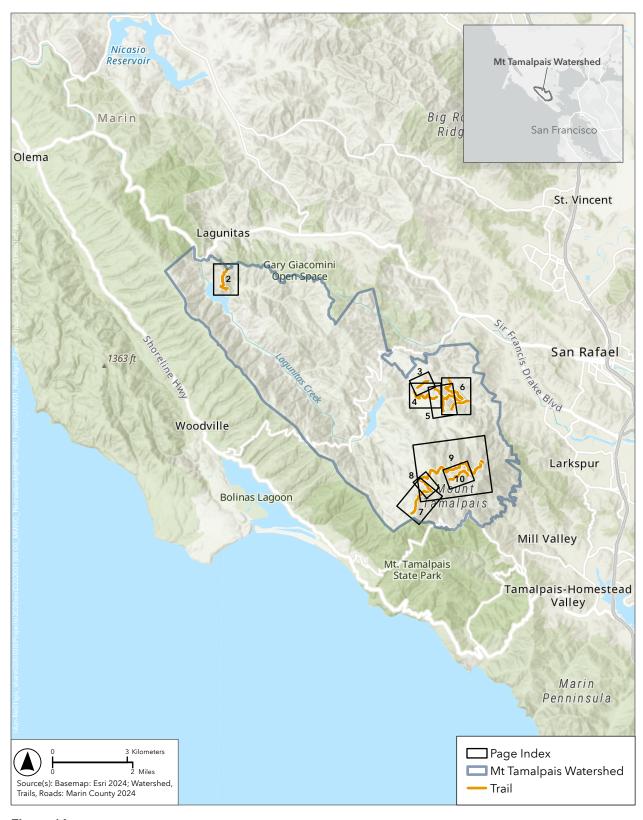
# **Trail Assessment Matrix**

Trail assessments were carried out on a select number of watershed trails to inform the Trail Sharing Pilot Program (not all trails evaluated will be selected).

