M27C

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| **M27C** | **Coastal Western Hemlock - Sitka Spruce Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_A016\_003\_E\_G239\_027.jpg | | Map | |
| **Summary:**  Coastal coniferous forests with Gausha and Polmun. The moderately closed (average tree cover of 55%) coniferous overstory is dominated by Picsit and/or Tsuhet, both trees are usually present. The understory structure is variable, but notably lacks a dense layer of Vacovat. Gausha frequently dominates a dense shrub layer, often with prominent Rubspe, Vacala and scattered Menfer and Vacpar. With or without a shrub layer, Polmun dominates a well-developed (average 25% cover) fern layer, often with Blespi. The wettest forests in this map class often lack a dense shrub layer and instead have a well-developed herb layer dominated by Carobn and/‌or Lysame. Total plant diversity is modest, with 10 or 15 species of vascular plants common.  These coastal forests are found on west-facing gentle slopes below 100 m.  **Similar Map Classes:**   * M45 are very similar coastal conifer forests that often have a dense tall shrub layer of Vacovat. Compared to M27C, they are more likely to have Coruna, Thupli, and Vacovat, and less likely to have Athfil and Polmun. * M27I are similar conifer forests in interior valleys with a slightly more continental climate, but still within zone of occasional coastal fog belt. Compared to M27C, they are more likely to have Acecir, Psemen, Tiatri and SUPERSHRUB. Compared to M27C, they are less likely to have Gausha. * M20C are coastal forests with prominent to dominant Alnrub, more often on slopes > 11 degrees. Compared to M27C, they are more likely to have Alnrub+, Equarv+, Hermax, Samrac, BROADLEAF\_GT5, BROADLEAF\_LT5 and SUPERSHRUB. Compared to M27C, they are less likely to have Vacala and Vacpar. * M81 are coastal bogs and fens found in flatter areas where water collects. When present, conifers are stunted. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M45**

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| **M45** | **Coastal Western Hemlock - Western Red Cedar and Evergreen Huckleberry Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_A032\_003\_E.jpg | | Map | |
| **Summary:**  Coastal coniferous forests with Vacovat. The moderately closed (average tree cover of 45%) coniferous overstory is dominated by Tsuhet and/or Thupli. Picsit is sometimes co-dominant. The understory is dominated by a dense tall shrub layer of Vacovat and Gausha or a dense layer of Gausha with Blespi. Vacala is often prominent. Menfer and Vacpar are often present at low cover. Rubspe is occasionally prominent. Maidil (occasionally dominates the understory with few shrubs) and Coruna are some of the more common herbs, with Blespi present to prominent in most stands. Polmun can be present, but usually has lower cover than in M27C. Total plant diversity is low, with 10 species of vascular plants common and forests in the map class tend to have similar composition (low beta diversity).  These coastal forests are found on benches and shallow slopes below 100 m.  **Similar Map Classes:**   * M27C are very similar coastal conifer forests without prominent Vacovat, more common on slopes > 5 degrees and further from streams. Compared to M45, they are more likely to have Athfil and Polmun and less likely to have Coruna, Thupli and Vacovat. * M27I are similar conifer forests without Vacovat in interior valleys, but still within the coastal fog belt. Compared to M45, they are more likely to have Acecir, Athfil, Oxaore, Polmun, Psemen and Tiatri. Compared to M45, they are less likely to have Gausha, Lysame, Thupli and Vacovat. * M20C are coastal Alnrub forests, with a prominent deciduous component in the canopy. Compared to M45, they are more likely to have Alnrub+, Athfil, Clasib+, Dryopteris\_spp, Equarv+, Hermax, Polmun, Rubspe, Samrac, BROADLEAF\_GT5 and BROADLEAF\_LT5. Compared to M27C, they are less likely to have Coruna, Lysame, Menfer, Thupli, Vacala, Vacovat and Vacpar. * M81 are coastal bogs and fens. When present, conifers are stunted. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M27I

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| **M27I** | **Western Hemlock – Sitka Spruce and Redwood Sorrel Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\classification\_plots\CF-97\100\_1118.jpg | | Map | |
| **Summary:**  Maritime coniferous forests in interior valleys. Tsuhet is always present and usually dominant in these lowland conifer forests. Picsit is usually present to co-dominant, but can be absent (usually a function of site history). The tree canopy is usually complex with prominent conifer regeneration and several cohorts of trees. Deciduous trees (often spilling over from adjacent riparian forests) and/or Psemen can be prominent. Although shrub layer is not always dense, Acecir, Vacpar, Vacala are prominent in most stands and Rubspe is common following disturbance. The herbaceous layer is characterized by wet-mesic, shade-tolerant ferns and forbs Polmun, Oxaore, and/or Tiatri. Many other species including Achtri, Maidil, and Athfil can also be prominent. Mosses and lichens are abundant on trees, snags, down logs, and the ground surface. Just a handful of understory species are responsible for the biomass in the lush understory; training plots only had an average of 15 species of vascular plant.  These forests are most common on floodplains and along toe slopes of large west-side valleys of Olympic National Park, but are also widely scattered on well-drained slopes only a few hundred meters inland of the coast. Forests receive at least intermittent moisture subsidies from coastal fog, and soils are typically moist but not saturated. These forests can occur on all aspects up to 450m, but the geography of the west side drainages finds them more common on at lower elevations and on west and south facing slopes.  **Similar Map Classes:**   * M27C are very similar conifer forests found exclusively on the outer coast. Compared to M27I, they are more likely to have Gausha and less likely to have Acecir, Psemen, Tiatri and SUPERSHRUB. * M44 are similar wet-mesic forests, but not restricted to the coastal fog belt. Compared to M27I, they are more likely to have Gooobl, Linbor, Mahner, Maiste, Oplhor, Thupli, Triova and SUBSHRUB. Compared to M27I, they are less likely to have Maidil, Oxaore and Picsit. * M45 are conifer forests that often have Vacovat on the outer coast. Compared to M27I, they are more likely to have Gausha, Lysame, Thupli and Vacovat. Compared to M27I, they are less likely to have Acecir, Athfil, Oxaore, Polmun, Psemen and Tiatri. * M07W are montane wet-mesic forests with prominent Abiama. Compared to M27I, they are more likely to have Abiama, Oplhor, Strlan and SUBSHRUB. Compared to M27I, they are less likely to have Maidil, Oxaore and Picsit. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M44**

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| **M44** | **Mesic Western Hemlock – Douglas-fir Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\classification\_plots\Plot 12-019 class 503\12-019c\12-019c 1.jpg | | Map | |
| **Summary:**  Mesic coniferous forests. The coniferous canopy is dominated by any combination of Tsuhet, Psemen, and Thupli. Abigra is occasionally co-dominant. Alnrub and Acemac (often spilling over from adjacent riparian forests) can be prominent. Abiama can be present at low cover, but is never prominent or contiguous with midslope Abiama on adjacent valley walls. The tree canopy is usually complex with prominent conifer regeneration and several cohorts of trees. Vacala, Oplhor, and/or Rubspe make up a prominent lush shrub layer in about half of the stands in the map class. Acecir and Vacpar are often present. The herbaceous layer is characterized by a variety of drought-intolerant ferns and forbs: Tiatri, Polmun, Cliuni, Athfil, Gymdry, Galium\_spp, Gooobl, Triova, Maiste, Achtri, Blespi, Disporum\_spp, Dryopteris\_spp, Viogla+, and Coruna. Mosses are abundant on trees, snags, down logs, and the ground surface.  Generally occurs on valley bottoms or in moist water-receiving areas on north-facing slopes, flats or otherwise protected sites below 1000 m. Soils remain moist year-round but are not saturated.  **Similar Map Classes:**   * M07W are very similar wet-mesic coniferous forests with prominent Abiama. Compared to M44, they are more likely to have Abiama and Rubped. * M27I are similar maritime wet-mesic coniferous forests within the zone of coastal fog influence at Olympic National Park. Compared to M44, they are more likely to have Maidil, Oxaore and Picsit. Compared to M44, they are less likely to have Gooobl, Linbor, Mahner, Maiste, Oplhor, Thupli, Triova and SUBSHRUB. * M42P are upland conifer forests with a similar overstory, but a variable, less lush/wet-mesic understory. Compared to M44, they are less likely to have Athfil, Blespi, Cliuni, Disporum\_spp, Gymdry, Maiste, Oplhor, Rubspe, Tiatri and Vacala. * M42G are upland conifer forests with a similar overstory, but a less lush/mesic understory with prominent Gausha. Compared to M44, they are less likely to have Acecir, Athfil, Blespi, Cliuni, Disporum\_spp, Galium\_spp, Gymdry, Maiste, Oplhor, Polmun, Rubspe, Tiatri, FORB and FERN. * M27C and M45 are conifer forests found along the coast at OLYM. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M42P

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| **M42P** | **Western Hemlock – Douglas-fir Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_598\_0053\_S.JPG | | Map | |
| **Summary:**  The generally closed overstory canopy is dominated by Psemen and Tsuhet. Thupli is often prominent. Abiama is sometimes present as regeneration, but is rarely prominent. Conifer regeneration ranges from absent to abundant. Acecir is often prominent. Understory vegetation can be depauperate or moderately dense. Gausha is absent or occasionally prominent, but never dense. Mahner is the most common shrub and Vacpar is usually present at low cover. Vacmem, Paxmyr, and Rosa\_sp can be prominent. A modest low shrub and herb layer includes a variety of herbaceous species, often Polmun (average cover of 7%), Linbor, Chimaphila umbellate, and Chimen; and occasionally Gooobl, Pyrola\_sp spp., Achtri, Trilat, or Coruna. These forests can be fairly young successional forests with closed canopies of even-aged stems or older forests with several age-classes and canopy openings.  These low elevation (400 – 1200 m) forests are common and extensive on valley walls and terraces of all slopes and aspects. They are common on well-drained mesic sites and are less common on the east side of the Cascade crest.  **Similar Map Classes:**   * M42G are very similar conifer forests with prominent Gausha. Compared to M42P, they are more likely to have Gausha and SHRUB, and less likely to have Paxmyr and Vacmem. * M07D are similar conifer forests with prominent Abiama. Compared to M42P, they are more likely to have Abiama and Vacala and less likely to have Polmun. * M44 are similar wet-mesic conifer forests. Compared to M42P, they are more likely to have Athfil, Blespi, Cliuni, Disporum\_spp, Gymdry, Maiste, Oplhor, Rubspe, Tiatri and Vacala. * M43O are drier conifer forests in the northwest part of Olympic National Park. Compared to M42P, they are more likely to have Acemac, Adebic, Arbmen, Brovul+, Fesocc+, Galium\_spp, Holdis, Osmorhiza\_spp, Rosa\_spp, Symalb, Symmol, BROADLEAF\_GT5 and GRASS. Compared to M42P, they are less likely to have Paxmyr, Thupli, Tsuhet and Vacmem. * M43N are drier conifer forests at North Cascades National Park. Compared to M42P, they are more likely to have Acegla, Amealn, Betpap, Calrub, Corcor, Fravir, Holdis, Loncil, Mahaqu, Prunus\_spp, Rosa\_spp, Spibet, BROADLEAF\_GT5 and GRASS. Compared to M42P, they are less likely to have Abiama, Achtri, Gausha, Polmun, Tsuhet, Vacpar and FERN. * M43M are montane conifer forests with Abiama at Mount Rainier National Park. Compared to M42P, they are more likely to have Abiama, Abipro, Cupnoo, Menfer and Xerten. Compared to M42P, they are less likely to have Mahner, Polmun, Thupli and FERN. * M46S are montane conifer forests with prominent Abiama. Compared to M42P, they are more likely to have Abiama, Cupnoo, Menfer, Rubped, Tsumer, Vacala and SHRUB. Compared to M42P, they are less likely to have Acecir, Gausha, Linbor, Mahner, Polmun, Psemen, Thupli and Vacpar. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M42G**

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| **M42G** | **Western Hemlock – Douglas-fir and Salal Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2011\OLYM\_662\_4061\_E.jpg | | Map | |
| **Summary:**  Tsuhet and Psemen and Salal forests. The generally closed canopy is dominated by Psemen and Tsuhet. Thupli is often prominent. Conifer regeneration ranges from absent to abundant. Abiama is sometimes present, but is rarely prominent. Gausha is almost always present and usually dominates a dense shrub (average cover of Gausha is 41%). Mahner is usually prominent and can co-dominate. Rhomac and Vacala are sometimes prominent and Vacpar is usually present at low cover. Linbor, Chiumb, and Chimen are common. The herbaceous layer is highly variable. The following species each occur in about one-third of documented stands: Gooobl, Pteaqu, Listera\_sp, Achtri, and Polmun. The diagnostic characteristic of this map class is an overstory of both Psemen and Tsuhet, with an understory that is neither wet nor dry throughout the growing season. These forests can be fairly young successional forests and sometimes have some amount of blowdown or other minor disturbance.  These low elevation (400-1200 m) forests are common and extensive on valley walls and terraces of all slopes and aspects. These forests are common on well-drained wet-mesic sites and are less common on the east side of the Cascade crest.  **Similar Map Classes:**   * M42P are very similar conifer forests without prominent Gausha. Compared to M42G, they are more likely to have Paxmyr and Vacmem and less likely to have Gausha and SHRUB. * M07D are similar conifer forests with prominent Abiama. Compared to M42G, they are more likely to have Abiama, Cliuni, Ortsec and Vacala and less likely to have Gausha and Pteaqu. * M44 are wet-mesic conifer forests. Compared to M42G, they are more likely to have Acecir, Athfil, Blespi, Cliuni, Disporum\_spp, Galium\_spp, Gymdry, Maiste, Oplhor, Polmun, Rubspe, Tiatri, FORB and FERN. * M43O are dry or dry-mesic conifer forests at OLYM. Compared to M42G, they are more likely to have Abigra, Acemac, Adebic, Brovul+, Galium\_spp, Holdis, Polmun, Rosa\_spp, Symalb, Trilat, BROADLEAF\_GT5, GRASS and FERN. * M43N are drier conifer forests at NOCA. Compared to M42G, they are more likely to have Acecir, Acegla, Acemac, Amealn, Betpap, Calrub, Corcor, Fravir, Holdis, Loncil, Mahaqu, Paxmyr, Prunus\_spp, Spibet, Trilat, BROADLEAF\_GT5, SUPERSHRUB and GRASS. Compared to M42G, they are less likely to have Gausha, Tsuhet and Vacpar. * M43M are montane conifer forests with Abiama at MORA. Compared to M42G, they are more likely to have Abiama, Abipro, Cupnoo, Gauova, Menfer, Rublas, Vacmem, Xerten and FORB. Compared to M42G, they are less likely to have Gausha, Mahner, Rosa\_spp and Thupli. * M46S are montane conifer forests with prominent Abiama. Compared to M42G, they are more likely to have Abiama, Cliuni, Cupnoo, Erymon+, Menfer, Ortsec, Rubped, Sorsit, Tiatri, Tsumer, Vacala and Vacmem. Compared to M42G, they are less likely to have Gausha, Mahner, Psemen, Rosa\_spp, Thupli and Vacpar. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M43O

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| **M43O** | **Olympic Mountains Dry Douglas-fir Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_528\_1156\_E.jpg | | Map | |
| **Summary:**  Dry or dry-mesic Psemen forests. Psemen dominates the canopy. Arbmen, Tsuhet, Abigra, Taxbre, and/or Acemac are often scattered in the canopy or understory. Mahner is always present in the understory, and often co-dominant with Polmun. Rosa\_spp, and Holdis are commonly scattered at low cover, while Gausha is sometimes codominant. Amealn and Acegla can be scattered as well. The understory is moderately diverse, with the following species most common: Achtri, Trilat, Fesocc+, Linbor, Galium\_spp, Chiumb, Adebic, Gooobl, Brovul+, Ruburs, Camsco, Hiealb, and Osmorhiza\_spp.  Dry or dry-mesic forests at Olympic National Park, most common on south-facing slopes around Lake Crescent and the Elwha River. They occur between 200 and 1200 m on well-drained moderate to steep slopes.  **Similar Map Classes:**   * M42G are very similar upland conifer forests. Compared to M43O, they are less likely to have Abigra, Acemac, Adebic, Brovul+, Galium\_spp, Holdis, Polmun, Rosa\_spp, Symalb, Trilat, BROADLEAF\_GT5, GRASS and FERN. * M42P are similar upland conifer forests. Compared to M43O, they are more likely to have Paxmyr, Thupli, Tsuhet and Vacmem. Compared to M43O, they are less likely to have Acemac, Adebic, Brovul+, Fesocc+, Galium\_spp, Holdis, Osmorhiza\_spp, Rosa\_spp, Symalb, Symmol, BROADLEAF\_GT5 and GRASS. * M20I are upland forests with a prominent to dominant deciduous component. Compared to M43O, they are more likely to have Acecir, Alnrub+, Athfil, Ciralp, Clasib+, Rubspe, Thupli and Tolmen. Compared to M43O, they are less likely to have Amealn, Camsco, Chiumb, Fesocc+, Gausha, Gooobl, Hiealb, Holdis, Linbor, Mahner, Psemen, Rosa\_spp, Symmol and SUBSHRUB. * M07D are similar montane conifer forests with prominent Abiama. Compared to M43O, they are more likely to have Abiama, Thupli and Vacmem. Compared to M43O, they are less likely to have Abigra, Acemac, Adebic, Amealn, Brovul+, Fesocc+, Galium\_spp, Gausha, Holdis, Mahner, Polmun, Rosa\_spp, Ruburs, Symalb, Trilat, BROADLEAF\_GT5, GRASS and FERN. * M17O are subalpine conifer forests. Compared to M43O, they are more likely to have Abilas, Achmil, Juncom, Lommar, Luparc, Paxmyr, Phldif, Pincon, Polpul, SEDGE and RUSH. Compared to M43O, they are less likely to have Abigra, Acemac, Achtri, Adebic, Brovul+, Camsco, Fesocc+, Galium\_spp, Gausha, Gooobl, Holdis, Linbor, Mahner, MOSS\_spp, Osmorhiza\_spp, Polmun, Psemen, Rosa\_spp, Ruburs, Symalb, Symmol, Trilat, Tsuhet, BROADLEAF\_GT5, BROADLEAF\_LT5, SUPERSHRUB, SHRUB, SUBSHRUB and FERN. * M20I forests have a prominent deciduous component and a history of disturbance. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M36**

