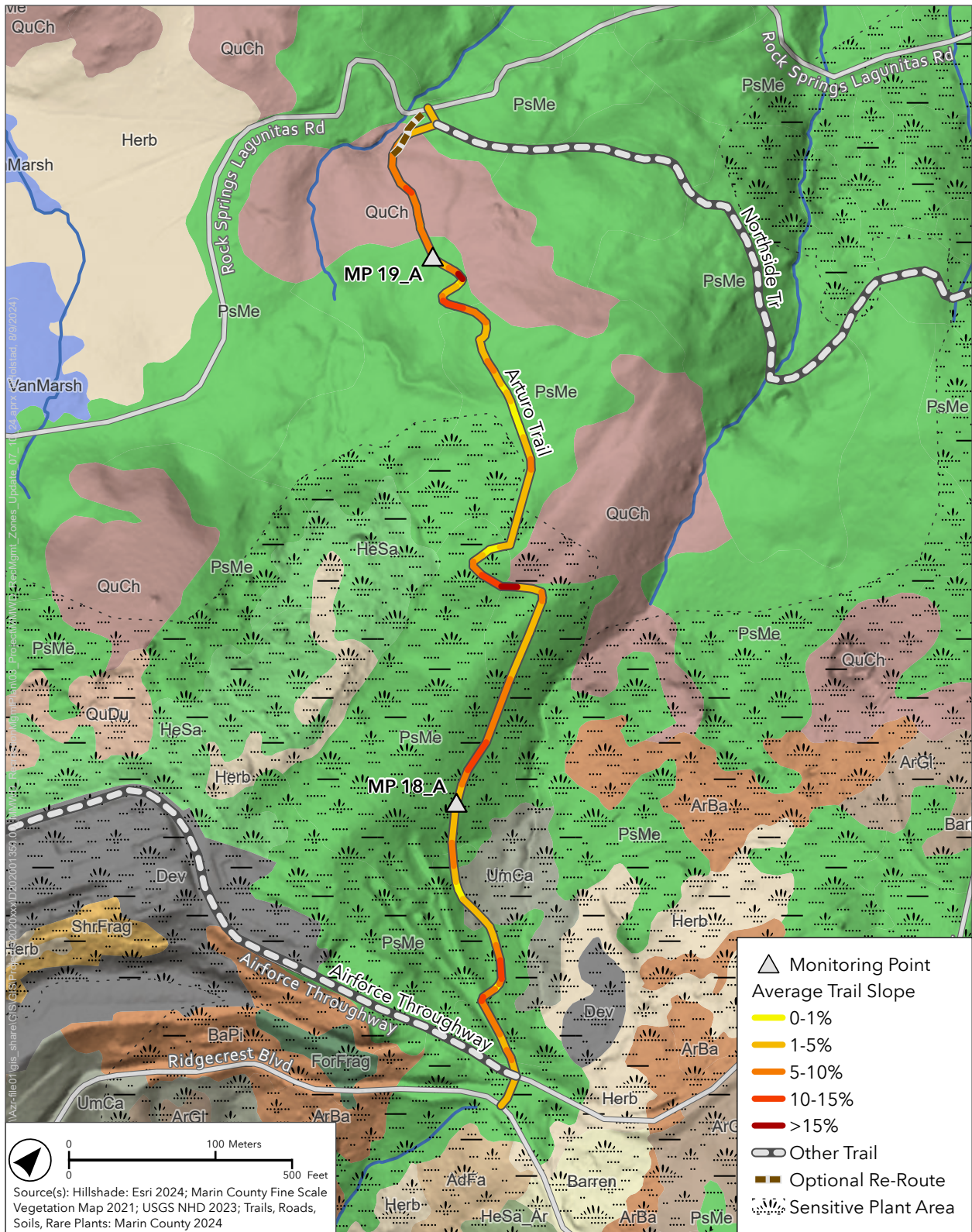


Figure 8
 Westpeak Turnoff, Airforce Throughway Extension, Azalea Meadow Tr & Arturo Tr
 Marin Water Recreation Management Plan