Trail Name	Trail Length (miles)	Current Level of Use	Trail Difficulty Level	Connectivity to Non-System Trails		Existing Abiotic Trail Condition				Saftey		Biological and Natural Resources			Stewardship Opportunities		
					Representative Trail Width	Representati ve Surface Material	Serpentine Soils	Avg. Grade, Max Grade	Trail Surface Condition	Line of Sight	Slow Zone Areas	Trail Hazards	Sensitive Habitat (Rare Plant/ Wildlife Habitat)	Water Quality: Stream Crossings/	Mitigated Crossing	Trail Maintenance Actions	Invasive Managemen t Priority
		Low (0-5 users/day); Moderate (6-10); High (>10)	Easy, Moderate, Difficult	Low, Moderate, High			Yes, No		Good, Fair, Poor	Good, Average, Need Improvement	Yes, No	Many, Few, None	Low, Moderate, High	Yes, No		Many, Few	Low, High
Sunnyside Trail	0.62	Weekday: Mod Weekend: High	Moderate	High	51"	Compacted Native Soil	No	Avg: 2% Max: 9%	Good	Good	Yes	Few	Low	Yes	Bridged	Many	Low
Upper Dam Trail	0.10	Weekday: Low Weekend: High	Easy	Low	14"	Compacted Native Soil	No	Avg: 6% Max: 17%	Good	Need Improvement	Yes	Few	Low	No		Few	Low
Lower Dam Trail	0.23	Weekday: Low Weekend: Mod	Easy	Low	14"	Compacted Native Soil	No	Avg: 6% Max: 17%	Good	Good	No	None	Moderate	Yes	No	Few	High
Pumpkin Ridge Trail	0.70	Weekday: Low Weekend: High	Moderate	Moderate	118"	Compacted Native Soil	No	Avg: 4% Max: 16%	Good	Good	No	Few	Low	No		Many	Low
Pumpkin Ridge Trail Re-Route	0.23	Weekday: Low Weekend: High	Moderate	N/A	N/A	Compacted Native Soil	No	Avg: 3% Max: 14%	N/A	Good	No	None	Moderate	No		N/A	Low
Madrone Trail	0.91	Weekday: Low Weekend: Mod	Moderate	Low	35"	Compacted Native Soil	No	Avg:3% Max: 19%	Good	Need Improvement	Yes	Many	Low	No		Many	Low
Concrete Pipe Road	0.97	Weekday: Low Weekend: Mod	Easy	Low	180"	Compacted Native Soil	No	Avg: 4% Max: 23%	Good	Good	No	None	Low	No		Few	High
Concrete Pipe Trail	0.16	Weekday: Low Weekend: Mod	Difficult	Low	25"	Compacted Native Soil	No	Avg: 4% Max: 10%	Good	Average	No	Few	Low	No		Few	High
Upper Fish Gulch Trail	0.31	Weekday: Low Weekend: Low	Difficult	Low	50"	Compacted Native Soil	No	Avg: 6% Max: 15%	Fair	Average	Yes	Many	Moderate	Yes	Rock Crossing	Few	High
Lower Fish Gulch Trail	0.27	Weekday: Low Weekend: Low	Difficult	Low	36"	Compacted Native Soil	No	Avg: 6% Max: 17%	Fair	Average	Yes	Many	Moderate	Yes	Rock Crossing	Many	High
Grassyslope Road	0.86	Weekday: Low Weekend: Low	Moderate	Low	36"	Compacted Native Soil	No	Avg: 5% Max: 20%	Fair	Good	No	Few	Low	No		Few	High
Mountain Top Trail/Airforce Throughway	0.94	Weekday: Low Weekend: Mod	Moderate	Low	Variable 44" - 180"	Compacted Native Soil & Pavement	Yes	Avg: 3% Max: 16%	Good	Good	Yes	Few	High	Yes	Rock Crossing	Few	Low
Arturo Trail	0.52	Weekday: Low Weekend: Low	Difficult	Low	32"	Compacted Native Soil	No	Avg: 4% Max: 20%	Good	Average	Yes	Few	Low	Yes	Rock Crossing	Many	Low
Lakeview Trail/ Middle Peak Rd	0.66	Weekday: Low Weekend: Mod	Moderate	Moderate	Variable 39"-180"	Compacted Native Soil	No	Avg: 4% Max: 13%	Good	Need Improvement	Yes	Few	Low	No		Few	Low
Northside Trail	2.66	Weekday: Low Weekend: Mod	Moderate	High	33"	Rock/ Compacted Native Soil	Yes	Avg: 5% Max: 29%	Good	Good	No	Few	High	Yes	Rock Crossing	Few	Low
Total Length of Trails Assessed:	10.14		-														



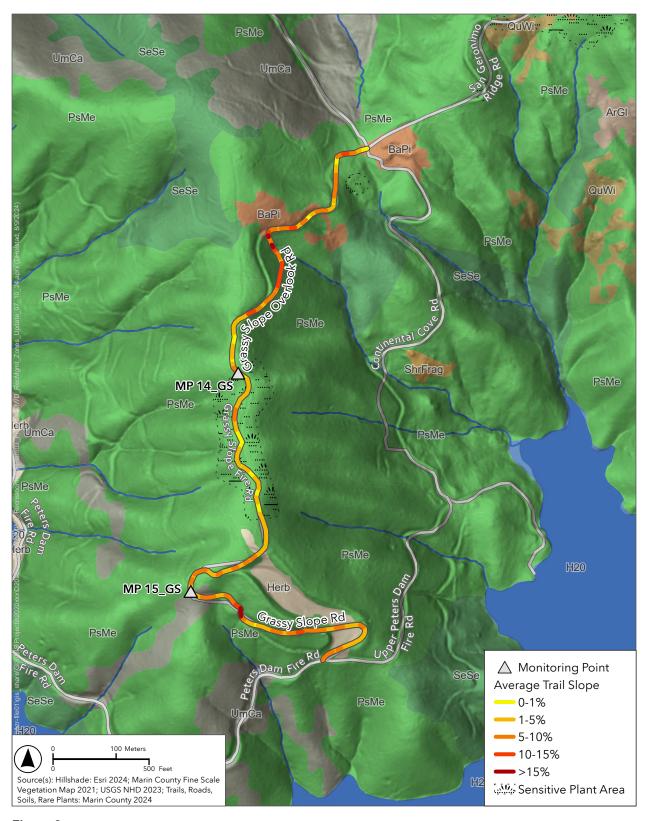
**Figure 1A**Trails Overview
Marin Water Recreation Management Plan