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| **M36** | **Douglas-fir – Ponderosa Pine Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_061\_0016\_E.JPG | | Map | |
| **Summary:**  Pinpon and Psemen Woodlands. The open canopy is dominated by open-grown Psemen, usually with prominent Pinpon. Acemac can be prominent, but is never co-dominant. The understory is either open and dominated by graminoids (Calrub or Psespi) or covered with a dense shrub and herb layer that includes Holdis, Symalb, and Mahaqu. Across the map class, the most common understory plants are Paxmyr, Amealn, Ceavel, Rosgym, Spibet, and Arcuva+.  These forests are found on lower slopes and terraces in the hottest and driest parts of North Cascades National Park (370 – 1250m).  **Similar Map Classes:**   * M43N are similar forests and woodlands without Pinpon. Compared to M36, they are more likely to have Acecir, Acegla, Betpap, Chiumb, Corcor, Fravir, Gooobl, Linbor, Loncil, Mahner, MOSS\_spp, Prunus\_spp, Thupli, Trilat, Tsuhet, BROADLEAF\_GT5 and SUPERSHRUB. Compared to M36, they are less likely to have Antrac+, Arcuva+, Calrub, Ceavel, Chaang, Elymus\_spp, Hiesco+, Penser+, Pinpon, Psespi, Salsco and GRASS. * M35 are forests with Pincon. Compared to M36, they are more likely to have Chiumb, Gausha, LICHEN\_spp, Pincon, Pinmon and Tsuhet. Compared to M36, they are less likely to have Acemac, Antrac+, Calrub, Ceavel, Chaang, Elymus\_spp, Hiesco+, Holdis, Mahaqu, Pinpon, Psespi, BROADLEAF\_LT5 and GRASS. * M33 are montane conifer woodlands. Compared to M36, they are more likely to have Abiama, Abilas, Chiumb, Eucled+, Gooobl, Lombra+, Mairac, Ortsec, Pedrac, Piceng, Pinmon, Rublas, Sorsco and Vacmem. Compared to M36, they are less likely to have Acemac, Achmil, Elymus\_spp, Hiesco+, Holdis, Mahaqu, Penser+, Pinpon, Psespi and BROADLEAF\_LT5. * M19 forests have prominent Acemac. * M66 forest openings M51 shrublands lack prominent live conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M43N

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| **M43N** | **North Cascades Dry Douglas-fir Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_423\_CF816\_W.JPG | | Map | |
| **Summary:**  Dry or dry-mesic Psemen forests. The canopy is always dominated by Psemen. Thupli and Betpap occasionally co-dominate and Acemac and Tsuhet can be prominent. These are often second growth forests, recovering from fire or other disturbance in the early half of the 20th century. Acecir usually dominates a moderate to dense tall shrub layer above a dense layer of Mahner, although both can be absent on drier sites with Holdis and Paxmyr. A diverse assortment of shrubs is common, with Amealn, Acegla, Corcor, and Prunus\_spp in the upper layer and Rosa\_spp, Mahaqu, Vacmem, Rubpar and Symalb below. The diverse herb layer usually includes Trilat and Gooobl as well as several of the following species: Spibet, Hiealb, Calrub, Chiumb, Chimen, Fesocc+, Fravir, Ortsec, Moemac, Disporum\_spp, Loncil, and Linbor.  These forests generally occur along and east of the cascade crest, with south facing aspects more common near the cascade crest. They occur between 450 and 1000 m on well-drained moderate to steep slopes.  **Similar Map Classes:**   * M42P are more mesic forests. Compared to M43N, they are more likely to have Abiama, Achtri, Gausha, Polmun, Tsuhet, Vacpar and FERN. Compared to M43N, they are less likely to have Acegla, Amealn, Betpap, Calrub, Corcor, Fravir, Holdis, Loncil, Mahaqu, Prunus\_spp, Rosa\_spp, Spibet, BROADLEAF\_GT5 and GRASS. * M42G are more mesic forests. Compared to M43N, they are more likely to have Gausha, Tsuhet and Vacpar. Compared to M43N, they are less likely to have Acecir, Acegla, Acemac, Amealn, Betpap, Calrub, Corcor, Fravir, Holdis, Loncil, Mahaqu, Paxmyr, Prunus\_spp, Spibet, Trilat, BROADLEAF\_GT5, SUPERSHRUB and GRASS. * M44 are wet-mesic forests. Compared to M43N, they are more likely to have Abiama, Achtri, Athfil, Blespi, Cliuni, Galium\_spp, Gymdry, Maiste, Oplhor, Polmun, Rubspe, Tiatri, Triova, Tsuhet, Vacala, Vacpar and FERN. Compared to M43N they are less likely to have Acegla, Amealn, Betpap, Calrub, Chiumb, Corcor, Fesocc+, Fravir, Hiealb, Holdis, Loncil, Mahaqu, Mahner, Prunus\_spp, Rosa\_spp, Spibet and GRASS. * M33 woodlands have prominent Abiama or Abilas. * M36 woodlands and forests usually have prominent Pinpon. * M35 woodlands and forests usually have prominent Pincon. * M19 forests have prominent Acemac. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M07W**

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| --- | --- | --- | --- |
| **M07W** | **Mesic Silver Fir – Western Hemlock Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_502\_0900\_E.jpg | | Map | |
| **Summary:**  Wet-mesic Abiama forests. Moist conifer forests dominated by Abiama and Tsuhet, sometimes with Psemen and/or Thupli. At lower elevations, Abiama may be mainly present in the understory. Tsumer and Abilas are not present in significant amounts. Understory cover varies from relatively sparse to dense, commonly with Vacala, Rubspe, Oplhor and/or Vacpar. Tiatri, Rubped, and Cliuni are most common in the lush and well-developed herb layer (average cover of 23 percent), along with Athfil, Gymdry, Blespi and Coruna. Subalpine/montane species (e.g. Valsit) are rarely more than present.  These forests occur along streams, on gentle to steep toe slopes and valley walls on all aspects from 400 – 1250m within the winter snow line, where rain is common on the snow. Patches are contiguous with drier Tsuhet/Psemen forests and higher subalpine forests with Tsumer or Abilas. Soils mostly have well-developed organic layers and remain moist year-round but are rarely saturated, except in small inclusions.  **Similar Map Classes:**   * M44 are very similar forests without prominent Abiama. Compared to M07W, they are less likely to have Abiama and Rubped. * M07D are similar drier forests with sometimes depauperate understories. Compared to M07W, they are more likely to have Chiumb and Mahner, and less likely to have Athfil, Blespi, Gymdry, Oplhor, Polmun, Rubped, Rubspe, Tiatri and FERN. * M46S are higher and/or drier forests. Compared to M07W, they are more likely to have Cupnoo, Erymon+, Piceng, Ortsec, and Vacmem. Compared to M07W, they are less likely to have Athfil, Coruna, Gymdry, Oplhor, Polmun, Rubspe, Tsuhet, Thupli, Tiatri, Vacpar and FERN. * M27I are maritime influenced forests at lower elevations in Olympic National Park. Compared to M07W, they are less likely to have Abiama, Oplhor, Strlan and SUBSHRUB and more likely to have Maidil and Oxaore. M07W never has Picsit. * M43M are drier forests at MORA. * M42P and M42G are lower elevation and drier forests without prominent Abiama. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M07D

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| --- | --- | --- | --- |
| **M07D** | **Silver Fir – Western Hemlock Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2011\OLYM\_241\_0178\_E.JPG | | Map | |
| **Summary:** Abiama forests on valley walls. Conifer forests dominated by Abiama and Tsuhet, often with some Psemen and/or Thupli. At lower elevations, Abiama may be mainly present in the understory. Tsumer and Abilas are not present in significant amounts. Understory cover varies from depauperate to moderately dense, often with Vacala and/or Vacpar. Linbor and Ortsec are most common in the sparse herb layer (average cover of 8 percent), other common associates are Chiumb, Chimen, Gooobl, Cliuni and Coruna. Subalpine/montane species (e.g. Valsit) are rarely more than present.  These forests occur on gentle to steep valley walls on all aspects from 600 – 1333m within the winter snow line, where rain is common on the snow. Stands are contiguous with lower Tsuhet and/or Psemen and/or higher subalpine forests with Tsumer or Abilas. Soils can be rocky or rich with well-developed organic layers.  **Similar Map Classes:**   * M42P are similar conifer forests without prominent Abiama. Compared to M07D, they are more likely to have Polmun and less likely to have Abiama and Vacala. * M07W are similar more wet-mesic forests with similar overstories. Compared to M07D, they are more likely to have Athfil, Blespi, Gymdry, Oplhor, Polmun, Rubped, Rubspe, Tiatri and FERN. Compared to M07D, they are less likely to have Chiumb and Mahner. * M46S are montane forests that sometimes have prominent Tsumer. Compared to M07D, they are higher and more likely to have Erymon+, Menfer, Rubped, Tsumer and Vacmem. Compared to M07D they are less likely to have Mahner, Thupli and Vacpar. * M44 forests are are wet-mesic forests that lack prominent Abiama. Compared to M07D, they are more likely to have Acecir, Athfil, Blespi, Disporum\_spp, Galium\_spp, Gymdry, Oplhor, Polmun, Rubspe, Tiatri, BROADLEAF\_GT5, SUPERSHRUB and FERN. * M27I are maritime influenced forests at lower elevations in Olympic National Park. * M46D are montane conifer forests that are more likely to have Tsumer and a dense ericaceous shrub layer. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M33**

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| --- | --- | --- | --- |
| **M33** | **Douglas-fir – Subalpine Fir Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_114\_0012\_N.JPG | | Map | |
| **Summary:** Mid-elevation dry or dry-mesic conifer forests and woodlands. The open (average cover 35%), short canopy is dominated by Psemen, often with Abilas prominent to co-dominant. Trees are generally well-spaced rather than clumped. Pinmon, Abiama, and Piceng can also occur, usually at low cover. Paxmyr is always present in a well-developed shrub layer typically dominated by Vacmem with scattered Sorsco, Salsco, and/or Amealn. The herb layer is variable, featuring a diverse assortment of perennial forbs and grasses. Calrub is typically prominent. Gooobl, Hiealb, and Moemac are commonly present at low cover. Understory diversity is high, with an average of 27 species recorded in training plots.  These forests and woodlands are generally found east of the cascade crest on moderate to steep midslopes between 700–1600m. They can occur on dry or dry-mesic sites of all aspects, but are most common on west-facing slopes.  **Similar Map Classes:**   * M43N are lower elevation Psemen forests that lack Abiama or Abilas. Compared to M33, they are more likely to have Acecir, Acemac, Betpap, Corcor, Fravir, Holdis, Loncil, Mahaqu, Mahner, MOSS\_spp, Rosa\_spp, Thupli, Trilat, Tsuhet and BROADLEAF\_GT5. Compared to M33, they are less likely to have Chaang, Eucled+, Hiesco+, Lombra+, Luparc, Mairac, Pedrac, Piceng, Pinmon, Rublas, Salsco, Sorsco and Vacmem. * M35 are Pincon forests. Compared to M33, they are more likely to have Arcuva+, Gausha, LICHEN\_spp, MOSS\_spp, Pincon, Racomitrium\_spp and TsuhetCompared to M33, they are less likely to have Abiama, Abilas, Acegla, Arncor, Chaang, Eucled+, Mairac, Ortsec, Pedrac, Piceng, Rublas and Sorsco. * M36 forests often have Pinpon. Compared to M33, they are more likely to have Acemac, Achmil, Elymus\_spp, Hiesco+, Holdis, Mahaqu, Penser+, Pinpon, Psespi and BROADLEAF\_LT5. Compared to M33, they are less likely to have Abiama, Abilas, Chiumb, Eucled+, Gooobl, Lombra+, Mairac, Ortsec, Pedrac, Piceng, Pinmon, Rublas, Sorsco and Vacmem. * M06 woodlands and forests are more wet-mesic and occur at all parks. Compared to M33, they are more likely to have Abiama, Arnlat+, Cupnoo, Luparc, Luzgla+, Polpul, Rhoalb, Sorsit, Tsumer, Vacdel, Valsit, Vervir and RUSH. Compared to M33, they are less likely to have Acegla, Amealn, Arcuva+, Calrub, Chiumb, Hiesco+, Pinmon, Psemen, Salsco, Sorsco and Spibet. * M17N are subalpine woodlands with Pinalb. * M66 forest openings and M51 shrublands lack prominent live conifers | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M35

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| --- | --- | --- | --- |
| **M35** | **Lodgepole Pine – Douglas-fir Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_388\_0750\_N.JPG | | Map | |
| **Summary:**  Pincon woodlands. These stands tend to have short, open (average 34% cover) canopies of evenly spaced, even-sized Pincon and Psemen. Occasionally one or the other is absent. Pinmon or Tsuhet are common, but rarely prominent. Jackstraw Pincon can obstruct travel, a result of recent mortality. Gausha dominates a patchy to dense shrub layer, but can be entirely absent in drier stands. Arcuva+ and Paxmyr are also common understory components, and at NOCA, so are Vacmem, Spibet, Amealn, and Salsco. The herb layer is sparse, with Hiealb, Chiumb and scattered graminoids the most common associates. Exposed bedrock and lichens are common.  These forests are found at middle elevations (475 – 1350 m) in climatic transitions zones, along and east of the cascade crest at NOCA and within the rain-shadow at OLYM. At MORA, these forests are found in floodplains on well-drained glacial outwash and can lack Pincon. At NOCA and OLYM, these forests are found on midslopes, bedrock benches or along dry or dry-mesic ridgelines, usually with shallow to moderate slopes.  **Similar Map Classes:**   * M42G forests lack prominent Pincon. Compared to M535, they are more likely to have Acecir, Chimen, Mahner, Thupli and Tsuhet. Compared to M35, they are less likely to have Amealn, Arcuva+, Calrub, LICHEN\_spp, Paxmyr, Pincon, Racomitrium\_spp, Salsco, Spibet, Vacmem and GRASS. * M43N forests lack prominent Pincon. Compared to M35, they are more likely to have Acecir, Acegla, Acemac, Betpap, Corcor, Holdis, Loncil, Mahner, Thupli, Trilat, BROADLEAF\_GT5 and SUPERSHRUB. Compared to M35, they are less likely to have Arcuva+, Gausha, Pincon, Pinmon, Racomitrium\_spp, Salsco and Vacmem. * M36 forests lack prominent Pincon. Compared to M35, they are more likely to have Acemac, Antrac+, Calrub, Ceavel, Chaang, Elymus\_spp, Hiesco+, Holdis, Mahaqu, Pinpon, Psespi, BROADLEAF\_LT5 and GRASS. Compared to M35, they are less likely to have Chiumb, Gausha, LICHEN\_spp, Pincon, Pinmon and Tsuhet. * M66 forest openings and M51 shrublands lack prominent live conifers * M19 forests have prominent Acemac. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M43M**

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| --- | --- | --- | --- |
| **M43M** | **Dry Silver Fir and Beargrass Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2008\J\_2008\_v\J08-2856\100\_2652.jpg | | Map | |
| **Summary:**  Dry to mesic Abiama and Psemen Forests. The canopy is typically closed but not too dense, some light usually reaches the understory. Abiama is always present and often co-dominant with Psemen, Tsuhet, Cupnoo, and/or Abipro. Most other conifers can occur but broadleaf trees are always absent. The shrub layer varies from sparse to dense usually with Vacmem present to prominent. Vacala is often present and Menfer or Vacpar can be scattered at low cover. The low shrub layer is highly variable. Xerten usually dominates (average 22% cover) the herb layer, but can be absent entirely. Gooobl, Ortsec, and Rublas can also be scattered. The following species each occur in about one-third of documented stands: Linbor, Gauova, Chiumb, Vacsco, Chimen, and Paxmyr.  At middle elevations (975 – 1600 m), on moderate to very steep mid to upper slopes and ridgetops with dry to mesic, shallow, and/or rocky soils and southerly aspects. These sites often have evidence of past fires.  **Similar Map Classes:**   * M07D are very similar montane forests. Compared to M43M, they are more likely to have Thupli and Vacpar and less likely to have Cupnoo and Xerten. * M46S are similar conifer forests. Compared to M43M, they are more likely to have Erymon+, Rubped, Sorsit, Tsumer and Vacala. Compared to M43M, they are less likely to have Abipro and Xerten. * M07W are wet-mesic forests. Compared to M43M, they are more likely to have Achtri, Athfil, Blespi, Cliuni, Coruna, Gymdry, Oplhor, Polmun, Rubped, Rubspe, Thupli, Tiatri, Vacala and FERN. Compared to M43M, they are less likely to have Abipro, Chiumb, Cupnoo, Gauova, Vacmem and Xerten. * M46D are montane conifer forests. Compared to M43M, they are more likely to have Rhoalb, Rublas, Rubped, Sorsit, Tsumer and Valsit. Compared to M43M, they are less likely to have Abipro, Chiumb, Gauova, Linbor, Psemen, Tsuhet, Vacpar and Xerten. * M42G, M42P, and M44 are lower elevation conifer forests without prominent Abiama. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M46S