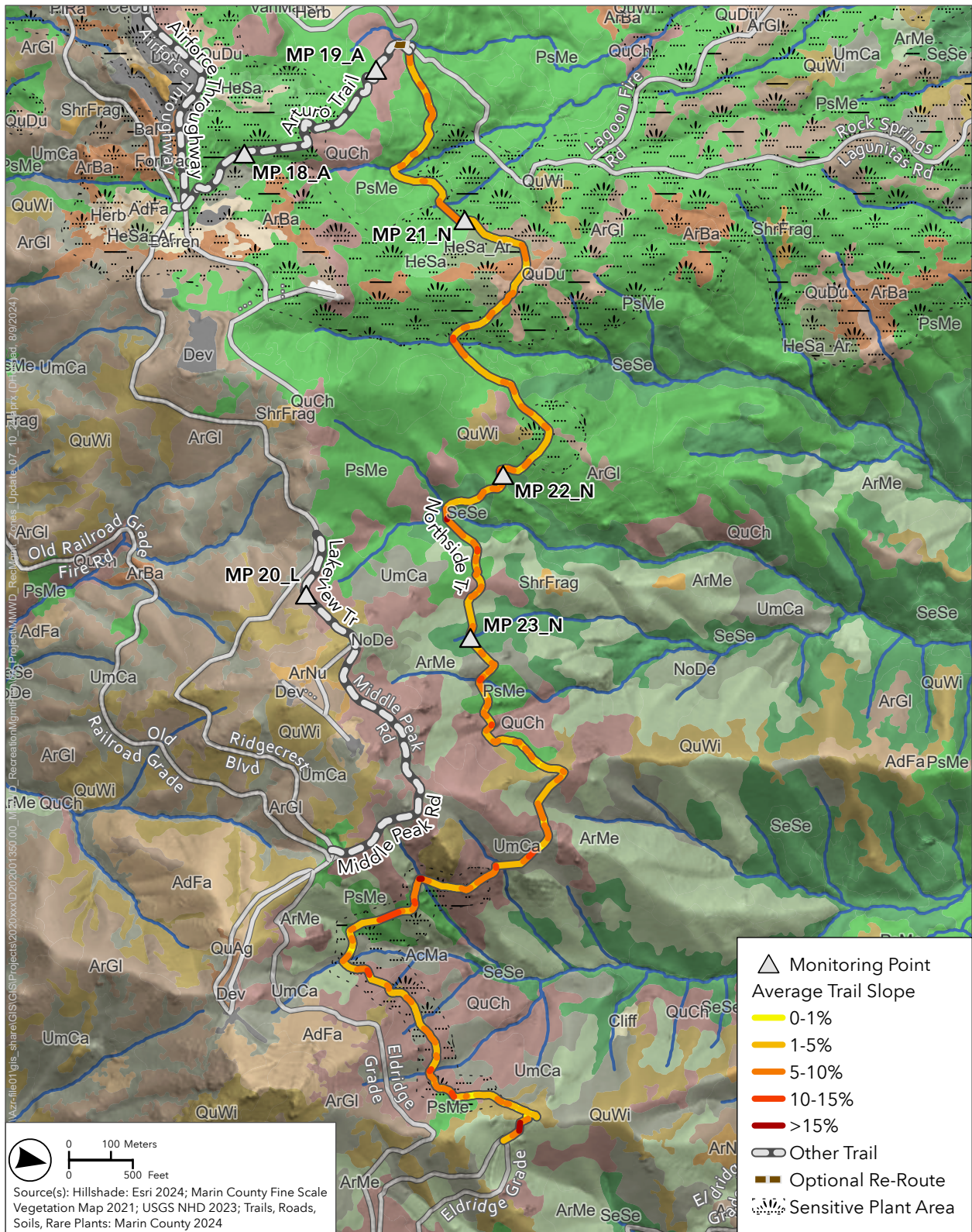


Figure 9
 Northside Tr & Northside-Eldridge Connector
 Marin Water Recreation Management Plan





Trail Sharing Pilot Trails Native and Invasive Plant Assessment

Introduction

Summarized below is the information Marin Water has about the rare and invasive plants adjacent to trails under consideration for the Pilot. Rare plant records come from the Biodiversity Fire and Fuels Integrated Plan (2019), and surveys or observations by staff and consultants since 2019. There may be additional rare plants in these locations not captured in this data. Any vegetation modification in an area identified as sensitive should be preceded by a survey to ensure exact locations of rare plants are known.

Invasive plant data comes from One Tam early detection surveys which are conducted along all trails and roads, along with staff records.

Trail segments

Sunnyside Trail

Rare plants: No rare plants are documented adjacent to this trail

Invasive plants: Yellow starthistle, firethorn, cotoneaster and jubata grass actively managed in vicinity of this trail. Broom treated here every 2 years.

Pumpkin Ridge Trail

Rare plants: Gairdner's yampah is adjacent to trail; pink star-tulip, Santa Rosa horkelia are in the vicinity of this trail, but not immediately adjacent to trail.

Invasive plants: Yellow starthistle and stinkwort are actively management in the vicinity of this trail. Broom treated here every 2 years.

Madrone Trail

Rare plants: No rare plants are documented adjacent to this trail

Invasive plants: Broom treated here every 2 years.

Concrete Pipe Fire Road

Rare plants: Several patches of Napa false indigo near but not on trail

Invasive plants: Broom treated here every 2 years.

Upper Fish Gulch Trail

Rare plants: No rare plants are documented adjacent to this trail

Invasive plants: Broom treatment here begins in 2025.

Lower Fish Gulch Trail

Rare plants: No rare plants are documented adjacent to this trail

Invasive plants: Broom treatment here begins in 2025.