△ Monitoring Point Arbutus menziesii Alliance Average Trail Slope Notholithocarpus densiflorus Alliance <del>---</del> 0-1% Quercus agrifolia Alliance **1**-5% Quercus chrysolepis Alliance **5-10%** Quercus garryana Alliance **—** 10-15% Quercus kelloggii Alliance Quercus lobata Alliance Other Trail Umbellularia californica Alliance Optional Re-Route Non-native Forest, Shrub, and Herbaceous  $\longrightarrow$  Road Cortaderia (jubata, selloana) Semi-Natural Rare Plant Zone Eucalyptus (globulus, camaldulensis) Provisional — NHD Flowline Semi-Natural Assocation NHD Waterbody Genista monspessulana Semi-Natural Marin County Fine Scale Vegetation Map Association Shrub Hesperocyparis macrocarpa Ruderal Provisional Adenostoma fasciculatum Alliance Semi-Natural Association Arctostaphylos (bakeri, montana) Alliance Non-native Forest Arctostaphylos (canescens, manzanita, Pinus radiata Plantation Provisional Semi-Natural stanfordiana) Alliance Association Arctostaphylos (nummularia, sensitiva) -Herbaceous Chrysolepis chrysophylla Alliance Californian Annual & Perennial Grassland Arctostaphylos glandulosa Alliance Mapping Unit Artemisia californica - (Salvia leucophylla) Californian Cliff, Scree & Rock Vegetation Group Alliance Developed and Built Up Baccharis pilularis Alliance Developed Ceanothus cuneatus Alliance Major Road Ceanothus thyrsiflorus Alliance Other Map Classes Lotus scoparius - Lupinus albifrons - Eriodictyon Barren and Sparsely Vegetated spp. Alliance Forest Fragment Quercus durata Alliance Shrub Fragment Quercus wislizeni - Quercus chrysolepis (shrub) Water Alliance Herbaceous Wetland Toxicodendron diversilobum - (Baccharis Arid West Freshwater Marsh Group pilularis) Association Conifer Vancouverian Freshwater Wet Meadow & Marsh Hesperocyparis sargentii Association Riparian Shrub Hesperocyparis sargentii / Ceanothus jepsonii -Vancouverian Lowland Marsh, Wet Meadow & Arctostaphylos spp. Association Shrubland Macrogroup Pinus muricata - Pinus radiata Alliance Riparian Forest Pseudotsuga menziesii - (Notholithocarpus densiflorus - Arbutus menziesii) Alliance Acer macrophyllum - Alnus rubra Alliance Seguoia sempervirens Alliance Alnus rhombifolia Alliance Hardwood Fraxinus latifolia Alliance Acer macrophyllum Association Salix gooddingii - Salix laevigata Alliance Aesculus californica Alliance Salix lasiolepis Alliance