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| --- | --- | --- | --- |
| **M46S** | **Silver Fir – Mountain Hemlock Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_508\_0622\_W.JPG | | Map | |
| **Summary:**  Abiama, Tsuhet, and Tsumer forest. Abiama is always at least prominent in the canopy, usually co-dominating with Cupnoo, Tsuhet and/or Tsumer. Psemen can also be prominent. Trees are evenly spaced rather than clumped and Phyemp is absent or low in cover. Vacmem and/or Vacala dominate the variably dense shrub layer, sometimes with scattered Menfer or Sorsit. These forests have relatively low diversity at the patch scale (average of 15 species of vascular plant), but species composition is variable across the map class, with species common at lower (e.g. Vacpar, Thupli) and higher elevations (e.g. Vervir, Alnvir) both possible. Rublas, Rubped, Ortsec and/or Gooobl are common in herbaceous layer, sometimes with Cliuni, Tiatri, Erymon+, and Blespi. Montane, east-side riparian forests in this map class often have very lush understories and/or prominent Piceng.  The map class occurs on valley walls and in montane drainages between 900 and 1550 m on all slopes and aspects. The lowest elevation occurrences can be associated with cold air drainage.  **Similar Map Classes:**   * M46D are very similar conifer forests. Compared to M46S, they are more likely to have Abilas and Rhoalb and less likely to have Tsuhet and Vacala. * M07D are similar conifer forests. Compared to M46S, they are more likely to have Mahner, Thupli and Vacpar. Compared to M46S, they are less likely to have Erymon+, Menfer, Rubped, Tsumer and Vacmem. * M43M are similar montane forests at MORA. Compared to M46S they are more likely to have Abipro and Xerten and less likely to have Erymon+, Rubped, Sorsit, Tsumer and Vacala. * M07W are wet-mesic conifer forests. Compared to M46S, they are more likely to have Athfil, Coruna, Gymdry, Oplhor, Polmun, Rubspe, Thupli, Tiatri, Vacpar and FERN. Compared to M46S, they are less likely to have Cupnoo, Erymon+, Ortsec, Tsumer and Vacmem. * M47 woodlands are characterized by subalpine meadow openings. Compared to M46S, they are more likely to have Abilas, Casmer, Luepec, Luparc, Phyemp, Vacdel and SUBSHRUB. Compared to M46S they are less likely to have Cliuni, Gooobl, Menfer, Ortsec, Psemen, Tiatri, Tsuhet, Vacala and FERN. * M33 are drier forests at NOCA without Tsuhet or Tsumer. * M17M, M17O, and M17M are subalpine forests and woodlands that are more likely to have Abilas. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M46D**

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| --- | --- | --- | --- |
| **M46D** | **Mountain Hemlock – Silver Fir and White Rhododendron Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_089\_1829\_N.JPG | | Map | |
| **Summary:**  Abiama and Tsumer forests with a dense ericaceous shrub layer. Abiama is always at least prominent in the canopy, usually co-dominating with Tsumer. On the east side (in the rain shadow), Abilas can dominate the canopy above Rhoalb, or Abiama can dominate above Vacmem and Paxmyr without Tsumer. Cupnoo, and Tsuhet can also be prominent. Trees are evenly spaced rather than clumped and Phyemp is absent or low in cover. Vacmem dominates the usually dense ericaceous shrub layer, often with Rhoalb. Sorsit and Menfer can be scattered and Vacala is occasionally co-dominant. These forests have relatively low diversity, with an average of 15 species of vascular plant. Rublas, Ortsec, and/or Rubped are common in herbaceous layer, sometimes with Valsit, Tiatri, Erymon+, and Strlan at varying covers.  The map class occurs at sites with deep winter snowpack at elevations from 1200 – 1750 m, on all sloes and aspects. Lower elevation occurrences are often on slope benches or canyon bottoms with frequent cold air drainage. Old growth stands are common due to low fire frequency, and have multi-layered canopies and significant woody debris.  **Similar Map Classes:**   * M46S are very similar conifer forests. Compared to M46D, they are more likely to have Tsuhet and Vacala and less likely to have Abilas and Rhoalb. * M07D are similar conifer forests. Compared to M46D, they are more likely to have Chimen, Chiumb, Coruna, Linbor, Mahner, Psemen, Thupli, Tsuhet and Vacpar. Compared to M46S, they are less likely to have Abilas, Rhoalb, Rublas, Rubped, Sorsit, Tsumer, Vacmem and Valsit. * M43M are montane forests at MORA. Compared to M46D they are more likely to have Abipro, Chiumb, Gauova, Linbor, Psemen, Tsuhet, Vacpar and Xerten and less likely to have Rhoalb, Rublas, Rubped, Sorsit, Tsumer and Valsit. * M47 woodlands can be similar, but are characterized by subalpine meadow openings. Compared to M46D, they are more likely to have Casmer, Luepec, Phyemp, Vacdel and SUBSHRUB. Compared to M46S they are less likely to have Menfer, Ortsec, Rublas and Tiatri. * M07W are wet-mesic conifer forests. Compared to M46D, they are more likely to have Achtri, Athfil, Blespi, Coruna, Gymdry, Oplhor, Polmun, Rubspe, Thupli, Tiatri, Tsuhet, Vacala, Vacpar and FERN. Compared to M46D, they are less likely to have Abilas, Cupnoo, Ortsec, Rhoalb, Rublas, Sorsit, Tsumer, Vacmem and Valsit. * M17M, M17O, and M17M are subalpine forests and woodlands that are less likely to have Abiama. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M06

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| --- | --- | --- | --- |
| **M06** | **Mesic Subalpine Fir Forest and Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2006\CF\_41\100\_ 1410.jpg | | Map | |
| **Summary:**  Wet-mesic or mesic montane or subalpine forests and woodlands dominated by Abilas and/or short-statured Abiama. Abipro, Piceng, and/or Cupnoo can be co-dominant. Tsumer and Pinalb are often present (especially if common nearby), but are generally not prominent in canopy. Canopy trees tend to be evenly spaced (rather than clumped), leading to an open feeling; this woodland structure allows subalpine meadow species to thrive. Vacmem is the most common shrub in lush, diverse, and forb-rich herbaceous layer that can include Valsit, Rublas, Luparc, Arnlat, Erymon, Luzgla, Vioorb, Vervir, and Xerten. Abilas forests with Rhoalb in the understory at NOCA and drier Abilas forests near Grand Park at MORA are included in this map class.  Floristic description.  Stands occupy moderate to steep upper mountain slopes from 1275 – 1925 m, typically with southerly aspects. The climate is cool with deep snow accumulation in winter. Organic soil layers are generally well-developed.  **Similar Map Classes:**   * M17M are similar drier subalpine forests at MORA. Compared to M06, they are more likely to have Anemone\_spp, Carspe+, Eucled+, Fesvir, Phldif, Pinalb, Raistr and GRASS. Compared to M06, they are less likely to have Abiama, Cupnoo, MOSS\_spp, Ortsec, Paxmyr, Pedrac, Piceng, Rhoalb, Rublas, Sorsit, Tsumer, Vacdel, Vacmem, SUPERSHRUB, SHRUB and SUBSHRUB. * M17O are similar drier subalpine forests at OLYM. Compared to M06, they are more likely to have Achmil, Juncom, Lommar, Phldif, Pincon and Psemen. Compared to M06, they are less likely to have Abiama, Arnlat+, Cupnoo, Piceng, Rhoalb, Rublas, Tsumer, Vacdel, Vacmem, Valsit and SHRUB. * M17N are similar drier subalpine forests at NOCA. Compared to M06, they are more likely to have Antlan+, Arcuva+, Arecap, Hiesco+, Juncom, Lewisia\_spp, Penpro+, Phldif, Pinalb and Sedlan+. Compared to M06, they are less likely to have Abiama, Arnlat+, Cupnoo, Luzgla+, MOSS\_spp, Ortsec, Piceng, Polpul, Rhoalb, Rublas, Sorsit, Valsit, Vervir and SUPERSHRUB. * M47 woodlands can be similar, but are characterized by subalpine meadow openings. Compared to M06, they are more likely to have Casmer, Phyemp and Tsumer. Compared to M06 they are less likely to have Luzgla+, Ortsec, Paxmyr, Pedrac, Piceng, Polpul, Rublas, Valsit, GRASS and RUSH. * M24 are subalpine woodlands at NOCA. Compared to M06, they are more likely to have Antlan+, Casmer, Larlya, Phyemp, Pinalb and Vercus+. Compared to M06, they are less likely to have Abiama, Cupnoo, Ortsec, Paxmyr, Polpul, Rhoalb, Rublas, Vacmem, Valsit, Vervir and SHRUB. * M33 are drier montane woodlands at NOCA. Compare to M06, they are more likely to have Acegla, Amealn, Arcuva+, Calrub, Chiumb, Hiesco+, Pinmon, Psemen, Salsco, Sorsco and Spibet. Compared to M06, they are less likely to have Abiama, Arnlat+, Cupnoo, Luparc, Luzgla+, Polpul, Rhoalb, Sorsit, Tsumer, Vacdel, Valsit, Vervir and RUSH. * M46D are closed montane conifer forests. Compared to M06, they are more likely to have Abiama, Menfer and Tsumer. Compared to M06, they are less likely to have Arnlat+, Luzgla+, Paxmyr, Pedrac, Piceng, Polpul, GRASS and RUSH. * M85 shrublands and M86 meadows lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M47**

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| --- | --- | --- | --- |
| **M47** | **Subalpine Fir – Mountain Hemlock and Heather Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_537\_0206\_S.JPG | | Map | |
| **Summary:** Clumped subalpine forests with prominent Phyemp and Vacdel. Structurally diverse mosaics of undwarfed tree islands and small patches of dwarf ericaceous shrubland, with and without encroaching conifers. Tsumer is always at least prominent in the canopy, sometimes co-dominating with Cupnoo, Abilas, or Abiama. Dwarf shrubs Vacdel and Phyemp and sometimes Casmer dominate the characteristic meadow openings. Vacmem, Sorsit, or Rhoalb can occur near tree clumps. Herbs are scattered, with Luepec, Erymon+, Luparc, Xerten, and Arnlat+ most common. Tree islands are typically individually quite small, consisting of less than 10 trees.  These forests are more common on the west sides of all parks, but can occur on wetter slopes across all three parks. Often these woodlands occur extensively on upper slopes (1150 – 1800 m) near treeline where extremely deep snowpack discourages tree growth in topographic depressions.  **Similar Map Classes:**   * M46D are similar closed forests without subalpine meadow openings. Compared to M47, they are more likely to have Menfer, Ortsec, Rublas and Tiatri. Compared to M47 they are less likely to have Casmer, Luepec, Phyemp, Vacdel and SUBSHRUB. * M74S are similar shrublands without full statured trees. Compared to M47, they are more likely to have Carspe+, Erigeron\_spp, Hiegra, Polbis, GRASS and SEDGE. Compared to M47, they are less likely to have Abiama, Cupnoo, Rhoalb, Tsumer, Vacmem, CONIFER\_GT5 and SHRUB. * M06 are mesic or wet-mesic forests without subalpine meadow openings. Compared to M47, they are more likely to have Luzgla+, Ortsec, Paxmyr, Pedrac, Piceng, Polpul, Rublas, Valsit, GRASS and RUSH. Compared to M47, they are less likely to have Casmer, Phyemp and Tsumer. * M24 are subalpine forests with Larlya at NOCA. Compared to M47, they are more likely to have Antlan+, Arecap, Erigeron\_spp, Fesvir, Hiegra, Junpar+, Luzgla+, Piceng, Pinalb, Vacsco+, Vercus+, GRASS and RUSH. Compared to M47, they are less likely to have Abiama, Cupnoo, Erymon+ and Rhoalb. * M15 krumholz lack full statured conifer trees. * M85 shrublands and M86 meadows lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M17M

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| --- | --- | --- | --- |
| **M17M** | **Mount Rainier Subalpine Fir – Whitebark Pine Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2007\CF-94\100\_2020.jpg | | Map | |
| **Summary:**  Dry or dry-mesic subalpine woodlands dominated by Abilas, often with Pinalb. Trees tend to grow in small clumps scattered in a subalpine meadow. The understory is characterized and often dominated by Fesvir, with Luparc and Eucled usually present to dominant. Other common forbs are Phldif, Valsit, Liggra, Polpul, Raistr, Carspe, Achmil and Eriper.  This subalpine woodland map class occurs between 1775 – 2075 m, and is most abundant on the northeastern side of Mount Rainier. Stands typically occupy moderate to steep south-facing slopes above the continuous forest line.  **Similar Map Classes:**   * M06 are mesic or wet-mesic conifer forests. Compared to M17M, they are more likely to have Abiama, Cupnoo, MOSS\_spp, Ortsec, Paxmyr, Pedrac, Piceng, Rhoalb, Rublas, Sorsit, Tsumer, Vacdel, Vacmem, SUPERSHRUB, SHRUB and SUBSHRUB. Compared to M17M, they are less likely to have Anemone\_spp, Carspe+, Eucled+, Fesvir, Phldif, Pinalb, Raistr and GRASS. * M67E are subalpine meadows without prominent conifer trees that are often adjacent to M17M woodlands. Compared to M17M they are more likely to have Antlan+, Arecap, Casmin, Erymon+, Junpar+, Lombra+, Paxmyr, Senint, Vacdel, SHRUB and SUBSHRUB. Compared to M17M, they are less likely to have Abilas, Pinalb, Polpul, Raistr, Valsit, CONIFER\_GT5 and CONIFER\_LT5. * M47 woodlands have patches of heather-dominated subalpine meadow. Compared to M17M, they are more likely to have Abiama, Casmer, Cupnoo, Erymon+, Luepec, MOSS\_spp, Phyemp, Rhoalb, Sorsit, Tsumer, Vacdel, Vacmem, SUPERSHRUB, SHRUB and SUBSHRUB. Compared to M17M, they are less likely to have Achmil, Anemone\_spp, Carspe+, Erigeron\_spp, Eucled+, Fesvir, Ligusticum\_spp, Phldif, Pinalb, Polbis, Polpul, Potfla+, Raistr, GRASS and SEDGE. * M15 krumholz lack full statured conifer trees. * M85 shrublands and M86 meadows lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M17N**

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| --- | --- | --- | --- |
| **M17N** | **North Cascades Whitebark – Pine Subalpine Fir Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos2\12\_NOCA\_038\_0020\_N.JPG | | Map | |
| **Summary:**  Dry or dry-mesic subalpine woodlands dominated by Abilas and Pinalb. Trees cover is modest (15 – 35 %), with trees tending to grow in clumps interspersed with rock outcrops and/or Fesvir meadow. Fesvir, Paxmyr, and Vacmem are usually present and can dominate the understory between tree clumps. Arecap and Lombra are usually present in smaller amounts. Other common understory species are Luparc, Penpro, Junpar+, Senint, and Casmin; Sedlan and Juncom are common on rockier sites.  This subalpine woodland map class typically occurs on moderate to steep south-facing upper slopes between 1915 – 2200m on the east side of the Cascades, typically occupy above the continuous forest line.  **Similar Map Classes:**   * M24 are subalpine woodlands with prominent Larlya. Compared to M17N, they are more likely to have Antlan+, Casmer, Luepec, Luzgla+, MOSS\_spp, Phyemp, Tsumer, Vacdel, Valsit and Vercus+. Compared to M17N, they are less likely to have Achmil, Arcuva+, Hiesco+, Juncom, Lombra+, Paxmyr, Penpro+, Phldif and Pinalb. * M06 are mesic or wet-mesic conifer forests. Compared to M17N, they are more likely to have Abiama, Arnlat+, Cupnoo, Luzgla+, MOSS\_spp, Ortsec, Piceng, Polpul, Rhoalb, Rublas, Sorsit, Valsit, Vervir and SUPERSHRUB. Compared to M17N, they are less likely to have Antlan+, Arcuva+, Arecap, Hiesco+, Juncom, Lewisia\_spp, Penpro+, Phldif, Pinalb and Sedlan+. * M67E are subalpine meadows without prominent conifer trees that are often adjacent to M17N woodlands. Compared to M17N they are more likely to have Antlan+, Eucled+, Ligusticum\_spp, Vercus+ and SEDGE. Compared to M17M, they are less likely to have Abilas, Juncom, Larlya, Pinalb, CONIFER\_GT5 and CONIFER\_LT5. * M47 woodlands have patches of heather-dominated subalpine meadow. Compared to M17N, they are more likely to have Abiama, Casmer, Cupnoo, Erymon+, Luepec, MOSS\_spp, Phyemp, Rhoalb, Sorsit, Tsumer and Vacdel. Compared to M17N, they are less likely to have Achmil, Antlan+, Arcuva+, Arecap, Casmin, Erigeron\_spp, Fesvir, Hiesco+, Juncom, Junpar+, Larlya, Lewisia\_spp, Lombra+, Paxmyr, Penpro+, Phldif, Pinalb, Sedlan+, Senint, Vacsco+ and GRASS. * M15 krumholz lack full statured conifer trees. * M85 shrublands and M86 meadows lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M17O