Arturo Trail

Rare plants: Trail passes through or near documented patches of Mt. Tam manzanita, Tiburon buckwheat, Oakland star tulip, Mt Tamalpais jewel flower
Invasive plants: No priority weeds along this trail

Mountain Top Trail/Airforce throughway

Rare plants: Trail passes through or near patches of Mt Tam manzanita, Mt Tamalpais jewel flower & Tiburon buckwheat
Invasive plants: Yellow starthistle, purple starthistle and cheat grass actively managed here

Lakeview Trail /Middle peak

Rare plants: Mt. tam manzanita nearby, Tamalpais jewel flower may be nearby
Invasive plants: No priority weeds along this trail

Grassyslope Fire Road/Grassy slope overlook

Rare plants: California bottlebrush adjacent to trail
Invasive plants: There is untreated French broom and upright veldt grass in this area

Northside trail

Rare plants: Napa false indigo has been documented along/adjacent to a stretch of this trail. Trail passes through a zone where the following species have been documented: Mt. Tam manzanita, Oakland startulip, Tiburon buckwheat, serpentine reed grass, Tamalpais jewel flower.
Invasive plants: Scotch broom is managed at the east end of this trail. Otherwise, no priority weeds have been identified along this trail.

About the rare plants

None of these plants are state or federally listed.

“The California Rare Plant Ranks are a ranking system originally developed by the California Native Plant Society (CNPS) to better define and categorize rarity in California's flora. These ranks were previously known as the CNPS lists but were renamed to the California Rare Plant Ranks to better reflect the joint effort among the CNPS, the CNDDDB [California Natural Diversity Database], and a wide range of botanical experts, who work together to assign a rarity ranking. All plants tracked by the CNDDDB are assigned to a California Rare Plant Rank category.” (California Department of Fish and Wildlife)

common name	Gairdner's yampah
scientific name	Perideridia gairdneri ssp. gairdneri
plant info	perennial herb, flowers late summer, there is a similar looking plant (P. kelloggii) growing nearby; the two species are most reliably distinguished when plant is fruiting, August-September.
California rare plant rank	4.2, Plants of limited distribution; fairly threatened in California

common name	pink star-tulip
scientific name	<i>Calochortus uniflorus</i>
plant info	bulb plant, flowers in spring, difficult to find outside of growing season
California rare plant rank	4.2, Plants of limited distribution; fairly threatened in California

common name	Santa Rosa horkelia
scientific name	<i>Horkelia tenuiloba</i>
plant info	perennial herb, very low growing
California rare plant rank	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

common name	Napa false indigo
scientific name	<i>Amorpha californica</i> var. <i>napensis</i>
plant info	woody- forest understory shrub or small tree
California rare plant rank	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

common name	Tiburon buckwheat
scientific name	<i>Eriogonum luteolum</i> var. <i>caninum</i>
plant info	low-growing annual herb typically found on serpentine-derived soils. Some patches will have 10,000 + plants; as with other annuals, expect abundance and exact footprint to vary from one year to the next
California rare plant rank	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

common name	Mt Tam manzanita
scientific name	<i>Arctostaphylos montana</i> ssp. <i>montana</i>
plant info	woody – low shrub typically found on serpentine-derived soils, though occasionally found elsewhere. Limited to Mt. Tam, where it can be a community co-dominant over large areas
California rare plant rank	1B.3, Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California

common name	Oakland star tulip
scientific name	<i>Calochortus umbellatus</i>
plant info	bulb plant, flowers in spring, difficult to find outside of growing season; typically found in serpentine-derived soils, but sometimes found elsewhere. Typically grows at sparse density, sometimes across large areas
California rare plant rank	4.2, Plants of limited distribution; fairly threatened in California

common name	Mt Tamalpais jewel flower
scientific name	<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>
plant info	low growing annual herb typically found on serpentine-derived soils. Some patches will have 10,000 + plants; as with other annuals, expect abundance and exact footprint to vary from one year to the next. There is another subspecies of <i>S. glandulosus</i> found in the same habitat, the two subspecies can only be distinguished during flowering, in mid-summer.
California rare plant rank	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California

common name	Tamalpais jewel flower
scientific name	<i>Streptanthus batrachopus</i>
plant info	low growing annual herb limited to serpentine-derived soils. Some patches will have 10,000 + plants; as with other annuals, expect abundance and exact footprint to vary from one year to the next.
California rare plant rank	1B.3, Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California

common name	California bottle brush grass
scientific name	<i>Elymus californicus</i>
plant info	tall, perennial grass, typically found in shade or part shade
California rare plant rank	4.3, Plants of limited distribution; not very threatened in California

common name	serpentine reed grass
scientific name	<i>Calamagrostis ophitidis</i>
plant info	tall, perennial grass; limited to serpentine- derived soils
California rare plant rank	4.3, Plants of limited distribution; not very threatened in California