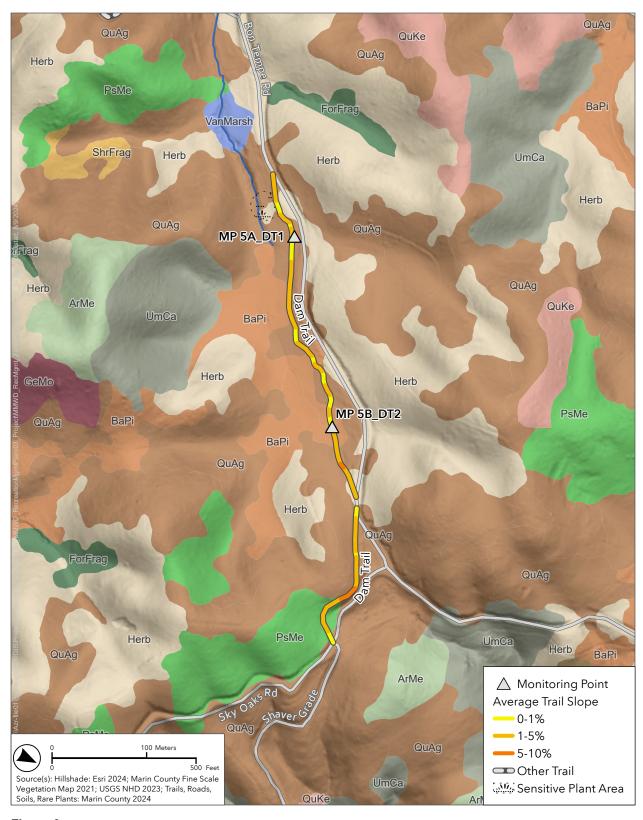






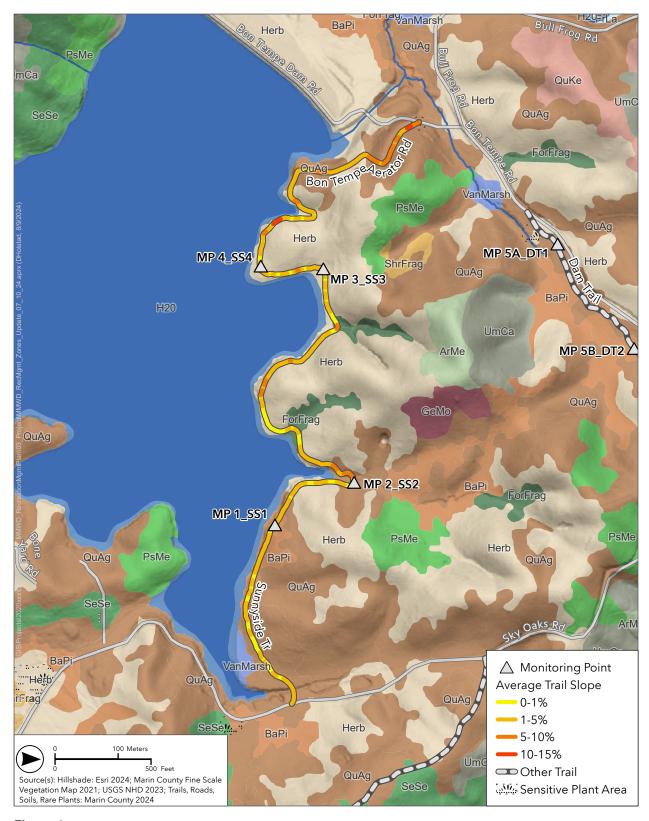
**Figure 2**Grassy Slope Rd & Grassy Slope Overlook Rd Marin Water Recreation Management Plan