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| --- | --- | --- | --- |
| **M17O** | **Olympic Mountains Subalpine Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_743\_1333\_N\_G245\_012.jpg | | Map | |
| **Summary:**  Dry or dry-mesic Abilas woodlands. Forest structure ranges from short trees with some skirting on steep upper slopes to mostly closed forests below. Abilas is the most common and abundant tree although Psemen and Pincon can be present to co-dominant. Beneath the trees, Luparc, Juncom are usually present and can be dominant. Other common understory plants are Lommar, Phldif, Paxmyr, and Hiealb.  These forests are typically on steep south-facing slopes with loose rock and mineral soil. Generally limited to colder and drier sites in the rain-shadow between 1525 and 1875 m.  **Similar Map Classes:**   * M43O are lower elevation dry or dry-mesic conifer forests. Compared to M17O, they are more likely to have Abigra, Acemac, Achtri, Adebic, Brovul+, Camsco, Fesocc+, Galium\_spp, Gausha, Gooobl, Holdis, Linbor, Mahner, MOSS\_spp, Osmorhiza\_spp, Polmun, Psemen, Rosa\_spp, Ruburs, Symalb, Symmol, Trilat, Tsuhet, BROADLEAF\_GT5, BROADLEAF\_LT5, SUPERSHRUB, SHRUB, SUBSHRUB and FERN. Compared to M17O, they are less likely to have Abilas, Achmil, Juncom, Lommar, Luparc, Paxmyr, Phldif, Pincon, Polpul, SEDGE and RUSH. * M35 are lower elevation forests, also with prominent Pincon. Compared to M17O, they are more likely to have Amealn, Arcuva+, Calrub, Gausha, LICHEN\_spp, MOSS\_spp, Racomitrium\_spp, Salsco, Spibet, Tsuhet, Vacmem, SHRUB and FERN. Compared to M17O, they are less likely to have Abilas, Achmil, Juncom, Lommar, Luparc, Phldif, Polpul, FORB, SEDGE and RUSH. * M06 are mesic or wet-mesic conifer forests. Compared to M17O, they are more likely to have Abiama, Arnlat+, Cupnoo, Piceng, Rhoalb, Rublas, Tsumer, Vacdel, Vacmem, Valsit and SHRUB. Compared to M17O, they are less likely to have Achmil, Juncom, Lommar, Phldif, Pincon and Psemen. * M67W are dry to mesic subalpine meadows without prominent conifer trees that are often adjacent to M17O woodlands. Compared to M17O they are more likely to have Antlan+ and Junpar+. Compared to M17O, they are less likely to have Abilas, Hiealb, Pincon, Polpul, Psemen and CONIFER\_GT5. * M47 woodlands have patches of heather-dominated subalpine meadow. Compared to M17O, they are more likely to have Abiama, Casmer, Erymon+, Phyemp, Rhoalb, Tsumer, Vacdel, Vacmem, SHRUB and SUBSHRUB. Compared to M17N, they are less likely to have Achmil, Hiealb, Juncom, Lommar, Luparc, Paxmyr, Phldif, Pincon, Polpul, Psemen, GRASS and SEDGE. * M15 krumholz lack full statured conifer trees. * M85 shrublands and M86 meadows lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M24**

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| --- | --- | --- | --- |
| **M24** | **Subalpine Fir – Subalpine Larch Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2005-07\_classif\_plots\a03\_coll\2006\_NOCA\_Photos\CF-415\100\_0631.jpg | | Map | |
| **Summary:**  Subalpine Larlya woodlands. Larlya and Abilas are both present in the open canopy and either can be dominant. Other conifers such as Piceng and Tsumer can also be present, especially if common in the surrounding area. Pinalb is never prominent, but seedlings are often present nearby. Trees can be well spaced or relatively clumped. Various combinations of the shrubs Vacsco, Vacdel, Casmer, and Phyemp dominate the understory, along with Luzgla and Luepec. Other common understory plants include Junpar+, Arnlat, Eriper, Luparc, Arecap, and Hiegra. Vacmem is sometimes present as a low shrub layer or at the base of clumped Abilas.  These iconic woodlands are found at or near treeline (1800 –2125m) east of the Cascade crest. They occur in north-facing cirques or on high benches of all aspects where snow remains until June or July. Slopes are gentle or steep. Yearly snow accumulations can be quite deep (typically 2-3 m) and frost may occur at any time of the year. Stands of Pinalb are often present on adjacent south-facing slopes or ridgelines with lower snow accumulations and seasonal soil drought.  **Similar Map Classes:**   * M17N woodlands lack Larlya and tend to be drier. Compared to M24, they are more likely to have Achmil, Arcuva+, Hiesco+, Juncom, Lombra+, Paxmyr, Penpro+, Phldif and Pinalb. Compared to M24, they are less likely to have Antlan+, Casmer, Larlya, Luepec, Luzgla+, MOSS\_spp, Phyemp, Tsumer, Vacdel, Valsit and Vercus+. * M06 are mesic or wet-mesic Abilas forests without prominent Larlya. Compared to M24, they are more likely to have Abiama, Cupnoo, Ortsec, Paxmyr, Polpul, Rhoalb, Rublas, Vacmem, Valsit, Vervir and SHRUB. Compared to M24, they are less likely to have Antlan+, Casmer, Larlya, Phyemp, Pinalb and Vercus+. * M47 woodlands have patches of heather-dominated subalpine meadow and lack prominent Larlya. Compared to M24, they are more likely to have Abiama, Cupnoo, Erymon+ and Rhoalb. Compared to M24, they are less likely to have Antlan+, Arecap, Erigeron\_spp, Fesvir, Hiegra, Junpar+, Larlya, Luzgla+, Piceng, Pinalb, Vacsco+, Vercus+, GRASS and RUSH. * M15 krumholz lack full statured conifer trees. * M67E and M86 meadows and M74S and M74A dwarf shrublands lack prominent conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

M15

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| --- | --- | --- | --- |
| **M15** | **Krummholz** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2012\Baileys\_Tour\12\_OLYM\_521\_0011\_E.jpg.jpg | | Map | |
| **Summary:**  Shrub-form conifers dwarfed by harsh environmental conditions. The canopy is dominated by densely mounded or skirted Abilas or Cupnoo with most of the tree cover only a few meters tall. Tsumer, Piceng, and Pinalb are occasionally prominent to co-dominant. Dwarf shrubs such as Phyemp, Paxmyr, or Juncom and alpine herbs and cushion plants like Phldif, Achmil, and Luepec are usually present between conifer clumps. This map class also includes patches of Juncom with heathers and alpine cushion plants.  These conifer shrublands occur on exposed and windswept cliffs and ridgelines at high elevations (1600 – 2275m). Soils are typically shallow and well-drained soils with frequent rock outcrops. Krummholz patches often form a mosaic with bedrock cliffs, alpine meadows, and/or fellfields.  **Similar Map Classes:**   * M74S and M74A heather shrublands and M63 vegetation can have similar composition, but lack prominent shrub-form conifers. * M47, M24, M17M, M17N and M17O woodlands can also have similar composition and skirting on trees, but have at least some mostly upright conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M01**

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| --- | --- | --- | --- |
| **M01** | **Deciduous Floodplain and Swamp Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2005\MORA-18-012\IMG\_0099.JPG | | Map | |
| **Summary:**  Deciduous floodplain forests. Upper canopies are > 5m tall and typically composed of a single cohort of Alnrub; or dominated or co-dominated by Acemac, and/or Popbal. Conifers such as Thupli, Picsit, and Tsuhet can be present to co-dominant, especially in the understory. Acecir is occasionally forms the upper canopy. The shrub and herbaceous layers are often lush and vary depending on park, substrate, and disturbance (e.g. inundation, browsing). Common understory species are Rubspe, Corser, Polmun, Tolmen, Ciralp, Athfil, Viogla, and Oxaore.  These lower elevation (30 – 850 m) forests are found on floodplains in riparian and swamp settings, including as vegetated islands within the active channel. They are often initiated by riverine disturbance and can experience overbank flooding during high flow events. Slopes are gentle, the water table is close to the surface and soils can be saturated. This map class also includes deciduous swamp forests around oxbow lakes, swales and other backwaters removed from an active channel.  **Similar Map Classes:**   * M01Y are recently colonized gravel bars with shrub-form vegetation. Compared to M01, they are more likely to have Fravir, Hyprad, Montia\_spp and Salsit+. Compared to M01, they are less likely to have Acemac, Alnrub+, Clasib+, Picsit, Popbal, Ranrep+, Rubspe, Samrac, Stacha, Tolmen, BROADLEAF\_GT5, GRASS and SEDGE. * M20I upland deciduous forests can be very similar but were not initiated by flooding. * M20C upland deciduous forests are found on upland coastal sites like bluffs. Compared to M01, they are more likely to have Blespi, Gausha, Hermax and Maidil. Compared to M01, they are less likely to have Acecir, Popbal, Ranrep+, Thupli, Tiatri, Tolmen, SUBSHRUB, GRASS and SEDGE. * M44 are similar, often adjacent, forests dominated or co-dominated by conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M01Y**

|  |  |  |  |
| --- | --- | --- | --- |
| **M01Y** | **Alluvial Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_411\_0724\_E.JPG | | Map | |
| **Summary:**  Deciduous shrublands on gravel bars in active floodplains. Vegetation is dominated by Salsit, shrub-form Alnrub and/or shrub-form Popbal, with a diverse assortment of herbaceous colonizers, such as Hyprad, Rumace, Claytonia\_sp, Plalan, Phahas, Agrostis\_sp, Fravir, and Erilan.  These vegetated gravel bars are found as islands within river channels or along river banks. Vegetation density varies depending on recent disturbance history and substrate. In absence of continued disturbance, these shrublands mature into M01.  Setting description.  **Similar Map Classes:**   * M01 deciduous forests are dominated by tree-form deciduous species. Compared to M01Y, they are more likely to have Acemac, Alnrub+, Clasib+, Picsit, Popbal, Ranrep+, Rubspe, Samrac, Stacha, Tolmen, BROADLEAF\_GT5, GRASS and SEDGE. Compared to M01, they are less likely to have Fravir, Hyprad, Montia\_spp and Salsit+. * M39S are wet shrublands that are unlikely to mature into deciduous forests without a change in hydrology. Compared to M01Y, they are more likely to have Athfil, Caraqu+, Corser, Loninv, Lysame, Rubpar, Rubspe, Spidou, Thupli, SHRUB, SEDGE and FERN. Compared to M01Y, they are less likely to have Alnrub+, Anamar, Fravir, Hyprad, Montia\_spp, MOSS\_spp, Plalan, Rumace+ and BROADLEAF\_LT5. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M20C**

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| --- | --- | --- | --- |
| **M20C** | **Coastal Bluff Deciduous Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\classification\_plots\CF-95\100\_1072.jpg | | Map | |
| **Summary:**  Coastal Alnrub forests. Alnrub dominates or is at least prominent in the canopy. Tsuhet and Picsit may be co-dominant. Polmun is diagnostic in the understory with an average of 25% cover. There understory is usually dense and species-rich compared to adjacent conifer forests. Rubspe typically dominates the shrub layer, with Gausha and Samrac also common. Maidil, Blespi, Athfil, and Clasib are the most common herbs.  Successional stand developing after slope failures or other disturbance on coastal bluffs and terraces up to 80 m. Not associated with floodplains or riverine disturbance.  Setting description.  **Similar Map Classes:**   * M01 are floodplain and swamp deciduous forests. Compared to M20C they are more likely to have Acecir, Popbal, Ranrep+, Thupli, Tiatri, Tolmen, SUBSHRUB, GRASS and SEDGE. Compared to M20C, they are less likely to have Blespi, Gausha, Hermax and Maidil. * M20I are upland deciduous forests not inland from the coastal strip. Compared to M20C, they are more likely to have Acecir, Acemac, Ciralp, Lactuca\_spp, Psemen, Ruburs, Thupli, Tolmen and SUBSHRUB. Compared to M20C, they are less likely to have Blespi, Gausha, Hermax, Maidil, Picsit and Samrac. * M45 and M27C are conifer-dominated forests also found on the coastal strip. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M20I**

|  |  |  |  |
| --- | --- | --- | --- |
| **M20I** | **Upland Deciduous Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_313\_1023\_W.JPG | | Map | |
| **Summary:**  Upland successional deciduous forests. Acemac or Alnrub are dominant or at least prominent in the canopy, and usually both species are present. If present, Popbal can also co-dominate. Conifers such as Tsuhet, Thupli, and Psemen are often present as canopy trees or saplings. Species composition usually reflects the upland setting, but some wet-mesic indicators are often present. The understory can be dense and usually has Polmun, Tolmen, Ciralp, Clasib, Galium\_sp, and/or Mycmur. Athfil, Viogla, Tiatri, and Dryexp are also commonly present. A well-developed shrub layer of Acecir or Rubspe can be present.  These forests occur on floodplain terraces and lower valley walls between 130 and 570 m on all aspects. These are successional forests, where the deciduous component has come in due to natural (e.g. wildfires, landslides) or human-caused disturbance (such as logging, clearing, or road building/widening) and is often facilitated by summer water availability.  **Similar Map Classes:**   * M01 can be very similar floodplain and swamp deciduous forests, often initiated by flooding. Compared to M20I they are more likely to have Picsit. * M19 are Acemac-dominated uplands forests on debris aprons at NOCA. Compared to M20I, they are more likely to have Acegla, Amealn, Chiumb, Cliuni, Cornut, Disporum\_spp, Elymus\_spp, Mahaqu, Mairac, Maiste, Osmorhiza\_spp, Paxmyr, Pteaqu, Rosa\_spp, Rubpar, Salsco, Spibet, Symalb, Triova and BROADLEAF\_LT5. Compared to M20I, they are less likely to have Alnrub+, Athfil, Ciralp, Clasib+, MOSS\_spp, Polmun, Rubspe, Tolmen and Tsuhet. * M43O are dry to dry-mesic upland conifer forests at OLYM that can have prominent Acemac or Arbmen. * M43N are dry to dry-mesic upland conifer forests at NOCA that can have promient Acemac or Betpap. * M20C are coastal bluff forests with dominant or co-dominant Alnrub. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M19**

|  |  |  |  |
| --- | --- | --- | --- |
| **M19** | **Big Leaf Maple Debris Apron Forest** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_140\_0002\_S.JPG | | Map | |
| **Summary:**  Acemac debris apron forests. Acemac dominates the closed to patchy canopy, occasionally with Psemen and/or Cornut. The understory has a diverse assortment of both shrubs and herbs with Disporum\_sp, Pteaqu, Rubpar, Paxmyr, Rosa\_sp, Osmorhiza\_sp, Galium\_sp, Mairac, Symalb, Adebic, Amealn, and Triova most common.  These forests occur at low elevations (350 – 900 m), primarily east of Cascade crest. They occur on partially stabilized debris aprons, at least slightly above the floodplain below (median slope is 13 degrees). Pistol butt trunks and other evidence of ongoing mechanical disturbance are usually present.  **Similar Map Classes:**   * M18 are similar Acecir or Acemac dominated shrublands. Compared to M19, they are more likely to have Acecir, Alnvir, Athfil, MOSS\_spp, Oplhor, Polmun, Rubspe and Samrac. Compared to M19, they are less likely to have Adebic, Amealn, Chiumb, Cornut, Disporum\_spp, Elymus\_spp, Mahaqu, Osmorhiza\_spp, Psemen, Rosa\_spp, Salsco, Spibet, Symalb, Thupli and CONIFER\_GT5. * M20I are similar upland deciduous forests. Compared to M19, they are more likely to have Alnrub+, Athfil, Ciralp, Clasib+, MOSS\_spp, Polmun, Rubspe, Tolmen and Tsuhet. Compared to M19, they are less likely to have Acegla, Amealn, Chiumb, Cliuni, Cornut, Disporum\_spp, Elymus\_spp, Mahaqu, Mairac, Maiste, Osmorhiza\_spp, Paxmyr, Pteaqu, Rosa\_spp, Rubpar, Salsco, Spibet, Symalb, Triova and BROADLEAF\_LT5. * M43N are similar upland conifer forests that can have prominent Acemac or Betpap, but are rarely found on debris aprons. Compared to M19, they are more likely to have Betpap, Fesocc+, Fravir, Gooobl, Linbor, Loncil, Mahner, MOSS\_spp, Trilat and Tsuhet. Compared to M19, they are less likely to have Acemac, Asacau, Cliuni, Cornut, Disporum\_spp, Elymus\_spp, Mairac, Maiste, Osmorhiza\_spp, Pteaqu, Rubpar, Salsco, Symalb, Triova, BROADLEAF\_LT5 and FERN. * M01 are floodplain and swamp deciduous forests, often initiated by flooding. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M18**

|  |  |  |  |
| --- | --- | --- | --- |
| **M18** | **Vine Maple Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_492\_0002\_E.JPG | | Map | |
| **Summary:**  Deciduous shrublands dominated by Acecir. While Acecir is typically the dominant species in the dense tall shrub layer (average 75 percent cover), other shrubs such as Samrac, Rubspe, shrub-form Acemac, Oplhor, Acegla, and Alnvir can be present to co-dominant. The understory is variable, from dry to wet-mesic and sparse to dense. Many different species can be present, most commonly Paxmyr, Galtriflo, Mairac, Polmun, and Athfil.  These dense shrublands occur on all aspects at low to middle elevations (525 – 1250 m) on both sides of the Cascade crest. Low conifer cover is maintained by mechanical disturbance, these shrublands generally occur on talus, at the lower ends of avalanche chutes, or on rock slides, and are usually not associated with riparian areas. Sites are typically moderate to steep and exposed rock has low (less than 25%) cover.  **Similar Map Classes:**   * M21 are similar Alnvir shrublands. Compared to M18, they are more likely to have Alnvir, Cupnoo, Dicfor, Strlan and Vervir. Compared to M18, they are less likely to have Acecir, Acemac and Paxmyr. * M51 are dry to dry-mesic mixed shrublands. Compared to M18, they are more likely to have Amealn, Calrub, Ceavel, Chaang, Eucled+, Prunus\_spp, Salsco, Sorsco, Spibet, Thalictrum\_spp and GRASS. Compared to M18, they are less likely to have Acecir, Acemac, Alnvir, Athfil, Galium\_spp, Maiste, MOSS\_spp, Oplhor, Polmun, Rubspe and Samrac. * M50 shrublands are characterized by large talus openings and poor soil development. Compared to M18, they are more likely to have Abilas, Cupnoo, LICHEN\_spp, Psemen, Tsuhet, CONIFER\_GT5 and CONIFER\_LT5. Compared to M18, they are less likely to have Acecir, Acemac, Alnvir, Athfil, Galium\_spp, Mairac, Maiste, Oplhor, Polmun, Rubpar, Rubspe, Samrac, Viogla+, FORB, GRASS and FERN. * M19 are tree-form Acemac or Acemac and Psemen forests. Compared to M18 they are more likely to have Adebic, Amealn, Chiumb, Cornut, Disporum\_spp, Elymus\_spp, Mahaqu, Osmorhiza\_spp, Psemen, Rosa\_spp, Salsco, Spibet, Symalb, Thupli and CONIFER\_GT5. Compared to M18, they are less likely to have Acecir, Alnvir, Athfil, MOSS\_spp, Oplhor, Polmun, Rubspe and Samrac. * M61S are shrublands dominated by Symalb or Rubpar. Compared to M18, they are more likely to have Achmil, Chaang, Elymus\_spp, Hermax, Hydfen, Pteaqu, Rubpar, Symalb, Thalictrum\_spp, Urtdio and SEDGE. Compared to M18, they are less likely to have Acecir, Acemac, MOSS\_spp, Oplhor, Paxmyr, Polmun and SUPERSHRUB. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M21**

