

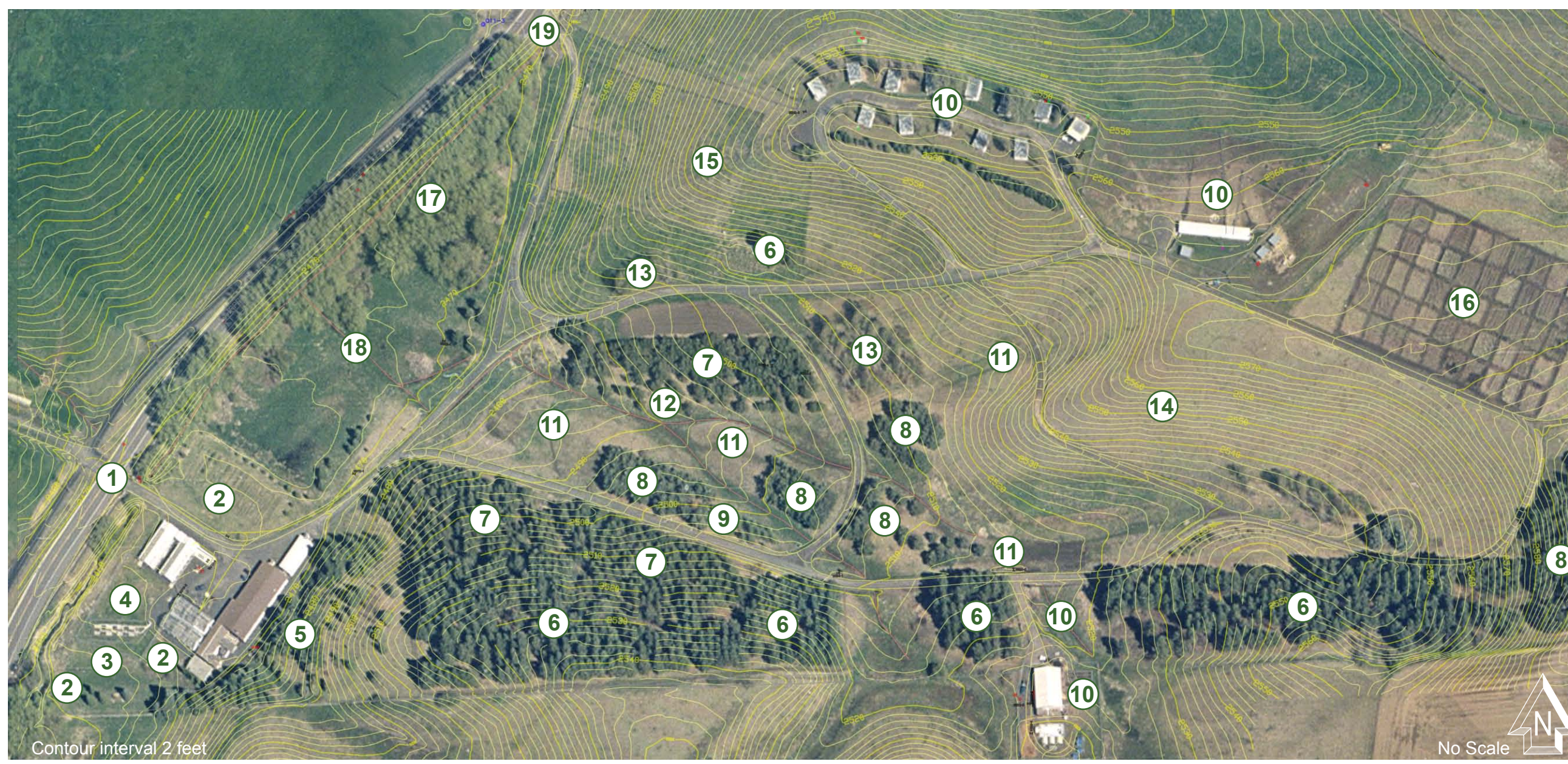
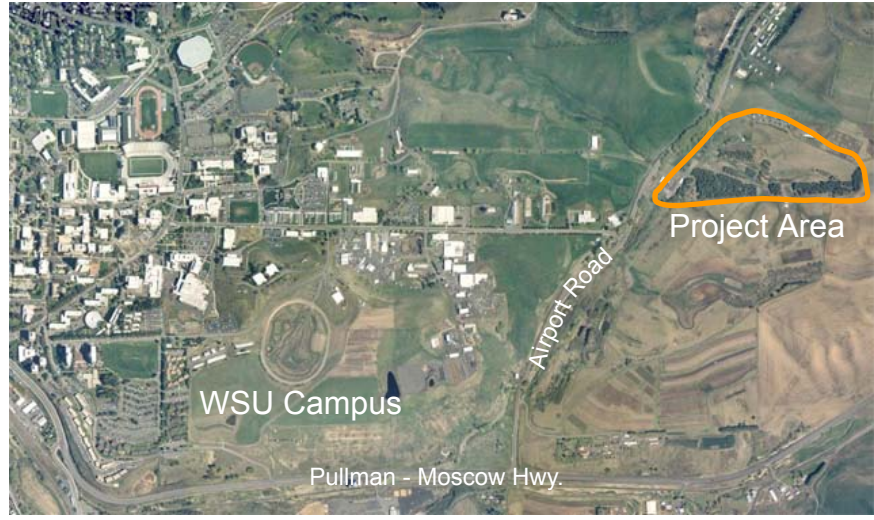
A Concept for the Steffen Center Arboretum