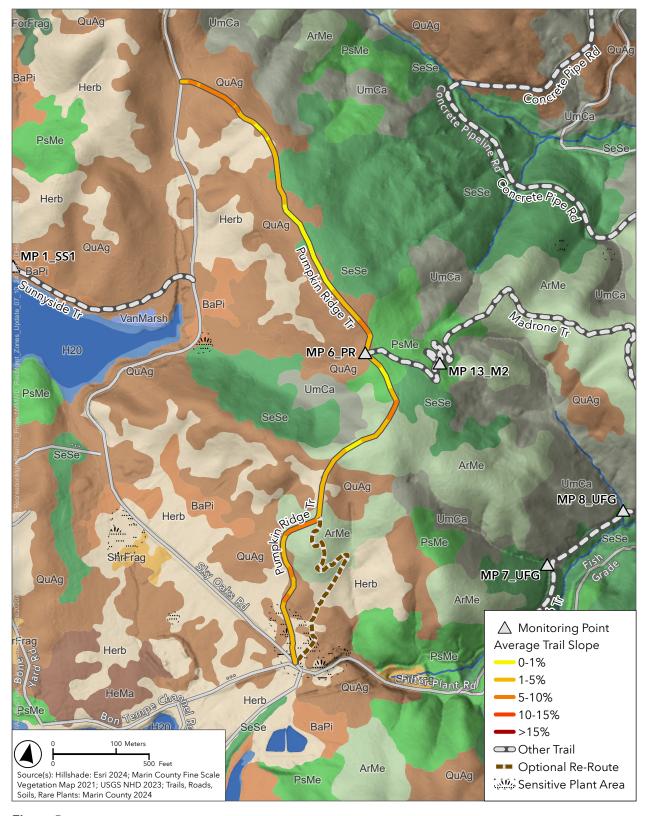
**Figure 3**Dam Trail
Marin Water Recreation Management Plan





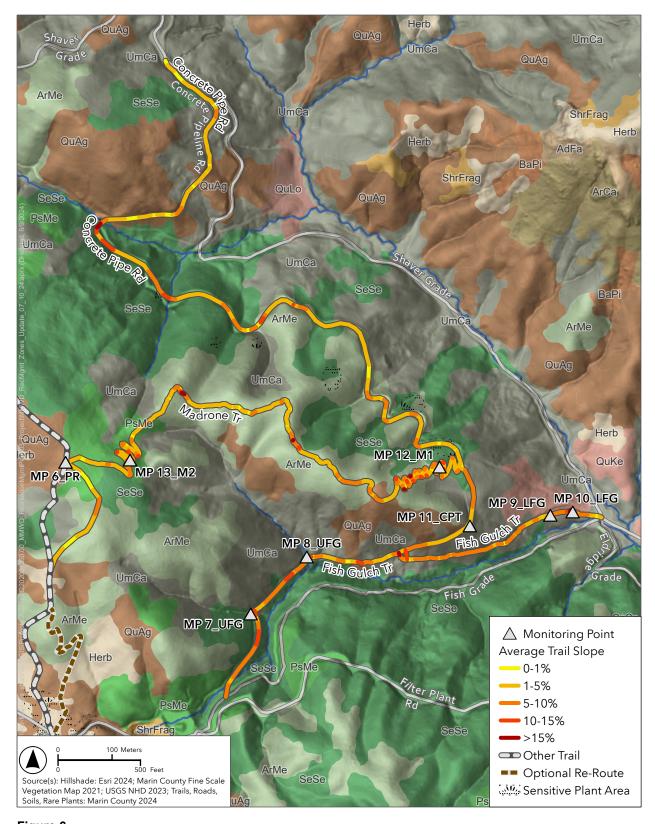
**Figure 4**Bon Tempe Aerator Rd, Bon Tempe Shoreline Tr & Sunnyside Tr Marin Water Recreation Management Plan





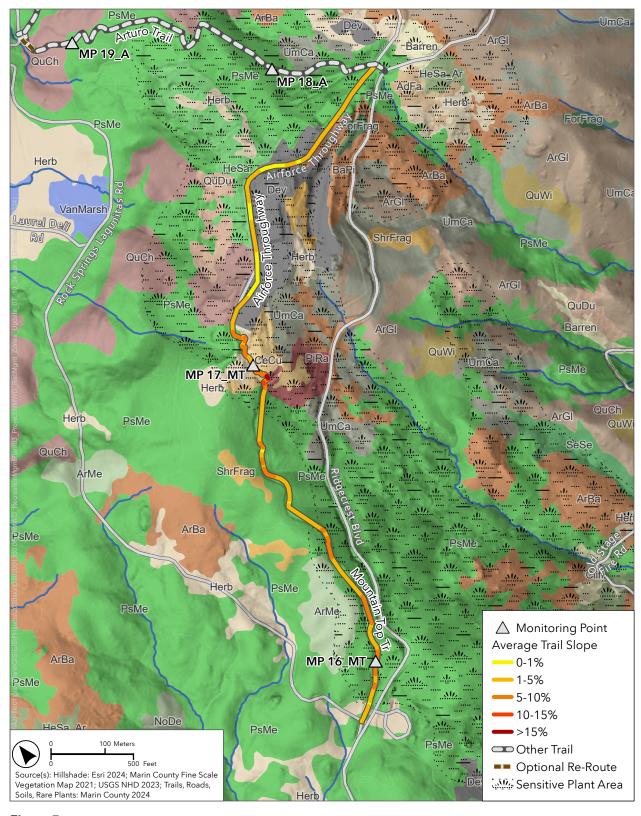
**Figure 5**Pumpkin Ridge Tr, Old Pumpkin Ridge Tr & Sky Oaks Spur Marin Water Recreation Management Plan