|  |  |  |  |
| --- | --- | --- | --- |
| **M21** | **Sitka Alder Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2006\S\_18\100\_ 1441.jpg | | Map | |
| **Summary:**  Tall shrublands dominated by Alnvir. The dense, tall shrub layer in these moist shrublands is dominated by Alnvir (average cover of 65 percent). Shrub-form Cupnoo can be codominant, especially on talus that forms below high cliffs. The understory ranges from sparse to dense with many different species possible. Rubpar, Samrac are common associates. On wetter sites, Rubspe forms a dense lower shrub layer above a lush herbaceous layer that includes Athfil and forbs such as Viogla, Vervir, Galium\_sp, and Clasib.  These shrublands occur at middle to high elevations (800 – 1525 m), on gentle to steep slopes. They are maintained by mechanical disturbance, generally occurring on talus and toe slopes or along avalanche chutes and steep stream channels. Soils are typically rocky and well drained, but can be moist year round. Adjacent vegetation is usually montane or subalpine conifer forest, but can also be herbaceous meadows.  **Similar Map Classes:**   * M18 are similar shrubalnds dominated by Acecir. Compared to M21, they are more likely to have Acecir, Acemac and Paxmyr and less likely to have Alnvir, Cupnoo, Dicfor, Strlan and Vervir. * M61S are shrublands dominated by Symalb or Rubpar. Compared to M21, they are more likely to have Achmil, Chaang, Hermax, Pteaqu, Rubpar, Symalb, Thalictrum\_spp, Urtdio and SEDGE. Compared to M21, they are less likely to have Abiama, Alnvir, Clasib+, Cupnoo, MOSS\_spp, Rubspe, Samrac, Sorsit, Strlan, Vacmem, CONIFER\_LT5 and SUPERSHRUB. * M73 are herb-dominated subalpine and alpine talus slopes that can have patches of Alnvir. Compared to M21, they are more likely to have Arnlat+, Arudio, Athame, Chalat, Epilobium\_spp, Luepec, Mimlew+, Oxydig, Sentri+, Vahatr and Vercus+. Compared to M21, they are less likely to have Abiama, Alnvir, Athfil, Clasib+, Cupnoo, Dicfor, Galium\_spp, Mitella\_spp, Rubpar, Rubspe, Samrac, Sorsit, Strlan, Vacmem, Viogla+, CONIFER\_GT5, CONIFER\_LT5, SUPERSHRUB and SHRUB. * M39H are shrub dominated wetlands, often with peaty soils. Compared to M21, they are more likely to have Caraqu+, Corser, Equarv+, Loninv, Lysame, Salsit+, Spidou, Thupli, BROADLEAF\_GT5 and SEDGE. Compared to M21, they are less likely to have Abiama, Alnvir, Clasib+, Cupnoo., Mitella\_spp, Rubspe, Samrac, Sorsit, Strlan, Vacmem, Vervir, Viogla+ and CONIFER\_LT5 | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M50**

|  |  |  |  |
| --- | --- | --- | --- |
| **M50** | **Colluvial Shrubland and Woodland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_331\_0004\_B.JPG | | Map | |
| **Summary:**  Middle elevation (350-1300m) talus slopes with scattered woody vegetation. The dominant woody plants vary, but usually Psemen, Abilas and/or Acecir is at least prominent. Other possible dominants include Poptre, Piceng, Cupnoo, Acegla, Holdis, and/or Amealn. Patches of woody plants often matrix with open talus slopes that feature scattered Paxmyr, Cryacr, Rubleu, Amealn and/ or Riblac.  The sizeable (usually > 20cm diameter and often much greater) angular rocks that tend to make up these slopes tend to be deep (precluding soil development) and relatively stable, hosting lichens and mosses. Slopes range from moderate to steep and cover all aspects.  **Similar Map Classes:**   * M18 are dense tall shrublands dominated by Acecir. Compared to M50, they are more likely to have Acecir, Acemac, Alnvir, Athfil, Galium\_spp, Mairac, Maiste, Oplhor, Polmun, Rubpar, Rubspe, Samrac, Viogla+, FORB, GRASS and FERN. Compared to M50, they are less likely to have Abilas, Cupnoo, LICHEN\_spp, Psemen, Tsuhet, CONIFER\_GT5 and CONIFER\_LT5. * M21 are dense tall shrublands dominated by Alnvir. Compared to M50, they are more likely to have Acecir, Acemac, Alnvir, Athfil, Galium\_spp, Mairac, Maiste, Oplhor, Polmun, Rubpar, Rubspe, Samrac, Viogla+, FORB, GRASS and FERN. Compared to M50, they are less likely to have Abilas, Acecir, Amealn, LICHEN\_spp, MOSS\_spp, Paxmyr, Psemen, Rubleu, Tsuhet and BROADLEAF\_LT5. * M51 are dry to dry-mesic shrublands at NOCA. Compared to M50, they are more likely to have Amealn, Calrub, Ceavel, Chaang, Eucled+, Mairac, Prunus\_spp, Rubpar, Salsco, Spibet, Thalictrum\_spp, SHRUB and GRASS. Compared to M50, they are less likely to have Abilas, Cupnoo, LICHEN\_spp, MOSS\_spp, Tsuhet and CONIFER\_GT5. * M43N, M43M, M07D, M42G, M19, and M42P are all forests without prominent talus openings. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M51**

|  |  |  |  |
| --- | --- | --- | --- |
| **M51** | **North Cascades Dry Tall Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_133\_S104\_N.JPG | | Map | |
| **Summary:**  Dry to dry-mesic tall shrublands. These shrublands are composed of a diverse mix of tall shrubs and herbs, including Ceavel, Amealn, Salsco, Acegla, Sorsco, and Prunus\_spp. A few Psemen are often scattered and sometimes standing dead, but live trees never form a full canopy. Rubpar, Vacmem, or Symalb sometimes form a prominent mid-layer of shrubs. Herbs tend to be diverse as well and concentrated in patched with fewer shrubs. Paxmyr, Chaang, Spibet, Calrub, Mairac, Eucled+, and Thalictrum\_spp are common.  These mixed shrublands occur along and east of the Cascade crest at middle elevations (550 – 1500 m). They occur on south and southwest facing slopes, often in openings within Psemen woodlands. Lack of tree cover is sometimes maintained by mechanical disturbance, but more often the result of a dry setting and a recent fire or other tree-killing disturbance.  **Similar Map Classes:**   * M18 are similar Acecir shrublands. Compared to M51, they are more likely to have Acecir, Acemac, Alnvir, Athfil, Galium\_spp, Maiste, MOSS\_spp, Oplhor, Polmun, Rubspe and Samrac. Compared to M51 they are less likely to have Amealn, Calrub, Ceavel, Chaang, Eucled+, Prunus\_spp, Salsco, Sorsco, Spibet, Thalictrum\_spp and GRASS. * M66 are vegetated balds and are not dominated by tall shrubs. Compared to M51 they are more likely to have Achmil, Arcuva+, Cryacr, LICHEN\_spp, Lycsit+, MOSS\_spp, Pinpon, Psespi, Racomitrium\_spp, Zigadenus\_spp and RUSH. Compared to M51, they are less likely to have Acegla, Amealn, Ceavel, Chaang, Eucled+, Mairac, Paxmyr, Prunus\_spp, Rubpar, Salsco, Sorsco, Spibet, Thalictrum\_spp, Vacmem, BROADLEAF\_LT5, SUPERSHRUB and SHRUB. * M21 are wet-mesic tall shrublands dominated by Alnvir. * M33, M36, M35 and M43N are dominated by live conifers. * M19 is dominated or co-dominated by tree-form Acemac. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M66**

|  |  |  |  |
| --- | --- | --- | --- |
| **M66** | **Vegetated Bald** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_318\_DS302\_N.JPG | | Map | |
| **Summary:**  Balds and other open upland sites within a closed conifer forests. Associated vegetation is sparse to moderately dense and dominated by woody shrubs, forbs, or grasses. Scattered Psemen and assorted graminoids are usually present. Different plants are likely to dominate depending on setting and park. Prominent mosses and lichens include Racomitrium\_spp. and Cladonia spp. At North Cascades National Park, these balds are most common on the east side and often have prominent Arcuva+, Psespi, Achmil, Danint, Paxmyr, Amealn, and Cryacr. At Olympic National Park, they are most common on slopes near the Elwha River and Achmil, Fesroe, Lommar, Arccol, Cerarv, Fravir, Frilan, Lomnud+, Mahaqu, and Zigadenus\_spp are most common. At Mount Rainier, they are most common around the Muddy Fork Cowlitz River and Box Canyon.  These openings occur below closed treeline at low to middle elevations (500 – 1700 m) on both sides of the Cascade crest. These forest openings are typically grouped in an areas of favorable geology, with individual patches varying in size. The substrate is mostly bedrock and what soil exists is shallow, which limits tree growth. They are most common on south-facing bedrock outcrops and occasionally found in erosional areas.  **Similar Map Classes:**   * M50 are deep talus slopes with scattered woody plants. Compared to M66, they are more likely to have Abilas, Acecir, Acegla, Cupnoo, Psemen, Rubleu, Tsuhet, CONIFER\_GT5, CONIFER\_LT5, BROADLEAF\_LT5 and SUPERSHRUB. Compared to M66, they are less likely to have Achmil, Arcuva+, Calrub, Hiesco+, Lycsit+, Pinpon, Psespi, Racomitrium\_spp, Zigadenus\_spp, GRASS and RUSH. * M85 are montane and subalpine shrublands. Compared to M66, they are more likely to have Antlan+, Arecap, Carspe+, Juncom, Junpar+, Luparc, Phldif, Polbis, SEDGE and RUSH. Compared to M66, they are less likely to have Amealn, Arcuva+, Calrub, Cryacr, Hiesco+, Lycsit+, Pinpon, Psespi, Racomitrium\_spp, Zigadenus\_spp, SUPERSHRUB, SUBSHRUB and FERN. * M67E are dry to mesic subalpine meadows. Compared to M66, they are more likely to have Abilas, Antlan+, Arecap, Casmin, Erigeron\_spp, Erymon+, Eucled+, Fesvir, Junpar+, Ligusticum\_spp, Luparc, Phldif, Senint, Vacdel, Vercus+ and RUSH. Compared to M66, they are less likely to have Arcuva+, Cryacr, LICHEN\_spp, Lycsit+, MOSS\_spp, Pinpon, Psemen, Psespi, Racomitrium\_spp, Zigadenus\_spp and FERN. * M67W are dry to mesic subalpine meadows at OLYM. Compared to M66, they are more likely to have Antlan+, Arecap, Carspe+, Juncom, Junpar+, Luparc, Phldif, Polbis, SEDGE and RUSH. Compared to M66, they are less likely to have Amealn, Arcuva+, Calrub, Cryacr, Hiesco+, Lycsit+, Pinpon, Psespi, Racomitrium\_spp, Zigadenus\_spp, SUPERSHRUB, SUBSHRUB and FERN. * M86 and M61H are mesic or wet-meisic forb dominated meadows without much exposed bedrock. * M18, M51, and M21 are dominated or co-dominated by tall shrubs. * M33, M36, M35, M42G, M42P, M07 and M43N are dominated by live conifers. * M19 is dominated or co-dominated by tree-form Acemac. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M61H**

|  |  |  |  |
| --- | --- | --- | --- |
| **M61H** | **Cow Parsnip Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2011\OLYM\_707\_0006\_W.jpg | | Map | |
| **Summary:**  Mesic or wet-mesic tall forb meadows. A diverse, forb-dominated meadow dominated or co-dominated by Hermax and/or Thalictrum\_spp. Composition is variable between patches, but commonly includes Achmil, Brosit, Carspe+, Chaang, Luparc, Vervir, Elymus\_spp, Erigeron\_spp, Casmin, Artemisia\_spp, Valsit, Polbis, Hydfen, Delphinium\_spp. Abilas or Cupnoo can be scattered at low cover. Occasionally Spidou, Poptre, or Rubpar are prominent. At Olympic National Park, these meadows often have Mountain Beaver burrows.  Lush meadows 1000 – 1600 m, typically on moderately steep to steep south-facing slopes. Avalanche tracks and meadows with evidence of fire or other disturbance, often on rocky soils. Patches of Alnvir may dominate nearby sites.  **Similar Map Classes:**   * M61S are similar shrublands dominated by Symalb and/or Rubpar. Compared to M61H they are more likely to have Acegla, Rubpar, Samrac, Symalb, Urtdio and SUPERSHRUB. Compared to M61H they are more likely to have Brosit, Carspe+, Ciredu+, Erigeron\_spp and Luparc. * M86 are wet-mesic meadows dominated by Carspe and/or Valsit. Compared to M61H they are more likely to have Polbis, Potfla+, Vacdel, Valsit and SUBSHRUB. Compared to M61H they are less likely to have Achmil, Brosit, Ciredu+, Elymus\_spp, Hermax and Thalictrum\_spp. * M85 are montane and subalpine shrublands. Compared to M61H, they are more likely to have Hiealb, Phldif, Phyemp, Sorsit, Spispl, Tsumer, Vacdel, Vacmem, Valsit, Xerten, CONIFER\_LT5, SUPERSHRUB, SUBSHRUB and RUSH. Compared to M61H they are less likely to have Achmil, Artemisia\_spp, Brosit, Ciredu+, Elymus\_spp, Hermax, Thalictrum\_spp and GRASS. * M18 and M21 are dominated or co-dominated by tall shrubs. * M66 are spare to moderately vegetated balds. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M61S**

|  |  |  |  |
| --- | --- | --- | --- |
| **M61S** | **Thimbleberry – Snowberry Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_163\_0001\_E.JPG | | Map | |
| **Summary:**  Shrub and tall forb dominated meadows. Rubpar usually dominates an open shrub layer, sometimes with Symalb (at Olympic National Park), Rosa\_spp and/or Holdis. Rubspe, Spidou, and Ribbra can be prominent on wetter sites. A lush and diverse herbaceous layer is characteristic. Pteaqu, Thalictrum\_spp, Hermax, Chaang and Urtdio are often prominent. Hydfen, Galium\_spp, Elymus\_spp, Achmil, Viogla+, Brovul+, and Disporum\_spp can be present. Valsit and Vervir can occur in subalpine settings.  Montane to subalpine (650 – 1325 m) elevations, usually on south and east-facing slopes. These shrublands often occur in the flatter runout zones of avalanche chutes and below tall shrublands (usually Alnvir dominated). Occasionally in large openings in forests on lower slopes.  Setting description.  **Similar Map Classes:**   * M61H are similar tall forb meadows. Compared to M61S they are more likely to have Brosit, Carspe+, Ciredu+, Erigeron\_spp and Luparc. Compared to M61S they are more likely to have Acegla, Rubpar, Samrac, Symalb, Urtdio and SUPERSHRUB. * M86 are wet-mesic meadows dominated by Carspe and/or Valsit. Compared to M61S they are more likely to have Carspe+, Erigeron\_spp, Luparc, Polbis, Potfla+, Vacdel, Valsit, Vervir, SUBSHRUB and SEDGE. Compared to M61S they are less likely to have Acegla, Achmil, Alnvir, Galium\_spp, Hermax, Hydfen, Pteaqu, Rubpar, Samrac, Symalb, Thalictrum\_spp, Urtdio, SUPERSHRUB, SHRUB and FERN. * M21 are Alnvir dominated tall shrublands. Compared to M61S, they are more likely to have Abiama, Alnvir, Clasib+, Cupnoo, MOSS\_spp, Rubspe, Samrac, Sorsit, Strlan, Vacmem, CONIFER\_LT5 and SUPERSHRUB. Compared to M61S, they are less likely to have Achmil, Chaang, Hermax, Pteaqu, Rubpar, Symalb, Thalictrum\_spp, Urtdio and SEDGE. * M85 are montane or subalpine shrublands with prominent Vacmem. * M66 are spare to moderately vegetated balds. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M82**

|  |  |  |  |
| --- | --- | --- | --- |
| **M82** | **Olympic Mountains Ruderal Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2011\OLYM\_142\_0002\_E.jpg | | Map | |
| **Summary:**  Exotic herbaceous vegetation. Ruderal meadows dominated by dense stands of exotic grasses such as Agrcap, Agrsto, and Holan. Includes patches of dense Carobn in wetter parts of old pastures. Exotic forbs and shrubs associated with disturbance like Ranrep+, Trifolium\_spp, Cirarv+, and Rublac are also common.  Disturbed meadows and former pastures on benches or flats in valley bottoms below 200 m. Nearby historical structures are common.  **Similar Map Classes:**   * M01 are deciduous floodplain and swamp forests. * M99 are fully developed areas, including maintained lawns. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M52**

