Ecological Site Description ID:	R222XY323AK

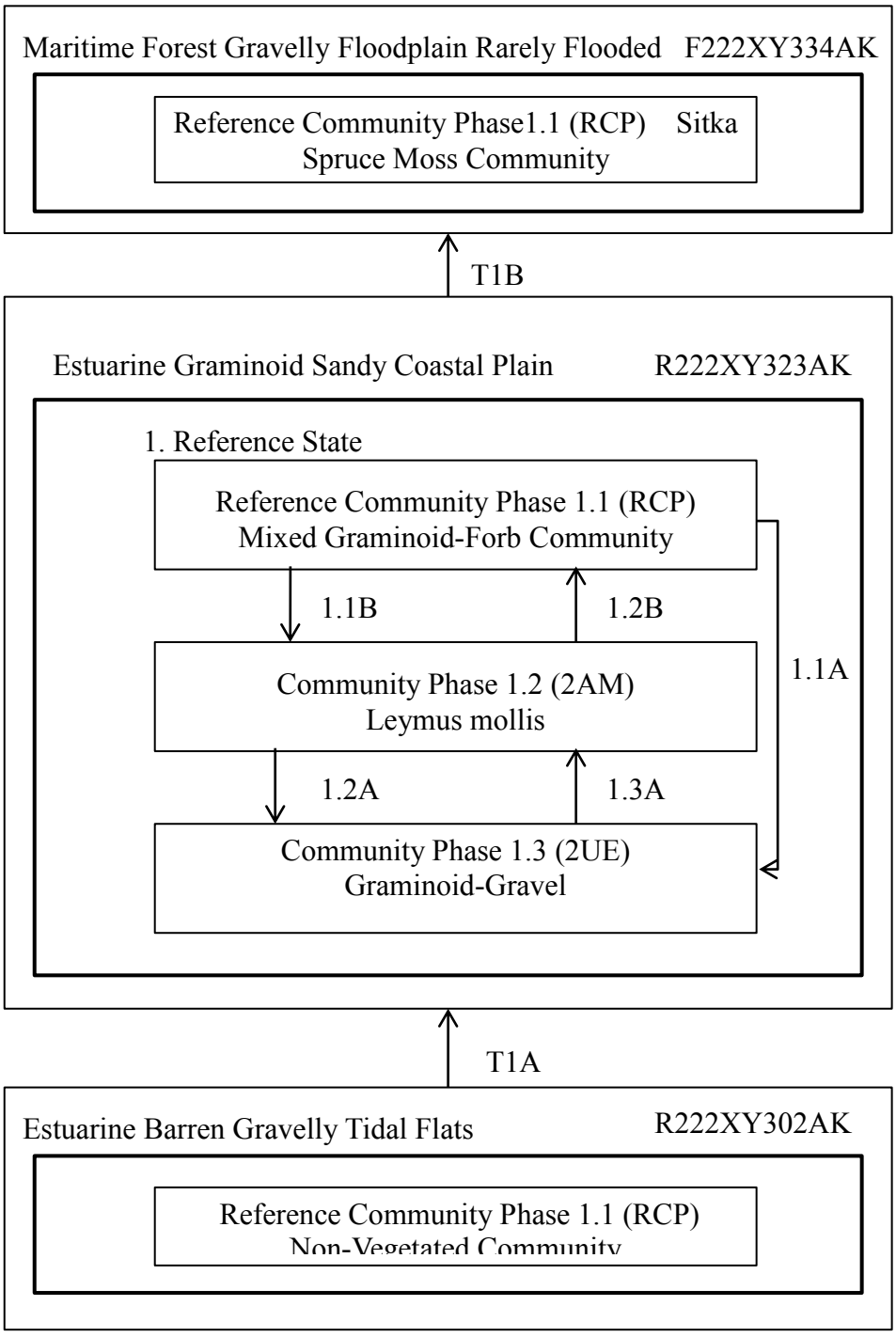
Ecological Dynamics of the Site:

This estuarine, graminoid, coastal plain ecological site is comprised of three community phases with varying composition of graminoid species and percent cover. The plant community phases range from a pioneering graminoid community consisting of sparse graminoids to a climax community that is dominantly mixed cover of graminoids, forbs, and regenerating Sitka spruce *(Picea sitchensis)*. The disturbance regimes that affect the dynamics of the plant community include isostatic rebound, alluvial flooding, and motorized vehicle traffic.