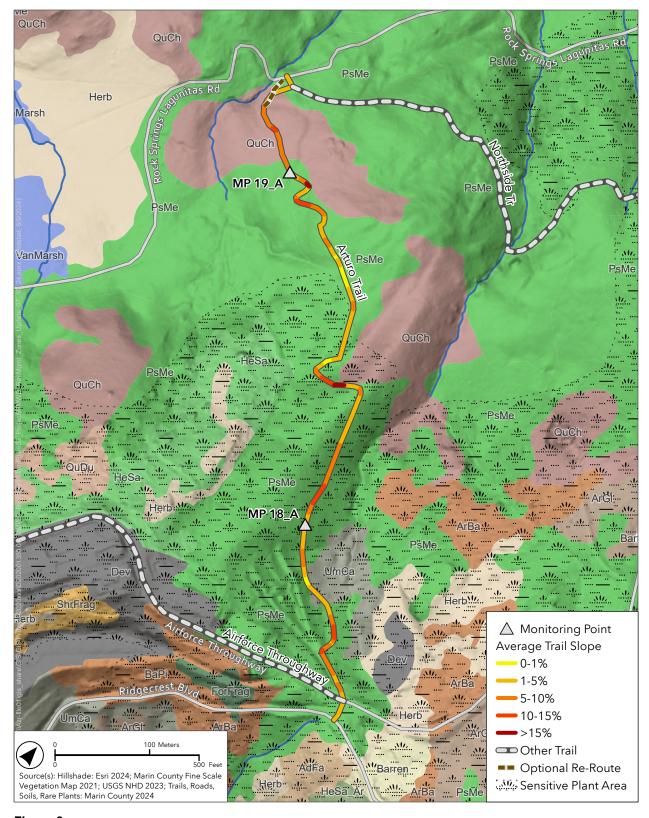
**Figure 6**Madrone Tr, Concrete Pipe Tr, Concrete Pipe Rd, Upper Fish Gulch Tr & Lower Fish Gulch Tr Marin Water Recreation Management Plan





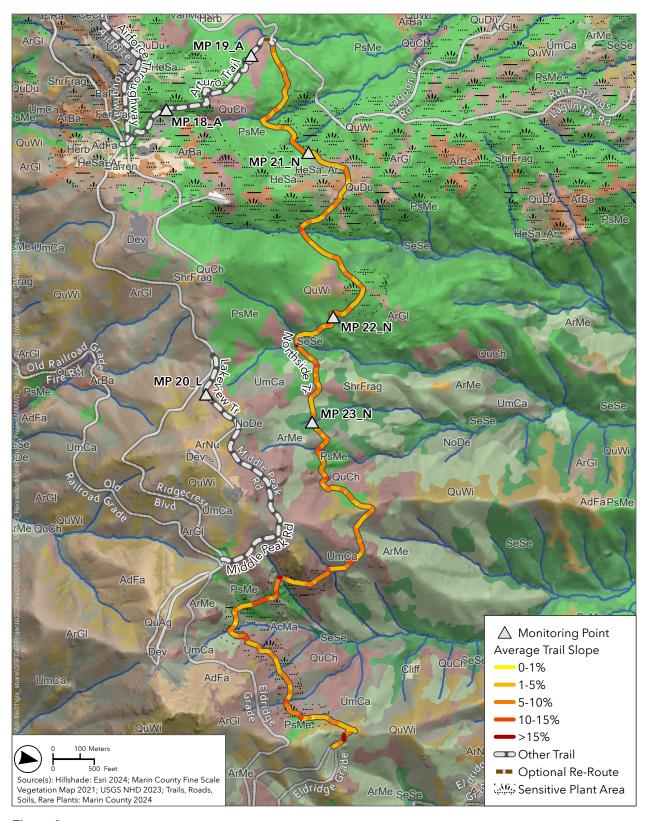
**Figure 7**Airforce Throughway & Mountain Top Tr
Marin Water Recreation Management Plan