|  |  |  |  |
| --- | --- | --- | --- |
| **M52** | **Mount Rainier Subalpine Forb – Graminoid Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2008\C\_2008\_v\C10-3774\100\_2801.JPG | | Map | |
| **Summary:**  Subalpine mixed forb-graminoid meadows with well drained soils. Antlan+ and/or Orealp co-dominant this short, often open vegetation. Potfla+, Luparc, Vacdel, and Polbis are often prominent. Other associated species include Danthonia\_spp, Gencal, Fesvir, Carnig+, Caspar+, Pedorn, Carspe+, Erigeron\_spp, Ligusticum\_spp, Vercus+, and Phlalp. Dwarf-shrubs such as Casmer or Phyemp can be present but are subordinate in importance to herbaceous species. Surrounding subalpine forests feature Abilas, Piceng, Tsumer, and Abiama, but trees are rarely scattered in the meadow itself.  Characteristically occurs on Grand Park at Mount Rainier National Park. These meadows are found in fairly flat areas with coarsely textured, drought-prone soils, or as small patches in subalpine meadows. Elevations range from 1550 to 1950 m.  **Similar Map Classes:**   * M64E are sparse alpine vegetation. Compared to M52 they are more likely to have Eripyr, Luzpip+, Poldav and Saxtol+. Compared to M52, they are less likely to have Antlan+, Carnig+, Casmer, Caspar+, Danthonia\_spp, Fesvir, Gencal, Luparc, Orealp, Pedorn, Polbis, Potfla+, Vacdel, SUBSHRUB and GRASS. * M64L are sparse alpine vegetation. Compared to M52 they are more likely to have Artemisia\_spp, Carspe+, Dasflo, Lupsel, Phldif and SHRUB. Compared to M52, they are less likely to have Antlan+, Carnig+, Casmer, Caspar+, Danthonia\_spp, Gencal, Luparc, Pedorn, Polbis, Potfla+, Vacdel and SUBSHRUB. * M86 are wet-mesic Carspe and/or Valsit meadows. Compared to M52, they are more likely to have Carspe+, Valsit, Vervir, CONIFER\_LT5, SUPERSHRUB, SHRUB and SEDGE. Compared to M52, they are less likely to have Antlan+, Casmer, Caspar+, Danthonia\_spp, Gencal, Orealp and Pedorn. * M58 are montane, subalpine, or alpine wet meadows. Compared to M52 they are more likely to have Callep, Caraqu+, Carnig+, Carspe+, Equarv+, Leppyr, MOSS\_spp, Pedgro, Salcom+, SHRUB, SEDGE and FERN. Compared to M52 they are less likely to have Antlan+, Caspar+, Danthonia\_spp, Fesvir, Luparc, Orealp and Pedorn. * M67E are dry to mesic subalpine meadows. Compared to M52 they are more likely to have Abilas, Arecap, Casmin, Erymon+, Eucled+, Fesvir, Junpar+, Lombra+, Paxmyr, Phldif, Senint, CONIFER\_LT5, SHRUB and RUSH. Compared to M52 they are less likely to have Casmer, Caspar+, Danthonia\_spp, Gencal, Orealp, Pedorn, Polbis and Potfla+. * M61H are dominated by tall mesic and wet-mesic forbs. Compared to M52, they are more likely to have Artemisia\_spp, Brosit, Chaang, Ciredu+, Elymus\_spp, Hermax, Thalictrum\_spp, Vervir, CONIFER\_GT5, SUPERSHRUB and SHRUB. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M62**

|  |  |  |  |
| --- | --- | --- | --- |
| **M62** | **Olympic Mountain Aster Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\classification\_plots\Plot 5-010\DSCF1706.JPG | | Map | |
| **Summary:**  Dry to mesic rocky meadows with Eucpau. This variably dense vegetation is dominated by Eucpau, usually with presence of Phahas, Luparc, and Casmin, and often with Carspe, Lommar, Valsit and Phldif. Species of moist subalpine meadows such as Carspe, Luparc, and Valsit are rarely more than prominent. Other common associates are Polbis, Achmil, Artemisia\_spp, Silpar, Abilas, Ciredu+, Anemone\_spp, Agoseris\_spp, Hiealb, Spispl, Epilobium\_spp, and Seddiv.  Moderately steep, open south to east-facing slopes, including colluvial fans, from 1400 – 1850 m. Soils are typically poorly developed, often rocky, with patches of talus or scree. These meadows are more common in the rain shadow of the Olympic Mountains.  **Similar Map Classes:**   * M63 sparse alpine vegetation lacks prominent Eucpau. Compared to M62 it is more likely to have Athame, Caspar+, Elmrac, Luepec, Luzpip+, MOSS\_spp, Phyemp and Saxtol+. Compared to M62 they are less likely to have Achmil, Agoseris\_spp, Anemone\_spp, Artemisia\_spp, Casmin, Ciredu+, Eucpau, Hiealb, Phldif, Polbis, Silpar, CONIFER\_LT5, SHRUB and GRASS. * M86 vegetation is dominated by Carspe and/or Valsit and lacks prominent Eucpau. Compared to M62, it is more likely to have Carspe+, Spispl, Vacdel and SEDGE. Compared to M62 it is less likely to have Artemisia\_spp, Casmin, Eucpau, Lommar and Phldif. * M67W are dry to mesic subalpine meadows at OLYM. Compares to M62 they are more likely to have Antlan+, Arecap, Junpar+, MOSS\_spp and RUSH. Compared to M62 they are more likely to have Casmin, Ciredu+, Eucpau and Valsit. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M67W**

|  |  |  |  |
| --- | --- | --- | --- |
| **M67W** | **Olympic Mountains Dry Graminoid Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_530\_001\_S.jpg | | Map | |
| **Summary:**  Dry to mesic subalpine meadows at Olympic National Park. Vegetation is a highly variable mix of forbs, short shrubs, and graminoids. Vascular plant cover ranges from sparse to moderate. Phldif, Junpar+, Fesroe, Juncom, and/or Saxbro are the most likely dominant species. Other common associates are Achmil, Luparc, Polbis, Arecap, Carspe+, Lommar, Antlan+, and Silpar. Tree species such as Cupnoo and Abilas occur in transition areas adjacent to tree islands.  These diverse meadows are most common in the upper subalpine parkland but are found from mid-elevations to the lower alpine (1400 – 2000 m). Expansive meadows or small openings on moderate to steep slopes with fairly warm south to west exposures. Soils are usually rocky, shallow, or well drained and may have exposed mineral soil and bedrock.  **Similar Map Classes:**   * M86 are wet-mesic meadows dominated by Carspe and/or Valsit. Compared to M67W they are more likely to have Ciredu+, Spispl, Valsit and Vervir. Compared to M67W they are less likely to have Antlan+, Arecap, Fesroe, Juncom, Junpar+, Lommar and Phldif. * M63 is sparse alpine vegetation. Compared to M67W it is more likely to have Athame, Elmrac, Epilobium\_spp, Luzpip+ and Phyemp. Compared to M67W it is less likely to have Achmil, Antlan+, Arecap, Fesroe, Juncom, Junpar+, Phldif, Polbis, CONIFER\_LT5 and GRASS. * M85 are montane or subalpine shrublands. Compared to M67W they are more likely to have Anamar, Cupnoo, Sorsit, Spispl, Vacdel, Vacmem, Valsit, Vervir, Xerten, SUPERSHRUB, SHRUB and SUBSHRUB. Compared to M67W they are less likely to have Antlan+, Arecap, Fesroe, Juncom, Junpar+, MOSS\_spp, Phldif, GRASS and RUSH. * M61H are mesic or wet-mesic tall forb meadows. Compared to M67W they are more likely to have Brosit, Ciredu+, Hermax, Thalictrum\_spp, Vervir and SUPERSHRUB. Compared to M67W they are less likely to have Antlan+, Arecap, Fesroe, Juncom, Junpar+, Lommar, MOSS\_spp, Phldif, CONIFER\_LT5, SUBSHRUB and RUSH. * M66 are low elevation or montane balds and other vegetated openings. Compared to M67W they are more likely to have Amealn, Arccol, Arcuva+, Cashis, Epilobium\_spp, Fravir, Frilan, Holdis, Lycsit+, Mahaqu, Racomitrium\_spp, Sedspa, Symmol, Zigadenus\_spp and SHRUB. Compared to M67W they are less likely to have Abilas, Antlan+, Arecap, Carspe+, Junpar+, Luparc, Phldif, Polbis, SEDGE and RUSH. * M74S are subalpine dwarf shrublands. Compared to M67W they are more likely to have Carnig+, Casmer, Phyemp and SUBSHRUB. Compared to M67W they are less likely to have Achmil, Arecap, Fesroe, Juncom, Junpar+, Lommar, Phldif, CONIFER\_LT5 and GRASS. * M15 are dominated by krummholz conifer trees. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M67E**

|  |  |  |  |
| --- | --- | --- | --- |
| **M67E** | **Green Fescue – Cascade Aster Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos2\12\_NOCA\_119\_0003\_W.JPG | | Map | |
| **Summary:**  Dry subalpine Fesvir-forb meadows. Fesvir is almost always present and often dominant, although forbs usually have greater cover. Abilas dominates the surrounding woodlands and tree islands and can be scattered in the meadow itself. Luparc, Eucled+, Ligusticum\_spp, and/or Eriper co-dominate with Fesvir in extensive meadows. A very short shrub layer of Paxmyr, Phldif, and/or Vacdel dominates drier, rockier sites. Other common species are Casmin, Vercus+, Silpar, Arecap, Antlan+, Junpar+, Achmil, Lombra+, Senint and Erymon+. Bare ground is a common feature. Fesvir tends to reach peak cover later than forbs, these meadows may appear even more forb dominated early in the growing season.  Occurs on cold, dry to mesic sites at higher elevations (1575 – 2100 m), typically associated with south-facing or exposed slopes where snow cover is blown or melted off fairly early in the summer. These meadows are most abundant east of the Cascade crest and can cover large hillsides or form smaller patches between tree islands.  **Similar Map Classes:**   * M86 are similar wet-mesic subalpine meadows. Compared to M67E they are more likely to have Carspe+, Polbis, Valsit, Vervir and SEDGE. Compared to M67E they are less likely to have Antlan+, Arecap, Fesvir, Junpar+, Lombra+, Paxmyr, Phldif and Senint. * M85 are subalpine shrublands. Compared to M67E they are more likely to have Anamar, Chaang, Cupnoo, Sorsit, Spispl, Tsumer, Vacmem, Valsit, Vervir, Xerten, SUPERSHRUB and SHRUB. Compared to M67E they are less likely to have Antlan+, Arecap, Erigeron\_spp, Fesvir, Ligusticum\_spp, Lombra+, Senint, Vercus+ and GRASS. * M66 are low elevation or montane vegetated balds. Compared to M67E they are more likely to have Arcuva+, Cryacr, LICHEN\_spp, Lycsit+, MOSS\_spp, Pinpon, Psemen, Psespi, Racomitrium\_spp, Zigadenus\_spp and FERN. Compared to M67E they are less likely to have Abilas, Antlan+, Arecap, Casmin, Erigeron\_spp, Erymon+, Eucled+, Fesvir, Junpar+, Ligusticum\_spp, Luparc, Phldif, Senint, Vacdel, Vercus+ and RUSH. * M74A are alpine heather drawf shrublands. Compared to M67E they are more likely to have Carnig+, Casmer, Luepec, Luzpip+, Phyemp, SEDGE and FERN. Compared to M67E they are less likely to have Achmil, Arecap, Casmin, Erigeron\_spp, Erymon+, Eucled+, Fesvir, Ligusticum\_spp, Lombra+, Paxmyr, Phldif, Senint, SHRUB and GRASS. * M17N, M24, and M17M are woodlands with prominent subalpine conifers. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M74S**

|  |  |  |  |
| --- | --- | --- | --- |
| **M74S** | **Subalpine Mountain Heather Dwarf Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_487\_0003\_W.JPG | | Map | |
| **Summary:**  Subalpine heather meadow. Dwarf subalpine shrublands dominated by Phyemp and/or Vacdel. Casmer may be present to co-dominant. Small Tsumer, Cupnoo, and/or Abilas are usually scattered, encroaching on the meadow from nearby tree islands, but taller trees and shrubs like Vacdel and Rhoalb are absent or very low in cover. Taller Vacdel and lush herbs (Luparc, Carspe+, Erymon+, Polbis, Erigeron\_spp, Potfla+, Valsit) can be prominent. Other frequent community members include Luepec, Hiegra, Vahatr, and Caspar+. These shrublands matrix with and are mapped with Carnig dominated snowmelt depressions at Mount Rainier National Park.  Floristic description.  Colluvium or bedrock only rarely covers more than half of the ground surface. These shrublands often occur above M47 forests and as openings within subalpine parkland mosaic, 1450 – 1950 m. They are more common west of the cascade crest or Olympic rain shadow on gentle to moderate slopes with well-drained soils, often without recent disturbance.  **Similar Map Classes:**   * M74A are very similar alpine dwarf shrublands. Compared to M74S they are more likely to have Carnig+ (at OLYM and NOCA) and less likely to have Cupnoo, Erigeron\_spp, Erymon+, Luparc, Tsumer and Vacdel. * M47 woodlands have very similar floristics but feature islands of full statured trees and montane shrubs. Compared to M74S they are more likely to have Abiama, Cupnoo, Rhoalb, Tsumer, Vacmem, CONIFER\_GT5 and SHRUB. Compared to M74S they are less likely to have Carspe+, Erigeron\_spp, Hiegra, Polbis, GRASS and SEDGE. * M85 are montane or subalpine shrublands. Compared to M74S they are more likely to have Anamar, Chaang, Hiealb, Phldif, Sorsit, Spispl, Vacmem, Vervir, Xerten, SUPERSHRUB and SHRUB. Compared to M74S they are less likely to have Casmer, Luepec and Phyemp. * M15 are dominated by krummholz conifer trees. * M63 is sparse alpine vegetation. Compared to M74S it is more likely to have Athame and Saxtol+. Compared to M74S it is less likely to have Abilas, Casmer, Cupnoo, Erigeron\_spp, Erymon+, Luparc, Phyemp, Polbis, Tsumer, Vacdel and SUBSHRUB. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M85**

|  |  |  |  |
| --- | --- | --- | --- |
| **M85** | **Big Huckleberry Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_385\_0830\_W.JPG | | Map | |
| **Summary:**  Dry to mesic upper montane and subalpine shrublands. Dominated by Vacmem and/or Vacdel. Luparc and Sorsit are usually present to prominent. Xerten can co-dominate at Olympic or Mount Rainier National Parks. Conifers Abilas, Cupnoo, and/or Tsumer are often scattered, spillover from the surrounding forests. Phyemp and/or Paxmyr can be prominent, but are rarely co-dominant. Common associated species include Chaang, Vervir, Carspe+, Phldif, Arnlat+, Spispl, Polbis, Hiealb, Anamar, Rublas, Pedbra, Eucled+, Junpar+, and Penser+.  Upper montane and subalpine (1350 – 1850 m) dry to mesic shrublands. Often found on south or west facing slopes with signs of past fire, including exposed mineral soil.  **Similar Map Classes:**   * M74S are similar heather dwarf shrublands. Compared to M85 they are more likely to have Casmer, Luepec and Phyemp. Compared to M85 they are less likely to have Anamar, Chaang, Hiealb, Phldif, Sorsit, Spispl, Vacmem, Vervir, Xerten, SUPERSHRUB and SHRUB * M86 are wet-mesic subalpine meadows. Compared to M85 they are more likely to have Carspe+, Potfla+ and SEDGE. Compared to M85 they are less likely to have Anamar, Arnlat+, Carspe+, Hiealb, Luparc, Phldif, Phyemp, Polbis, Spispl, Vacdel, Vacmem, Xerten, SUBSHRUB and SEDGE. * M67E are dry to mesic subalpine meadows at NOCA and MORA. Compared to M85 they are more likely to have Antlan+, Arecap, Erigeron\_spp, Fesvir, Ligusticum\_spp, Lombra+, Senint, Vercus+ and GRASS. Compared to M85 they are less likely to have Anamar, Chaang, Cupnoo, Sorsit, Spispl, Tsumer, Vacmem, Valsit, Vervir, Xerten, SUPERSHRUB and SHRUB * M67W are dry to mesic subalpine meadows at OLYM. Compared to M85 they are more likely to have Antlan+, Arecap, Fesroe, Juncom, Junpar+, MOSS\_spp, Phldif, GRASS and RUSH. Compared to M85 they are less likely to have Anamar, Cupnoo, Sorsit, Spispl, Vacdel, Vacmem, Valsit, Vervir, Xerten, SUPERSHRUB, SHRUB and SUBSHRUB. * M21 are tall shrublands with prominent Alnvir. Alnvir, Athfil, Clasib+, Dicfor, Galium\_spp, Mitella\_spp, Rubspe, Samrac, Strlan, Viogla+, SUPERSHRUB and FERN. Compared to M85 they are less likely to have Anamar, Arnlat+, Carspe+, Hiealb, Luparc, Phldif, Phyemp, Polbis, Spispl, Vacdel, Vacmem, Xerten, SUBSHRUB and SEDGE. * M47 woodlands have very similar floristics but feature islands of full statured trees and montane shrubs. Compared to M85 they are more likely to have Abiama, Casmer, Cupnoo, Luepec, MOSS\_spp, Tsumer and CONIFER\_GT5. Compared to M85 they are less likely to have Anamar, Carspe+, Chaang, Hiealb, Phldif, Polbis, Sorsit, Spispl, SUPERSHRUB, GRASS and SEDGE. * M06 are woodlands and forests that can have similar understory composition. Compared to M85 they are more likely to have Abiama, Abilas, Cupnoo, Luzgla+, Ortsec, Pedrac, Piceng, Rublas and CONIFER\_GT5. Compared to M85 they are less likely to have Anamar, Carspe+, Sorsit, Spispl, Xerten and SEDGE. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M86**