Pullman, WA

Washington State University Campus

Existing Condition

The Steffen Center was established over 40 years ago as a campus ecology laboratory for teaching, research, and public education. The Center includes a campus reforestation project and is home of the Native Plant & Landscape Restoration Nursery.¹ Current development options for the site include several landscape restoration projects and a small arboretum. The design concept presented here is a preliminary investigation of options to be considered for developing a master plan. Further investigations of site hydrology and soil types are recommended before site plans are finalized.² Several monitoring wells should be established in areas 11 and 18 to determine if sufficient moisture is available to support wet meadows or wetlands. If water is plentiful, the Washington State Department of Ecology may require a wetland characterization analysis. State permits may be required if excavation is necessary to establish wetland areas.²

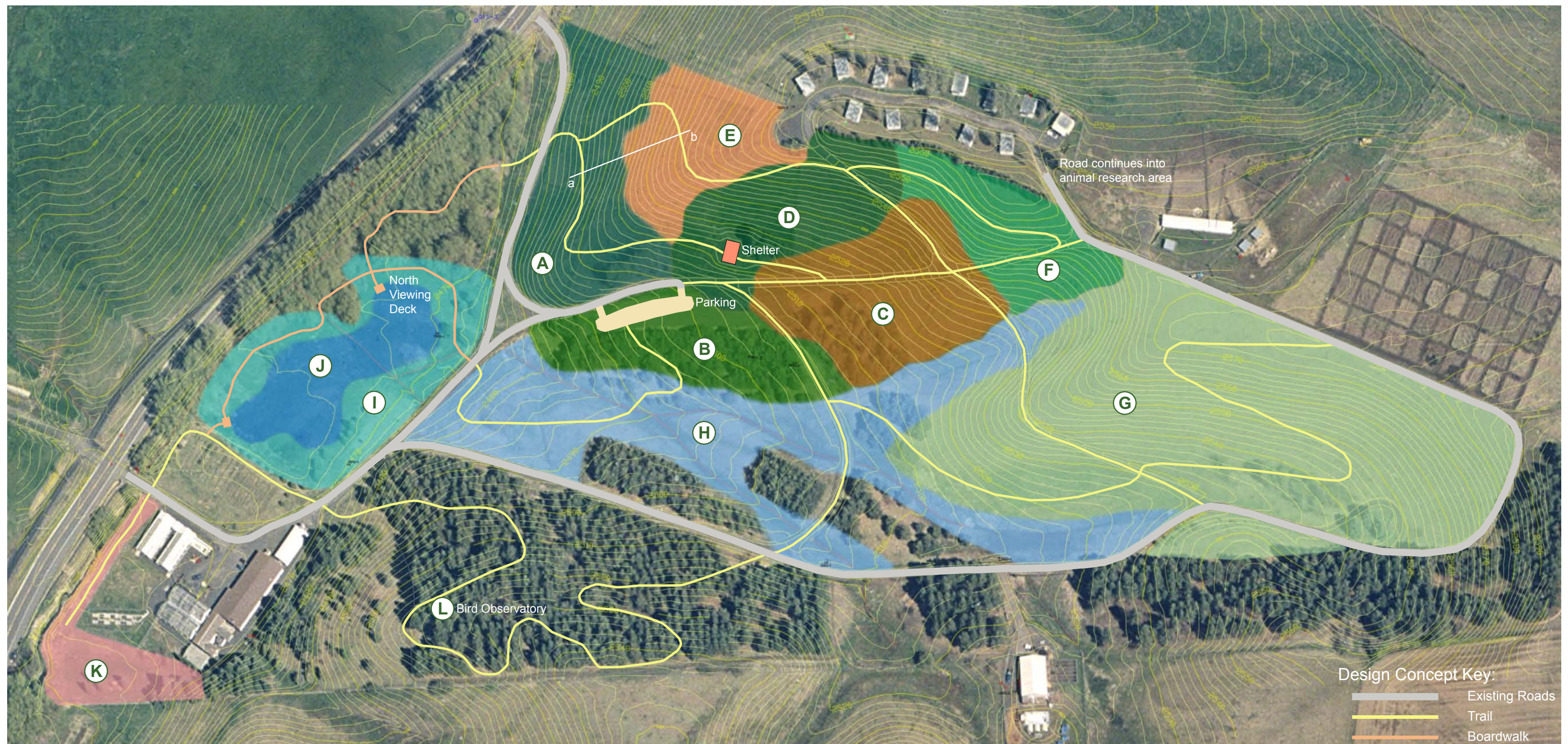


Existing Condition Legend:

1. Primary site entrance
2. Native plant nursery area
3. Native plant demonstration plots
4. Research area
5. Mixed conifer plantings with a few deciduous (mostly *Quercus* spp.)
6. *Pinus ponderosa* stand (note: except for item 5, all conifer stands on site are planted in forestry rows with little or no understorey. Bunch grass species are the primary groundcovers.
7. *Pinus contorta* stand
8. *Pinus sylvestris* stand. Native orchids have established in the western-most *P. Sylvestris* stand
9. *Larix* spp. stand
10. Animal research area
11. Seasonally wet. Sufficient moisture may be present in wet years to supplement a wet meadow/ephemeral wetland at 18.
12. Mixed deciduous shrubs, primarily *Cornus* and *Rosa* spp.
13. *Populus* spp., hybrid poplar cultivars
14. Open, grassy area for Palouse Prairie restoration and ponderosa pine savanna.
15. Former animal research area. A few conifers have recently been planted along the top of the ridge. At least 2 surface irrigation lines are in operation on this proposed arboretum site.