**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



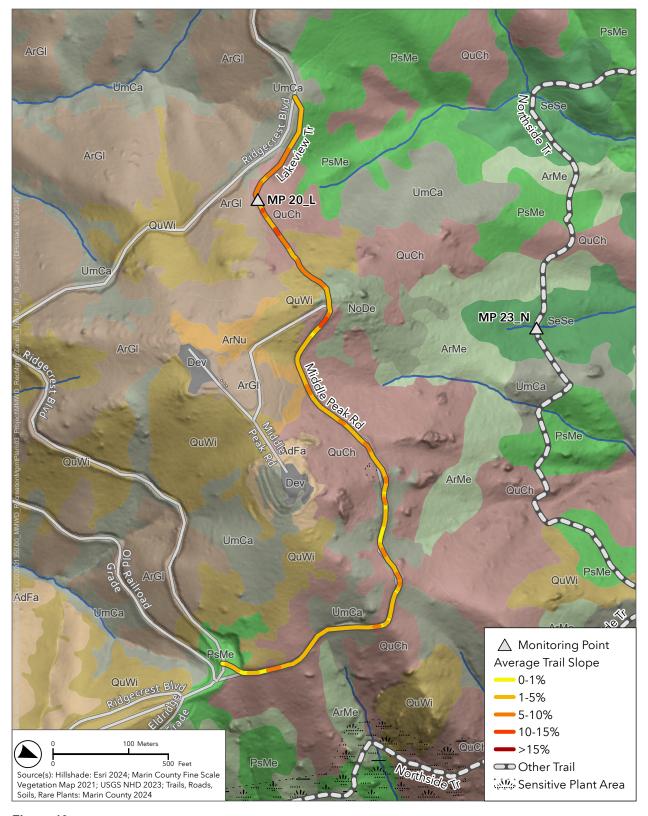


Figure 10
Middle Peak Rd & Lakeview Tr
Marin Water Recreation Management Plan





## **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 CNDDB [California Natural Diversity Database], and a wide range of botanical experts, who work together to assign a rarity ranking. All plants tracked by the CNDDB 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	Calochortus uniflorus			
plant info	bulb plant, flowers in spring, difficult to find outside of growing season			
California rare	4.2, Plants of limited distribution; fairly threatened in California			
plant rank	4.2, Flants of minited distribution, family threatened in Camornia			

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

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

common name	Tiburon buckwheat
scientific name	Eriogonum luteolum var. caninum
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	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly
plant rank	threatened in California

common name	Mt Tam manzanita
scientific name	Arctostaphylos montana ssp. montana
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	Calochortus umbellatus
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	Streptanthus glandulosus ssp. pulchellus
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 S. glandulosus found in the same habitat, the two subspecies can only be distinguished during flowering, in mid-summer.
California rare	1B.2, Plants rare, threatened, or endangered in California and elsewhere; fairly
plant rank	threatened in California

common name	Tamalpais jewel flower
scientific name	Streptanthus batrachopus
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	1B.3, Plants rare, threatened, or endangered in California and elsewhere; not very
plant rank	threatened in California

common name	California bottle brush grass
scientific name	Elymus californicus
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	Calamagrostis ophitidis
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