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| --- | --- | --- | --- |
| **M86** | **Showy Sedge – Sitka Valerian Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_125\_0002\_E.JPG | | Map | |
| **Summary:**  Wet-mesic subalpine meadows. Valsit and/or Carspe dominate the lush herbaceous layer. Luparc, Vervir, Polbis, Spispl, Ligusticum\_spp, and Vacdel can be prominent to co-dominant. Phyemp or Sorsit can be scattered, usually at low cover. Many different forbs can be present, including Erigeron\_spp, Potfla+ and Arnlat. Salcom+ is occasionally prominent in seeps.  Lush subalpine (1250 – 1900 m) meadows. Often in parklands interspersed with tree islands and on steep slopes bordered by talus. They occur on concave mid and lower slopes of all slopes and aspects.  **Similar Map Classes:**   * M85 are montane or subalpine shrublands. Compared to M86 they are more likely to have Hiealb, Sorsit, Tsumer, Vacmem, Xerten and SUPERSHRUB. Compared to M86 they are less likely to have Carspe+, Potfla+ and SEDGE. * M58 are similar subalpine wet meadows. Compared to M86 they are more likely to have Callep, Caraqu+, Carnig+, Equarv+, Gencal, Leppyr, MOSS\_spp, Pedgro and Salcom+. Compared to M86 they are less likely to have Luparc, Valsit, Vervir and SUPERSHRUB. * M63 is sparse alpine vegetation at all parks. Compared to M86 it is more likely to have Athame, Carnig+, Casmer, Luzpip+, Saxtol+ and FERN. Compared to M86 it is less likely to have Carspe+, Erigeron\_spp, Luparc, Polbis, Potfla+, Vacdel, Valsit, Vervir, SUPERSHRUB, SHRUB, GRASS and SEDGE. * M73 is sparse talus vegetation at NOCA. Compared to M86 is it more likely to have Alnvir, Arudio, Chalat and Oxydig. Compared to M86 it is less likely to have Abilas, Carspe+, Erigeron\_spp, Luparc, Pedbra, Potfla+, Thalictrum\_spp, Vacdel, Vervir, SHRUB, GRASS and SEDGE. * M06 are woodlands and forests that can have similar understory composition. Compared to M86 they are more likely to have Abiama, Abilas, Cupnoo, Luzgla+, Ortsec, Paxmyr, Pedrac, Piceng, Rhoalb, Rublas, Tsumer, Vacmem, CONIFER\_GT5, CONIFER\_LT5 and RUSH. Compared to M86 they are less likely to have Carspe+, Erigeron\_spp, Polbis, Potfla+, Vervir and SEDGE. * M67W are dry to mesic subalpine meadows at OLYM. Compared to M86 they are more likely to have Antlan+, Arecap, Fesroe, Juncom, Junpar+, Lommar and Phldif. Compared to M86 they are less likely to have Ciredu+, Spispl, Valsit and Vervir. * M67E are dry to mesic subalpine meadows at NOCA and MORA. Compared to M86 they are more likely to have Antlan+, Arecap, Fesvir, Junpar+, Lombra+, Paxmyr, Phldif and Senint. Compared to M86 they are less likely to have Carspe+, Polbis, Valsit, Vervir and SEDGE. * M52 are subalpine meadows at Mount Rainier National Park. Compared to M86 they are more likely to have Antlan+, Carnig+, Casmer, Danthonia\_spp, Gencal, Orealp and Pedorn. Compared to M86 they are less likely to have Carspe+, Eucled+, Valsit, Vervir and SEDGE. * M61H are subalpine meadows at all parks. Compared to M86 they are more likely to have Achmil, Brosit, Ciredu+, Elymus\_spp, Hermax and Thalictrum\_spp. Compared to M86 they are less likely to have Polbis, Potfla+, Vacdel, Valsit and SUBSHRUB. * M62 are subalpine meadows with prominent Eucpau at OLYM. Compared to M86 they are more likely to have Artemisia\_spp, Casmin, Eucpau, Lommar and Phldif. Compared to M86 they are less likely to have Carspe+, Spispl, Vacdel and SEDGE. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |
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**M73**

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| --- | --- | --- | --- |
| **M73** | **Sparse Herbaceous Talus and Fellfield Vegetation** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_109\_0015\_S.JPG | | Map | |
| **Summary:**  Subalpine talus slope vegetation. The typically sparse vegetation is dominated by tall forbs that grow in tufts between rocks. At least one of Athame, Valsit, Epilobium\_spp, Chalat, Oxydig, Arudio, or Petfri is prominent. Many other subalpine forbs and shrubs can be present to prominent depending on nearby seed sources and hydrology, including Sentri+, Mimlew+, Arudio, Arnlat+, Vercus+, Vahatr, and Sorsit. Patches of Alnvir, Vacmem, Phyemp, Carspe, and Luepec can all be present, especially if common nearby, but these species are never dominant. Similar vegetation at Olympic National Park with Athame or Elmrac is included in M63.  On steep talus slopes at moderate to high elevation (1250 – 1600 m). These sites are north facing, typically moist or with snowmelt-fed streams. The angular rocks of these sites are deep, and soil development is minimal. They are often found at the base of cliffs, above lakes or depressional basins.  **Similar Map Classes:**   * M74A are alpine heather dwarf shrublands. Compared to M73 they are more likely to have Carnig+, Casmer, Erigeron\_spp, Hiegra, Junpar+, LICHEN\_spp, Luzpip+, Lycsit+, Phyemp, Vacdel, SUBSHRUB, SEDGE and RUSH. Compared to M74A they are less likely to have Achmil, Alnvir, Arnlat+, Arudio, Athame, Chalat, Epilobium\_spp, Mimlew+, Oxydig, Sentri+, Sorsit, Vacmem, Valsit, Vervir, SUPERSHRUB and SHRUB. * M67E are subalpine meadows. Compared to M73 they are more likely to have Abilas, Agoseris\_spp, Antlan+, Arecap, Casmin, Erigeron\_spp, Erymon+, Fesvir, Hiesco+, Junpar+, Ligusticum\_spp, Lombra+, Luparc, Luzgla+, Paxmyr, Penpro+, Senint, Silpar, Vacdel, Vacmem, CONIFER\_GT5, SHRUB, SUBSHRUB, GRASS and RUSH. Compared to M73 they are less likely to have Alnvir, Arudio, Athame, Chalat, Epilobium\_spp, Luepec, Mimlew+, Oxydig, Sentri+, Vahatr, Valsit and FERN. * M86 are wet-mesic subalpine meadows. Compared to M73 they are more likely to have Abilas, Carspe+, Erigeron\_spp, Luparc, Pedbra, Potfla+, Thalictrum\_spp, Vacdel, Vervir, SHRUB, GRASS and SEDGE. Compared to M73 they are less likely to have Alnvir, Arudio, Chalat and Oxydig. * M63 is sparse alpine vegetation. Compared to M73 it is more likely to have Carnig+, Casmer, Junmer+, Junpar+, Luzpip+, Phyemp, Saxtol+, SEDGE and RUSH. Compared to M73 it is less likely to have Achmil, Arnlat+, Arudio, Athame, Chalat, Epilobium\_spp, Luepec, Mimlew+, Oxydig, Sentri+, Vahatr, Valsit, Vercus+, Vervir, FORB, GRASS and RUSH. * M50 is montane sparse talus vegetation. Compared to M73 it is more likely to have Abilas, Acecir, Amealn, Cryacr, Cupnoo, LICHEN\_spp, Paxmyr, Psemen, Rubleu, CONIFER\_GT5, CONIFER\_LT5 and BROADLEAF\_LT5. Compared to M73 is it less likely to have Achmil, Arnlat+, Arudio, Athame, Chalat, Epilobium\_spp, Luepec, Mimlew+, Oxydig, Sentri+, Vahatr, Valsit, Vercus+, Vervir, FORB, GRASS and RUSH. * M58 are montane, subalpine, or alpine wet meadows. Compared to M73 they are more likely to have Abilas, Agrostis\_spp, Callep, Caraqu+, Carnig+, Carspe+, Casmer, Equarv+, Erigeron\_spp, Junmer+, Kalmic, Leppyr, Phyemp, Potfla+, Salcom+, Vacdel, SHRUB, SUBSHRUB, GRASS, SEDGE and RUSH. Compared to M73 they are less likely to have Achmil, Alnvir, Arnlat+, Arudio, Athame, Chalat, Oxydig, Sentri+, Vacmem, Valsit, Vervir and SUPERSHRUB. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M63**

|  |  |  |  |
| --- | --- | --- | --- |
| **M63** | **Sparse Alpine Vegetation** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_125\_0003\_S.JPG | | Map | |
| **Summary:**  Sparse alpine vegetation. This open sparse vegetation is found on rocky exposed sites above closed treeline, although scattered krummholz and/or skirted Abilas are often found nearby. Dominated by Luepec, Saxtol+, Athame (OLYM only), and/or Elmrac (OLYM only). Phyemp or Casmer can be prominent, but are never dominant. Other common components of the sparse herbaceous layer are Luzpip+, Junpar+, Carspe+, Carnig+, Vahatr, Epilobium\_spp, Cryacr, and Hiegra. Snow melt seeps (when present) are concentrated with dense moss and sometimes Junmer. Vegetation cover is low at the patch scale, but clumps of vegetation can be dense. Plants are short and tufted, only sometimes reaching higher than surface rock chunks.  Sparsely vegetated alpine and subalpine (1300 – 2100 m) communities where rock (talus, scree, and/or bedrock) and bare ground have more cover than vegetation. These communities occur on exposed ridges as well as in fellfields and snowbeds. Very long-lasting snowpacks are common. Slopes are gentle to moderately steep and can occur on all aspects. The most noteworthy vegetation in snowbeds may be mat-forming perennial forbs, while in fellfields vegetation typically is restricted to depressions or gentle slopes between exposed rocks.  **Similar Map Classes:**   * M64L is sparse alpine vegetation at MORA. Compared to M63 it is more likely to have Artemisia\_spp, Lupsel, Orealp and Pedcon+. Compared to M63 it is less likely to have Antlan+, Casmer, Junpar+, Luepec, Luparc, Luzpip+, Phyemp, SUBSHRUB and RUSH. * M64E is sparse alpine vegetation at MORA. Compared to M63 it is more likely to have Eripyr and Poldav. Compared to M63 it is less likely to have Abilas, Casmer, Erigeron\_spp, Luepec, Luparc, Phldif, Phyemp, CONIFER\_LT5 and SUBSHRUB. * M74A are alpine heather dwarf shrublands. Compared to M63 they are more likely to have Carnig+, Casmer, Hiegra, Phyemp, Vacdel and SUBSHRUB. Compared to M63 they are less likely to have Athame and Saxtol+. * M73 is sparse talus vegetation at NOCA. Compared to M63 it is more likely to have Achmil, Alnvir, Arnlat+, Arudio, Chalat, Epilobium\_spp, Oxydig, Sentri+, Sorsit, Vacmem, Valsit and SUPERSHRUB. Compared to M73 it is less likely to have Carnig+, Casmer, Junmer+, Junpar+, Luzpip+, Phyemp, Saxtol+, SEDGE and RUSH. * M58 are montane, subalpine, or alpine wet meadows. Compared to M63 they are more likely to have Callep, Caraqu+, Carnig+, Equarv+, Erigeron\_spp, Gencal, Leppyr, Pedgro, Potfla+, Salcom+, Vacdel, SHRUB and SEDGE. Compared to M63 they are less likely to have Athame, Luepec, Luzpip+ and Saxtol+. * M15 are dominated by krummholz conifer trees. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M64E**

|  |  |  |  |
| --- | --- | --- | --- |
| **M64E** | **Alpine Buckwheat – Davis Knotweed Pumice Fellfield Vegetation** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2009\W\_White River 08-17-09\09\_MORA\_WR070\_OPP\_002\_S.JPG | | Map | |
| **Summary:**  Eripyr–Poldav Pumice Fellfield. Eripyr and/or Poldav are most abundant of the low-growing, sparse vegetation. Carspe, Saxtol+, Junpar+, Luzpip+, Phyemp, Penpro+, Agoseris\_spp, Lupsel and Orealp occur often, but at low cover. Krummholz Abilas may be present nearby in more sheltered locations.  These fellfields are found above treeline (1900 – 2250 m), mostly on the northwest side of Mount Rainier where snow persist late into summer. Moderately steep, rocky, well-drained soils. Exposed mineral soil and pumice are common. More common on east-facing slopes.  **Similar Map Classes:**   * M64L is very similar alpine sparse vegetation. Compared to M64E it is more likely to have Achmil, Artemisia\_spp, Dasflo, Erigeron\_spp, Lupsel, Orealp, Pedcon+, Phldif, SHRUB and GRASS. Compared to M64E it is less likely to have Antlan+, Eripyr, Junpar+, Luzpip+, Poldav, Saxtol+ and RUSH. * M63 is sparse alpine vegetation. Compared to M64E it is more likely to have Abilas, Casmer, Erigeron\_spp, Luepec, Luparc, Phldif, Phyemp, CONIFER\_LT5 and SUBSHRUB. Compared to M64E it is less likely to have Eripyr and Poldav. * M67E are dry to mesic subalpine meadows. Compared to M64E they are more likely to have Abilas, Anemone\_spp, Antlan+, Erigeron\_spp, Eucled+, Fesvir, Ligusticum\_spp, Luparc, Phldif, Phyemp, Polbis, Potfla+, CONIFER\_LT5, SUBSHRUB and GRASS. Compared to M64E they are less likely to have Eripyr, Junpar+, Poldav and Saxtol+. * M74A are alpine heather dwarf shrublands. Compared to M64E they are more likely to have Abilas, Arcuva+, Casmer, Caspar+, Empnig, Juncom, Luparc, Lupsel, Pedcon+, Pedorn, Phyemp, Vacdel, CONIFER\_LT5 and SUBSHRUB. Compared to M64E they are less likely to have Eripyr, Junpar+, Poldav and Saxtol+. * M15 are dominated by krummholz conifer trees. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M64L**

|  |  |  |  |
| --- | --- | --- | --- |
| **M64L** | **Spreading Phlox – Prairie Lupine Pumice Fellfield Vegetation** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\mora\nps\_all\a03\_coll\plot\_photos\2009\S\_Sunrise area 09\_09\_09 & 09\_14 TO 09\_15\09\_MORA\_S096\_022\_002\_S.jpg | | Map | |
| **Summary:**  Phldif – Lupsel Pumice Fellfield. Lupsel and Phldif co-dominate a sparse to moderately dense cover of short vegetation. Carspe, Orealp, Pedcon+, Vercus+, Erigeron\_spp, Achmil, Dasflo, Poldav, Fesvir, Potfla+, and Danthonia\_spp occur often, but at low cover. At its highest elevations and on the most unaccommodating sites, this map class includes additional alpine species such as Minuartia\_spp and Eriaur.  These fellfields are found above treeline (1950 – 2250 m), mostly on the northwest side of Mount Rainier where snow persist late into summer. More common on west-facing slopes. Moderately steep, rocky, well-drained soils. Exposed mineral soil and pumice are common.  **Similar Map Classes:**   * M64E is very similar alpine sparse vegetation. Compared to M64L it is more likely to have Antlan+, Eripyr, Junpar+, Luzpip+, Poldav, Saxtol+ and RUSH. Compared to M64L it is less likely to have Achmil, Artemisia\_spp, Dasflo, Erigeron\_spp, Lupsel, Orealp, Pedcon+, Phldif, SHRUB and GRASS. * M63 is sparse alpine vegetation. Compared to M64L it is more likely to have Antlan+, Casmer, Junpar+, Luepec, Luparc, Luzpip+, Phyemp, SUBSHRUB and RUSH. Compared to M64L it is less likely to have Artemisia\_spp, Lupsel, Orealp and Pedcon+. * M67E are dry to mesic subalpine meadows. Compared to M64L they are more likely to have Anemone\_spp, Antlan+, Eucled+, Fesvir, Ligusticum\_spp, Luparc, Phyemp, Polbis, Potfla+, Vercus+ and SUBSHRUB. Compared to M64L they are less likely to have Artemisia\_spp, Dasflo, Lupsel and SHRUB. * M74A are alpine heather dwarf shrublands. Compared to M64L they are more likely to have Arcuva+, Casmer, Caspar+, Empnig, Juncom, Luepec, Luparc, Pedorn, Phyemp, Vacdel and SUBSHRUB. Compared to M64L they are less likely to have Artemisia\_spp, Erigeron\_spp and Phldif. * M15 are dominated by krummholz conifer trees. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M74A**

|  |  |  |  |
| --- | --- | --- | --- |
| **M74A** | **Alpine Heather Parkland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_137\_0002\_E.JPG | | Map | |
| **Summary:**  Alpine heather parkland. Dwarf alpine shrublands dominated by Phyemp and/or Casmer. Vacdel may be co-dominant and Luepec is usually prominent. Small Abilas or Tsumer trees can be widely scattered, but the site is unlikely to mature into a forest. Taller Vacdel and lush herbs are rarely prominent. Other frequent community members include Carnig+, Carspe+, Luzpip+, Saxtol+, Hiegra, Vahatr, Lycsit+, Junpar+, Erigeron\_spp, and Antlan+. Carnig dominated snowmelt depressions at Olympic and North Cascades National Parks matrix with and are mapped with these shrublands.  Colluvium or bedrock sometimes covers more than half of the ground surface. These shrublands often occur above M74S shrublands, 1475 – 2125 m. They are more common west of the cascade crest or Olympic rain shadow on gentle to moderate slopes with well-drained soils, often without recent disturbance.  **Similar Map Classes:**   * M74S are very similar subalpine dwarf shrublands. Compared to M74A they are more likely to have Cupnoo, Erigeron\_spp, Erymon+, Luparc, Tsumer and Vacdel and less likely to have Carnig+ (at MORA). * M63 is similar sparse alpine vegetation. Compared to M74A it is more likely to have Athame (at OLYM and MORA) and Saxtol+ and less likely to have Carnig+, Casmer, Hiegra, Phyemp, Vacdel and SUBSHRUB. * M47 woodlands have similar floristics but feature islands of full statured trees and montane shrubs. Compared to M74A they are more likely to have Abiama, Abilas, Cupnoo, Erymon+, Rhoalb, Sorsit, Tsumer, Vacdel, Vacmem, CONIFER\_GT5, CONIFER\_LT5, SUPERSHRUB and SHRUB. Compared to M74A they are less likely to have Carnig+ (at MORA), Carspe+, Hiegra, Luzpip+, Saxtol+, SEDGE and FERN. * M64E are sparse alpine vegetation at MORA. Compared to M74A they are more likely to have Eripyr, Junpar+, Poldav and Saxtol+. Compared to M64E they are less likely to have Abilas, Arcuva+, Casmer, Caspar+, Empnig, Juncom, Luparc, Lupsel, Pedcon+, Pedorn, Phyemp, Vacdel, CONIFER\_LT5 and SUBSHRUB. * M64L are sparse alpine vegetation at MORA. Compared to M74A they are more likely to have Artemisia\_spp, Erigeron\_spp and Phldif. Compared to M64L they are less likely to have Arcuva+, Casmer, Caspar+, Empnig, Juncom, Luepec, Luparc, Pedorn, Phyemp, Vacdel and SUBSHRUB. * M15 are dominated by krummholz conifer trees. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M39H**

