

Lab/Studio Design Assignment
Agricultural Site
18 April 07

Scenario

The Skagit Land Trust <http://www.skagitlandtrust.org/> has received a donation of money for the improvement of native habitat from Ducks Unlimited. The Trust would like to start to restore the riparian corridor and/or watershed of Indian Slough (48° 27' 50" N, 122° 28' 34" W), which is located between Mt. Vernon and Anacortes. Indian Slough currently runs north from State Highway 20 to where it empties into Padilla Bay. Its course roughly parallels and is 2000' west of Bayview-Edison Road. It has been cut off from most of its freshwater input, and so is quite salty (15-20 ppt). The amount of the donation would be sufficient to purchase approximately 250 acres of currently cultivated farmland in that area. (This is a hypothetical but very plausible scenario.)

Indian Slough is contained within levees for most of its lower reaches. There is very little native vegetation along its banks, and tree cover is limited to some shrubby species growing along the drainage ditches outside the levees. Land along the slough is agricultural, and was formed by diking out Padilla Bay. There are now areas where the agricultural land inland of the dikes is apparently lower than the slough.

The parcel just west of the mouth of the Slough does not appear to support active farming and may be leased for hunting. Just offshore of it is a large stand of *Spartina alterniflora*, which may have been planted in the area in the period between 1920 and 1950 to attract waterfowl.

Current vegetation in the Slough is characterized by *Salicornia* (pickleweed), *Distichlis* (saltgrass), *Atriplex* (shadscale) and other species tolerant of saline environments. Quite a bit of *Zostera* (eelgrass) wrack washes into the Slough from Padilla Bay.

Description of the water quality in sloughs draining into Padilla Bay:

<http://inlet.geol.sc.edu/wapbmosp.htm>

Padilla Bay Shore Trail:

<http://www.wowweather.com/hikeoftheweek/2006/01/hike-of-week-padilla-bay.html>

Your assignment

Choose area(s) to acquire. Make a decision about what area or areas you would propose to the Skagit Land Trust as being the best, or most economical, or the biggest bang for their buck, or most damaged and needing repair, or key to the success of the greater project, or the first step, or whatever you think is a good argument to support your choice as to what they should spend their money on. Briefly, explain where the area is, and what your rationale for the selection and purchase is.

Frame the restoration design program. State a comprehensive (and reasonable) goal for the total area (ca 250 acres) to be acquired. Two hundred acres or more is a large piece of land. How would you propose to phase your restoration of your parcel or parcels? What would be the first step, what would be the second step, etc.? What is your timeline; how long would the total project take? How many individual restoration steps would it require? (A step might be all of the restoration that you think you could accomplish in one year.)

Describe one project. Consider one project, that would be installed in a growing season, and apply the design framework we have discussed. What would be a reasonable goal for the project? How would you translate the goal as functional requirements? Who are some of the stakeholders and what constraints would (they have) you consider? What are some design parameters that might be developed in order to meet the functional requirements of the project? What plants would be specified and how would the installation be scripted? What kind of site modification and conditioning might be required? What management program should be put into effect? To do this (from the project level FRs through the lower level FRs that lead you to a management program) you will need to take the process of articulating functional requirements, constraints and design parameters through at least two increasingly more specific levels beyond the first level you describe.

Submit deliverables. Use the activities above to prepare and submit a short report (executive summary?) that is four or five pages long plus any appendices such as maps, photos, lists or whatever you need to convey the results of your efforts.

Stakeholders you might consider. The Skagitonians to Preserve Farmland, Ducks Unlimited, The Nature Conservancy, local (such as Mount Vernon, Burlington, and La Conner) chambers of commerce and the Skagit Valley Herald all have websites.

Some possible options.

1. Connect headwaters of Little or Big Indian Slough with forest watershed.
2. Breach a dike at lower end of Indian Slough and create a salt marsh.
3. Continue to operate the farmland, but as a “green” farm.
4. Focus on riparian corridors.