16. Experimental vegetation and hybrid poplar plots
17. Mixed *Populus* spp. and *Salix* spp. A permanent stream runs immediately to the west of this stand, flowing along the east side of Airport Road.
18. Seasonally wet. A small patch of cattails have established near the center. Possibly a good candidate area for an ephemeral wetland or wet meadow. Hydrology may allow a permanent wetland to be excavated.
19. Minor site entrance

Design Concept

This concept includes creating displays of plant communities common in the Blue Mountains and Palouse bioregion (areas A through F) and three ecological restoration zones (areas G through J). While a portion of the site will be open to the public, the plant community displays are intended primarily to assist university students learning to identify individual species, and species associations. Within each major plant community, Johnson and Clausnitzer (1992) describe multiple vegetation series. For each area A through F, one or more series could be represented. The restoration zones (G through J) are intended as field work areas for students and faculty studying ecological restoration techniques. Area K contains display gardens and demonstrations of ecology-sensitive residential landscaping. The emphasis is on xeriscaping, landscaping for wildlife, and native and adapted plant species suited for Pullman's climate. For a better user experience, a trail system is suggested for the site, including a boardwalk in wetland area I/J. Some of the site's existing auto access routes are replaced with pedestrian trails. A public parking area has been added in area B where minimal grading would be needed. Regrading will be necessary, however, in steeper sections of the suggested trail system.



Design Concept Key:

- Existing Roads
- Trail
- Boardwalk

Master Plan

With input from students, staff, and faculty, this design concept will help create a master plan for the Steffen Center, guiding future development and use by the entire WSU community. A published master plan will be a living document to help the Steffen Center grow into a mature outdoor ecology laboratory.

Proposed Plant Communities:



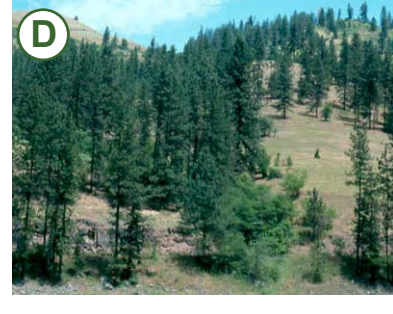
Grand Fir association



Lodgepole Pine association



Douglas Fir association



Ponderosa Pine association



Alpine Fir association



Shrub Steppe association



Palouse Prairie restoration



Wet meadow/low grassland restoration

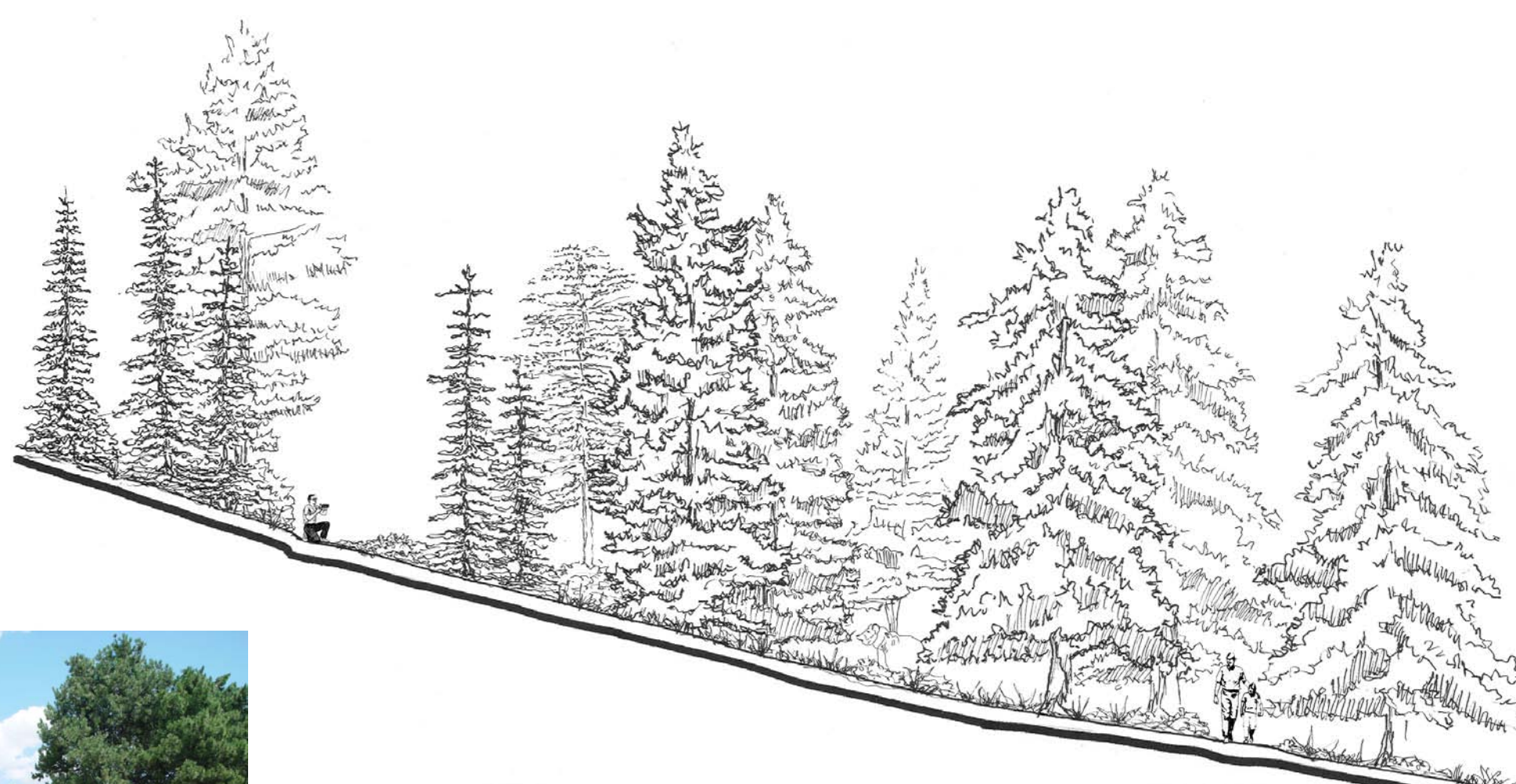


Wetland buffer (I)

Wetland restoration (J)