|  |  |  |  |
| --- | --- | --- | --- |
| **M39H** | **Lowland Wet Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_423\_0005\_E.JPG | | Map | |
| **Summary:**  Wet meadows or marshes at low to mid elevations. Wetland sedges such as Caraqu, Carlen, or Carutr are always present, averaging 55% cover. Other common species tend to be associated with standing water such as Scimic, Mentri, Equarv+, and Nuplut. Spidou and Salsit+ are common in adjacent slightly drier areas and can be scattered at low cover within these wetlands. In large river valleys, these wetlands form a complex with shrub swamps or swampy floodplain forests.  These wetlands are found on pond or lake margins, in backwaters along rivers, upstream of beaver dams, and in occasional midslope depressions up to 1200 m. Soils are saturated, with standing water much of the year.  **Similar Map Classes:**   * M58 are montane, subalpine, or alpine wet meadows. Compared to M39H they are more likely to have Abilas, Callep, Carnig+, Carspe+, Equarv+, Erigeron\_spp, Gencal, Leppyr, MOSS\_spp, Pedgro, Phyemp, Potfla+, Salcom+, Vacdel, Vercus+ and SUBSHRUB. Compared to M39H they are less likely to have Caraqu+, Equhye+, Salsit+, Scimic, Spidou, Thupli and SUPERSHRUB. * M39H are similar wet meadows with prominent shrubs. Compared to M39H they are more likely to have Alnvir, Athfil, Corser, Equarv+, Loninv, Lysame, Rubpar, Rubspe, Salsit+ and SUPERSHRUB. Compared to M39H they are less likely to have Equhye+. * M81 are coastal bogs at OLYM. Compared to M39H they are more likely to have Blespi, Carobn+, Coruna, Empnig, Gausha, Kalmic, Ledum\_spp, Linbor, Lysame, Maidil, Malfus, Pteaqu, Rhapur, Sphagnum\_spp, Thupli, Tsuhet, Vacovat, CONIFER\_GT5, CONIFER\_LT5, SUPERSHRUB, SHRUB, SUBSHRUB and FERN. Compared to M39H they are less likely to have Caraqu+, Epilobium\_spp, Mimgut+, Scimic and GRASS. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M39S**

|  |  |  |  |
| --- | --- | --- | --- |
| **M39S** | **Lowland Wet Shrubland** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2012\_NOCA\_Photos\12\_NOCA\_423\_0011\_N.JPG | | Map | |
| **Summary:**  Riverine tall shrublands and shrub swamps at low to mid elevations. Spidou, Salsit+ and/or Corser (most common at North Cascades National Park) dominate a dense tall shrub layer (average cover of 75%). Wetland sedges such as Caraqu, Carlen, or Carutr can form a dense lower stratum, averaging 30% cover. Athfil, Rubspe, and Lysame are common associates. Trees such as Alnrub and Thupli are often found nearby.  These wetlands are found ringing herbaceous marshes, in narrow patches along major river channels, upstream of beaver dams, on irrigated toeslopes, and in rare midslope depressions below 1100 m. In large river valleys, these wetlands form a complex with open herbaceous wetlands and swampy floodplain forests. Soils are poorly drained and saturated or well drained but frequently flooded.  **Similar Map Classes:**   * M39H are similar wet meadows without prominent shrubs. Compared to M39S they are more likely to have Equhye+. Compared to M39S they are less likely to have Alnvir, Athfil, Corser, Equarv+, Loninv, Lysame, Rubpar, Rubspe, Salsit+ and SUPERSHRUB. * M58 are montane, subalpine, or alpine wet meadows. Compared to M39S they are more likely to have Abilas, Callep, Carnig+, Carspe+, Erigeron\_spp, Gencal, Leppyr, MOSS\_spp, Pedgro, Phyemp, Potfla+, Salcom+, Vacdel, Vercus+, SUBSHRUB and RUSH. Compared to M39S they are less likely to have Alnvir, Athfil, Corser, Loninv, Lysame, Rubpar, Rubspe, Salsit+, Spidou, Thupli, BROADLEAF\_GT5 and SUPERSHRUB. * M81 are coastal bogs at OLYM. Compared to M39S they are more likely to have Blespi, Carobn+, Coruna, Empnig, Gausha, Kalmic, Ledum\_spp, Linbor, Lysame, Maidil, Malfus, MOSS\_spp, Picsit, Pteaqu, Rhapur, Sphagnum\_spp, Thupli, Tsuhet, Vacovat, CONIFER\_GT5, CONIFER\_LT5, SUBSHRUB and SEDGE. Compared to M39H they are less likely to have Alnrub+, Athfil, Corser, Delphinium\_spp, Elymus\_spp, Equarv+, Galium\_spp, Mimgut+, Rosa\_spp, Rubspe, Salsit+, Stacha, BROADLEAF\_GT5 and SUPERSHRUB. * M21 are tall shrublands dominated by Alnvir. Compared to M39S they are more likely to have Abiama, Alnvir, Clasib+, Cupnoo, Mitella\_spp, Rubspe, Samrac, Sorsit, Strlan, Vacmem, Vervir, Viogla+ and CONIFER\_LT5. Compared to M39S they are less likely to have Caraqu+, Corser, Equarv+, Loninv, Lysame, Salsit+, Spidou, Thupli, BROADLEAF\_GT5 and SEDGE. * M01Y are vegetated gravel bars and riverbanks. Compared to M39H they are more likely to have Alnrub+, Anamar, Fravir, Hyprad, Montia\_spp, MOSS\_spp, Plalan, Rumace+ and BROADLEAF\_LT5. Compared to M39S they are less likely to have Athfil, Caraqu+, Corser, Loninv, Lysame, Rubpar, Rubspe, Spidou, Thupli, SHRUB, SEDGE and FERN. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M81**

|  |  |  |  |
| --- | --- | --- | --- |
| **M81** | **Coastal Bog** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2011\OLYM\_014\_0012\_S.jpg | | Map | |
| **Summary:**  Coastal bogs and fens. Conifers Thupli and Tsuhet range from absent on wetter sites to prominent but stunted in forested wetlands (average overstory conifer cover of 18%). Picsit is often present in small amounts. Ledgro, Kalmic, Carobn, and Sphagnum\_spp are indicators of this map class and each can dominate the understory. Woody plants from the surrounding forest (e.g. conifers, Gausha, Vacovat) are usually present and clustered on higher surfaces (hummocks and down wood). Linbor is usually present at low cover. Common herbs include Blespi (usually prominent), Coruna, Pteaqu, Lysame, and Maidil.  Soils are wet, peaty, and usually acidic. Sites are coastal and flat, usually with poor drainage.  **Similar Map Classes:**   * M39H are wet meadows at all parks. Compared to M81 they are more likely to have Caraqu+, Epilobium\_spp, Mimgut+, Scimic and GRASS. Compared to M81 they are less likely to have Blespi, Carobn+, Coruna, Empnig, Gausha, Kalmic, Ledum\_spp, Linbor, Lysame, Maidil, Malfus, Pteaqu, Rhapur, Sphagnum\_spp, Thupli, Tsuhet, Vacovat, CONIFER\_GT5, CONIFER\_LT5, SUPERSHRUB, SHRUB, SUBSHRUB and FERN. * M39S are wet shrublands at all parks. Compared to M81 they are more likely to have Alnrub+, Athfil, Corser, Delphinium\_spp, Elymus\_spp, Equarv+, Galium\_spp, Mimgut+, Rosa\_spp, Rubspe, Salsit+, Stacha, BROADLEAF\_GT5 and SUPERSHRUB. Compared to M81 they are less likely to have Blespi, Carobn+, Coruna, Empnig, Gausha, Kalmic, Ledum\_spp, Linbor, Lysame, Maidil, Malfus, MOSS\_spp, Picsit, Pteaqu, Rhapur, Sphagnum\_spp, Thupli, Tsuhet, Vacovat, CONIFER\_GT5, CONIFER\_LT5, SUBSHRUB and SEDGE. * M45 are coastal conifer forests. Compared to M81 they are more likely to have Rubspe, Vacovat and Vacpar. Compared to M81 they are less likely to have Carobn+, Empnig, Kalmic, Ledum\_spp, Linbor, Pteaqu, Sphagnum\_spp, Spidou, SUBSHRUB and SEDGE. * M27C are coastal conifer forests. Compared to M81 they are more likely to have Alnrub+, Rubspe, Vacpar and BROADLEAF\_GT5. Compared to M81 they are less likely to have Carobn+, Coruna, Empnig, Kalmic, Ledum\_spp, Linbor, Malfus, Pteaqu, Sphagnum\_spp, Spidou, SUBSHRUB and SEDGE. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M58**

|  |  |  |  |
| --- | --- | --- | --- |
| **M58** | **Subalpine Wet Meadow** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2012\Lena\_Lake\_Tour\12\_OLYM\_726\_0008\_E.jpg | | Map | |
| **Summary:**  Montane, subalpine, or alpine wet meadows. Vegetation is dominated by sedges and low forbs, sometimes with co-dominant Salcom, Salbar, Spispl, or Kalmic. Carex spp. (Carnig, Carill, Carspe, and sometimes Caraqu, Carutr, or Carlen in deeper water) often form a dominant mat. Soils are peaty and moss (including Sphagnum\_spp) is often abundant. Prominent forbs include Potfla+, Callep, Leppyr. Composition is variable, and depends on surrounding vegetation, hydrology, and soils. The following species are each present in more than a quarter of training plots: Pedgro, Vercus+, Erigeron\_spp, Equarv+, Gencal, Dodecatheon\_spp, Polbis, Spispl, Luepec, and Agrostis\_spp. Dwarf shrubs (Phyemp, Casmer, and Vacdel) and subalpine trees (often Abilas) are commonly present on hummocks. Sites fed by flowing or subsurface water typically have higher forb diversity than those fed by snowmelt.  Sites are flat, concave or gently inclined, with poorly drained soils. These wetlands occur in small depressions below late-melting snow patches, adjacent to lakes and streambanks, near seeps/springs, and in wet meadows. Elevations typically range from 1500 (1200 at Mount Rainier) to 1850 m.  **Similar Map Classes:**   * M63 is sparse alpine vegetation. Compared to M58 it is more likely to have Athame (at OLYM and MORA), Luepec, Luzpip+ and Saxtol+. Compared to M58 it is less likely to have Callep, Caraqu+, Carnig+, Equarv+, Erigeron\_spp, Gencal, Leppyr, Pedgro, Potfla+, Salcom+, Vacdel, SHRUB and SEDGE. * M86 are wet-mesic subalpine meadows. Compared to M58 they are more likely to have Luparc, Valsit, Vervir and SUPERSHRUB. Compared to M58 they are less likely to have Callep, Caraqu+, Carnig+, Equarv+, Gencal, Leppyr, MOSS\_spp, Pedgro and Salcom+. * M39H are low elevation and montane wet meadows. Compared to M58 they are more likely to have Caraqu+, Equhye+, Salsit+, Scimic, Spidou, Thupli and SUPERSHRUB. Compared to M58 they are less likely to have Abilas, Callep, Carnig+, Carspe+, Equarv+, Erigeron\_spp, Gencal, Leppyr, MOSS\_spp, Pedgro, Phyemp, Potfla+, Salcom+, Vacdel, Vercus+ and SUBSHRUB. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**D01**

|  |  |  |  |
| --- | --- | --- | --- |
| **D01** | **Recent Burn** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| [File:Forest fire aftermath.jpg](https://upload.wikimedia.org/wikipedia/commons/2/26/Forest_fire_aftermath.jpg) https://commons.wikimedia.org/wiki/File:Forest\_fire\_aftermath.jpg | | Map | |
| **Summary:**  Recently burned forests. These burned forests are the result of forests experiencing high severity canopy fires, where the fire resulted in significant loss of above-ground biomass. They span a range of structures. On the lower severity end, most trees be standing dead and missing foliage, but scattered fire-tolerant trees such as Psemen or Pinpon will remain alive. Higher severity fires may have few to no standing trunks left. Live vegetation has low cover (less than 10%) and is dominated by pockets of stump sprouts and fire-associated herbs like Chaang.  These disturbed forests are found on all aspects and slopes. The soil surface is mainly mineral soil, charcoal, down wood and ash rather than bedrock or talus. The number of years after a fire that this map class persists depends on fire severity and site productivity, from less than one year with resprouting to a decade or more on dry subalpine sites. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**D02**

|  |  |  |  |
| --- | --- | --- | --- |
| **CODE** | **Vegetated Burn** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\olym\nps\_2005-2012\a03\_coll\plot\_photos\map\_training\_plots\2010\OLYM\_767\_1240\_S.JPG | | Map | |
| **Summary:**  Regenerating burned forests. These plant communities are regenerating from high severity canopy fires that resulted in significant loss of above-ground biomass. Trunks from the previous forest are represented by snags, down logs, and/or scattered charcoal. Infrequently, fire-tolerant trees from the former forest such as Psemen or Pinpon will remain alive. Vegetation has moderate (greater than 10%) to dense cover and is dominated by a wide range of species in combinations (and abundances) that are otherwise uncommon on the landscape. Assorted herbs such as Chaang, densely resprouting shrubs and young conifers are common. Composition is a poor fit to any other vegetated map class.  These disturbed forests are found on all slopes and aspects. The substrate has some litter in addition to mineral soil, charcoal, down wood and ash. Exposed bedrock or talus are uncommon. The number of years after a fire that this map class persists depends on fire severity and site productivity, from a few years to several decades or more on dry subalpine sites. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**D03**

|  |  |  |  |
| --- | --- | --- | --- |
| **D03** | **Conifer Cliff Vegetation** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| https://upload.wikimedia.org/wikipedia/commons/d/dd/Little_Beaver_valley.jpg  https://upload.wikimedia.org/wikipedia/commons/d/dd/Little\_Beaver\_valley.jpg | | Map | |
| **Summary:**  Bedrock cliff with Conifers. Forested cliffs are steep (> 40 degrees) and dominated by exposed bedrock, not talus. This class partially exists to account for the difference in horizontal and vertical area of cliffs, these areas look like they have much more cover in an air photo than they do from the ground.  The dominant vegetation is scattered tree-form coniferous trees that have found foothold on small benches or cracks. Composition is a poor fit to any other vegetated map class. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M89**

|  |  |  |  |
| --- | --- | --- | --- |
| **M89** | **The Ocean** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| Waves crash on 3rd Beach near Rialtohttps://www.nps.gov/olym/planyourvisit/visiting-mora-and-rialto.htm | | Map | |
| **Summary:**  The Pacific Ocean. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M90**

|  |  |  |  |
| --- | --- | --- | --- |
| **M9** | **Alluvial Barren** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_504\_0010\_E.JPG | | Map | |
| **Summary:**  Alluvial barren. Alluvium deposited by water, usually with evidence of sorting. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M91**

|  |  |  |  |
| --- | --- | --- | --- |
| **M91** | **Colluvial Barren** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_060\_0001\_W.JPG | | Map | |
| **Summary:**  Colluvial barren. Scree, talus, or colluvium deposited by gravity. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M92**

|  |  |  |  |
| --- | --- | --- | --- |
| **M92** | **Glacial Barren** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| Left: terminal moraine around the Teton Glacier. Right: Crevasses in the Middle Teton Glacierhttps://www.nps.gov/grte/learn/nature/glaciers.htm | | Map | |
| **Summary:**  Glacial barren. Glacial till or moraine, neoglacial or later. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M93**

|  |  |  |  |
| --- | --- | --- | --- |
| **M93** | **Bedrock Barren** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2014\_NOCA\_Photos\14\_NOCA\_464\_0002\_B.JPG | | Map | |
| **Summary:**  Bedrock barren. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M94**

|  |  |  |  |
| --- | --- | --- | --- |
| **M94** | **Tidal Barren** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| File:Second Beach, Washington coast. Olympic National Park.jpghttps://commons.wikimedia.org/wiki/File:Second\_Beach,\_Washington\_coast.\_Olympic\_National\_Park.jpg | | Map | |
| **Summary:**  Tidal barren. Rocky or sandy beaches. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M95**

|  |  |  |  |
| --- | --- | --- | --- |
| **M95** | **Flowing Water** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| https://commons.wikimedia.org/wiki/File:Olympic\_National\_Park,\_Sol\_Duc\_Falls\_01.jpg | | Map | |
| **Summary:**  Flowing water. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M96**

|  |  |  |  |
| --- | --- | --- | --- |
| **M96** | **Impounded Water** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| U:\noca\nps\_2012-14\_mapping\_plots\a03\_coll\PlotPhotos\2013\_NOCA\_Photos\13\_NOCA\_125\_1578\_A.JPG | | Map | |
| **Summary:**  Impounded or very slowly moving water. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M97**

|  |  |  |  |
| --- | --- | --- | --- |
| **M97** | **Semi-Permanent Snow and Ice** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| https://commons.wikimedia.org/wiki/File:Emmons\_Glacier\_22964.JPG | | Map | |
| **Summary:**  Snow and/or Ice that persists through September in most years. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M98**

|  |  |  |  |
| --- | --- | --- | --- |
| **M98** | **Roads** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| hhttps://www.flickr.com/photos/wsdot/3450021061 | | Map | |
| **Summary:**  Asphalt and gravel roads and parking lots. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |

**M99**

|  |  |  |  |
| --- | --- | --- | --- |
| **M99** | **Developed Areas** | | |
| Median (Range) Elevation:  (-) m | Est. Area: ### ha  Percent of Park: #.##% | Users Accuracy: ##%  CI: ##% - ##% | Producers Accuracy: ##%  CI: ##% - ##% |
| https://commons.wikimedia.org/wiki/File:Enchanted\_Valley\_Chalet\_2018.jpg | | Map | |
| **Summary:**  Developed Areas. Cultural vegetation, impervious surfaces, and buildings. | | | |
| **Mapping Notes:** | | | |
| **Component Vegetation Associations:**   |  |  |  | | --- | --- | --- | | Name | Code | Training Plots | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | | | |