

## **The NatureMapping Program**

### **HABITAT AND LAND COVER DESCRIPTIONS**

1 - Unvegetated: Less than 10% vegetation cover. Excludes agricultural and, developed areas, and open water. Refers mostly to large areas of bare rock, saline flats, and permanent snow and ice fields. *Example: 110 – Talus slopes*

- 10 - Rock/Talus
- 11 - Cliffs
- 20 - Ice/Snow (permanent)
- 30 - Sand (beaches, dunes)
- 40 - Bare soil (areas after floods, forest fires, recent tilling on farms)

2 - Developed: Significant human influence. Surface development includes buildings, pavement, mining operations, etc. Excludes agricultural land and clear cuts. *Example: 235 = Developed, light, golf course*

- 0 - All levels of development from 10-100%
- 1 - Heavy: >60% surface development / <40% of vegetation
- 2 - Moderate: 30-60% surface development / ~50% vegetation
- 3 - Light: 10-30% surface development / > 50% vegetation

- 0 - All types of development
- 1 - Residential
- 2 - Industrial/Business
- 3 - Mining operations: gravel pits, quarries
- 4 - Roads
- 5 - Grass/Shrub (i.e. cemeteries, golf courses, mowed parks)
- 6 - Wooded Forests (forests/parks with mostly natural vegetation surrounded by development)

3 - Agriculture: Intensively managed fields. Does not include un-maintained range used as pasture. Hedgerows are important and should be included in the comments. *Example: 313 = Irrigated vineyards*

- 0 - Irrigated and non-irrigated fields
  - 1 - Irrigated fields
  - 2 - Non-irrigated fields
- 0 - All crop species
  - 1 - Developed/maintained pasture: seeded and regularly mown pasture.
  - 2 - Herbaceous row crops
  - 3 - Orchards/Vineyards
  - 4 - Conservation Reserves

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4 - Open water – *Example: 415 = River*

- 00 - All open water
- 10 - Fresh water
- 11 - Fresh water lakes
- 12 - Municipal ponds (including reservoirs, storm water retention)
- 13 - Channeled scabland ponds (Eastern Washington)
- 14 - Sewage ponds
- 15 - Fresh moving water (e.g. river)
- 17 - Manmade canals
- 18 - Irrigation ponds
- 19 - Lakes surrounded by development
- 20 - Salt water
- 30 - Brackish water (partially salty)

5 - Wetlands: Vegetated areas where plants are rooted in water or water saturated soil or that regularly tolerate flooding for extensive time periods. *Example: 534 = Riparian area along a stream/river with conifer trees.*

- 0 - All wetland types
- 1 - Estuarine marsh (saltwater)
- 2 - Freshwater marsh
- 3 - Riparian (rivers and streams)
- 4 - Vernal pools (pools which dry up part of the year)
- 5 - Ocean beaches (vegetated)
- 6 - Intermittent streams
  - 0 - All wetland vegetation types
  - 1 - Submerged/floating aquatic plants
  - 2 - Emergent herbs/shrubs
  - 3 - Trees - deciduous
  - 4 - Trees – conifer
  - 5 – Trees – mixed conifer/deciduous
  - 6 – Development – Heavy
  - 7 – Development – Medium
  - 8 – Development - Light

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The Non-forest and Forest classes may be the most difficult to label. Many professionals can go to the same site and disagree on the classification. Do your best and be consistent using the classes. Label the habitat based on a good sample (i.e. away from the path or edge of a forest) that best describes the habitat. Remember, vegetation is constantly growing, so classes may change within a couple of years.

6 - Non-forested classes: Grasslands, mountain meadows, un-maintained range, clear cuts, as well as young replanted forests with trees less than 15' tall and have less than 26% canopy cover. *Example: 612 = Grazed grasslands*

Certain plants are colonizers and then are eliminated as the slower growing climax vegetation become large enough to out-compete the colonizers. The colonizers and young climax vegetation are considered successional. Colonizers appear when there has been a disturbance, such as a fire, grazing or mowing.

Recently disturbed can mean disturbed yesterday, or 10 years ago. Most of undisturbed/climax vegetation is on preserves or hard to access parcels of land.

- 0 - Successional and climax vegetation
- 1 - Recently disturbed (grazed, fire)/successional
- 2 - Undisturbed/climax
  - 0 - All structure classes
  - 1 - Sparsely vegetated; 60-90% bare ground
  - 2 - Grassland, forbs; 0-10% shrub or tree cover
  - 3 - Shrub savannah; 11-25% shrub cover
  - 4 - Shrubland; >26% shrub cover
  - 5 - Tree savannah; 11-25% tree cover

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Forests: Urban areas with a lot of large trees are not forests; used the developed code.

7 - Deciduous (including hardwoods, such as Madrone which are evergreen)

8 - Deciduous/Conifer mix

9 - Conifer

*Example: 771 = Deciduous forest, intermediate in age, with an open canopy.*

Forest classes: dbh (diameter at breast height) measured 4.5' from the ground with a special tape measure. The circumference can be measured using a standard measuring tape. Take the measurement at the same height (4.5' from the ground) as you would a dbh.

The following codes are used for the Deciduous, Deciduous/Conifer mix and Conifer classes:

0 - All age/size classes

1 - Saplings (1-4" dbh (3-14" circumference), 15-30' tall)

2 - Pole (5-15" dbh (15-47" circumference), >30' tall)

3\* - Small saw (15-20" dbh (48-63" circumference))

4\* - Large saw (20-30" dbh (64-94" circumference))

5\* - Old Growth: defined primarily by structure; 2 or more layers,  
dominant trees generally > 30" dbh on the Westside of WA.

6 - Young forests; mostly sapling or pole, possibly including  
seedlings

7 - Intermediate aged forests; mostly pole or small saw, may  
include variable aged forests.

8 - Mature to 'over-mature' forests; mostly saw timber to old-growth, may  
include mature forests of smaller stunted trees, such as some  
sub-alpine forests.

To estimate canopy closure, look at the ground and estimate shaded percentage. Walk or look into the forest to estimate canopy closure. The best time to test is when the sun is overhead, about mid-day.

0 - Open and closed canopy

1 - Open; 26-60% canopy closure

2 - Closed; 60-100% canopy closure

\* - These would be **homogenous** stands (i.e., the trees would be about the same size and height).