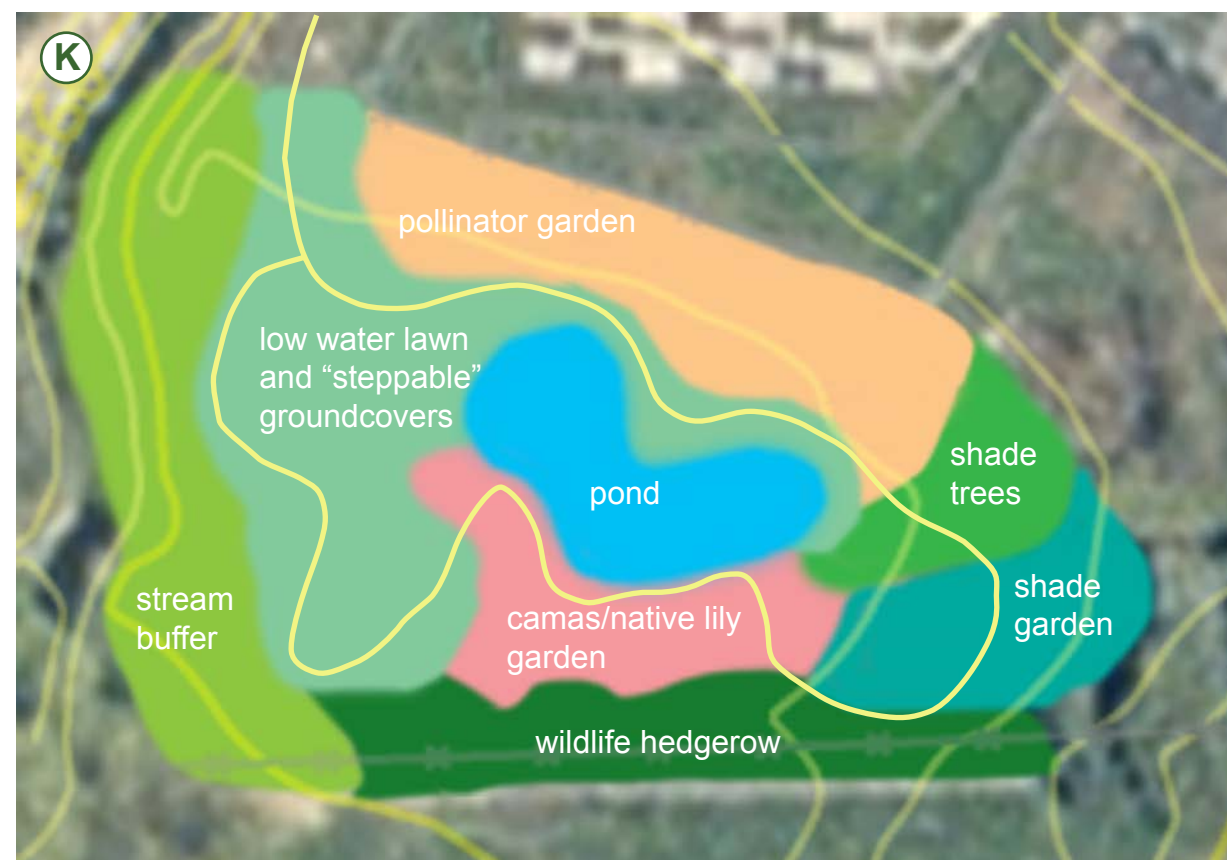
Proposed shelter - for casual uses or as an outdoor classroom



Representative section (a-b) of plant community displays



Existing shelter site



Concept for ecologically-sensitive residential landscaping: Wildlife hedgerow, pond, stream buffer, and pollinator gardens are demonstrations of wildlife-friendly areas.³ WSU Master Gardeners may be able to provide volunteers to help with planting and maintenance of this landscape.



Proposed pond area



Existing pond site



Southeast view from proposed north viewing deck



Existing north viewing deck area

Notes:

1. http://www.campus ecology.wsu.edu/nativeplantnursery/page_004.htm
2. Excellent resources for wetland restoration in Washington include: Granger, T., Hruby, T., McMillan, A., Peters, D., Rubey, J., Sheldon, D., et al. (2005). *Wetlands in Washington State volume 2: guidance for protecting and managing wetlands*. Olympia, WA: Washington State Department of Ecology, Shorelands and Environmental Assistance Program; and Sheldon, D., Hruby, T., Johnson, P., Harper, K., McMillan, A., Granger, T., et al. (2005). *Wetlands in Washington State volume 1: a synthesis of the science*. Olympia, WA: Washington State Department of Ecology, Shorelands and Environmental Assistance Program.
3. Link, R. (1999). *Landscaping for wildlife in the Pacific Northwest*. Seattle, WA: University of Washington Press in association with Washington Department of Fish and Wildlife.

References:

- Johnson, C.G., Clausnitzer, R.R. (1992). *Plant associations of the Blue and Ochoco mountains*. USDA Forest Service publication number R6-ERW-TP-036-92.
 Campus aerial photo and topography map courtesy of WSU Facilities Operations