North Cascades National Park Complex Vegetation
An Overview of Management

Mignonne Bivin, Plant Ecologist, North Cascades National Park Complex
North Cascades National Park Complex

- Is comprised to 2 National Recreation Areas and one Park Service Unit- Ross Lake NRA, North Cascades National Park and Lake Chelan NRA which are managed as one unit.
- 684,304 square acres, 94% designated wilderness
- Bounded by designated wilderness areas of the Mount Baker and Okanagon-Wenatchee National Forests
North Cascades vascular plant list totals 1,459 species

North Cascades has the greatest plant species diversity of the NCCN mountainous parks (Olympic NP documented 1,318 species and Mount Rainier NP documented 964 species).
Factors leading to diversity

• Elevation range from 400 feet to 9206 feet
• Mean precipitation range of 35” in Stehekin to 80” in Newhalem
• Over 300 lakes
• Maritime climate on the west side and dry interior climate on the east side
• Diverse parent material, microclimates, rain shadow effects and glaciation
Vegetation types

• 54% of North Cascades is forested, this includes coniferous and deciduous forests types
• 45% is rock, snow and ice, lakes, rivers, meadows and shrub
• Based on 1990’s PMR map
• A new vegetation mapping effort will begin field work in 2012
• The National Park Service manages for ecosystem processes and natural evolving species genetics rather than individual species or species complexes
• No recovery plans
• Do offer special protection for federally and state listed species under NEPA
Invasive plant species

• Approximately 225 non-native species
• Non-native plants represent approximately 14% of all vascular plant species.
• Grasses are the most common non-native growth form with 20% of all non-native species.
• 18% are forbs, 16% are trees and 12% are shrubs.
• There are no known ferns or fern allies.
Prior to 2001 opportunist approach

2002 Exotic Plant Management Team (EPMT)

The EPMT is designed to address invasive plant management issues that pose an imminent threat to park resources.

Invasive plant EA should be completed in the winter of 2012 will allow more treatment options including controversial and those in designated wilderness.
Sensitive Species Management

- 24 vascular plant species that occur on the Washington State Natural Heritage Program rare plant list
- 3 listed as threatened, 15 state sensitive and 6 watch species
- No Federally listed species
- Most species are either high elevation species and/or are associated with wetlands.
- Many are the southern extensions of populations that are more abundant north
Fire Management

• North Cascades has an active prescribed burning and fire use for resource benefit program
• The fire program uses several techniques including fuel treatment, prescribed fire, adaptive management
• Projects are currently focused on the Stehekin Valley
Inventory and Monitoring Program

- Forests
- Alpine and Subalpine
- Whitebark pine
Forest Monitoring

- Hemlock-Douglas fir forest
- Subalpine forests
- Focused on tree recruitment, growth, and mortality in forests
Alpine-Subalpine Monitoring

- Composition and structure of alpine and subalpine vegetation communities
- Soil temperature and snow cover in vegetation plots
- Structure and condition of whitebark pine stands
Whitebark Pine Monitoring

• Is threatened by a non-native fungus Eurasian fungus, *Cronartium ribicola* which is causing widespread mortality throughout the west
• As part of the subalpine-alpine monitoring we will monitor
  • status & trends in mortality
  • status & trends in infection rates
  • in species composition of stands
  • Determine possible rates of resistance
Questions ?