Alluvial flooding and motorized vehicle traffic affect the plant community dynamics within the ecological site, whereas isostatic rebound following glacial retreat is a larger scale process that may shift the ecological site to an associated ecological site. Following glacial retreat, the ground uplifts at a rate of 0.76 inch per year. As the areas rebound, the influence of daily tides is removed and the salt deposited through tidal activity begins to leach out. Over time, the earth transitions from an estuarine tidal flats system (ecological site R222XY302AK) to an estuarine coastal plain system (ecological site R222XY323AK).

Historical documentation suggests that this ecological site was altered by urban development during the Gold Rush era. Historical photographs show that buildings and a pier were constructed in the Dyea Flats area. Pier pilings are on the flats, but there is little evidence of this disturbance in the soil profile and plant community.

State and Transition Model:



State ID Number:	1	**State Name:**	Reference state
Phase 1.1			
Community Phase Number:	1.1	**Community Phase Name:**	Mixed Graminoid-Forb Community

Community Phase Narrative:

This is the climax community phase for this ecological site. The community is comprised of graminoids, moss, and forbs and a smaller proportion of colonizing Sitka spruce *(Picea sitchensis)*. Graminoid cover may be nearly 30 percent with species such as *Carex lyngbyei*, *Leymus mollis* ssp. *mollis, Juncus arcticus*, and *Carex gmelinii*. There is a high diversity of forb species, including *Argentina anserina, Lathyrus, Glaux maritima, Saxifraga, Dodecatheon pulchellum, Conioselinum gmelinii, Plantago maritime, Achillea millefolium,* and *Rumex acetosella*. *Polytrichum juniperinum* is the dominant moss species, and it may make up as much as 60 percent cover. Regenerating Sitka spruce (*Picea sitchensis*) and *Pinus contorta var. contorta* commonly are in trace amounts, but cover may be as much as 25 percent in areas where this ecological site transitions into a maritime forest gravelly flood plain ecological site.

Community Pathways

Pathway Number	Pathway Name & Description
1.1A	Urban disturbance from motorized vehicle traffic
1.1B	Rare, brief, high-velocity flood

Phase 1.2			
Community Phase Number:	1.2	**Community Phase Name:**	*Leymus mollis*
Community Phase Narrative:			
This plant community phase becomes established following alluvial flooding or recovery from motorized vehicle traffic. The community is characterized by a continuous cover of *Leymus mollis ssp. mollis*.			

Community Pathways	
Pathway Number	**Pathway Name & Description**
1.2A	Motor vehicle use
1.2B	Time since a flood

Phase 1.3			
Community Phase Number:	1.3	**Community Phase Name:**	Graminoid-Gravel Community
Community Phase Narrative:			
This community phase is a mixture of graminoids and fobs. The cover may be as much as 80 percent with exposed gravel resulting from motorized vehicle traffic. *Leymus mollis ssp. mollis* is the dominant graminoid. Forb cover may be as much as 70 percent with species such as *Plantago maritima var. juncoides* and *Achillea millefolium* var. *alpicola*.			
Community Pathways			
Pathway Number	1.3		
1.3A	Time since motorized vehicle use		

State Transition Pathways	
Transition Number	**Transition Narrative**
T1A	T1A represents an irreversible transition from the Estuarine Gravelly Tidal Flats ecological site (R222XY302AK) to the Estuarine Graminoid Coastal Plain ecological site (R222XY323AK) as a result of isostatic rebound. During the glacial period, the weight of the ice bowed the earth's crust. When the glacier retreated, the earth began to rebound at a rate of 0.76 inch per year. As the earth continued to lift out of the nonvegetated tidal flats, the salts began to leach from the soil and plants began to become established. Over time, the earth will continue to rebound and the graminoid coastal plain ecological site will transition into flood plain site (see T1B narrative).
T1B	Isostatic rebound is a continuous process that affects the ecological dynamics of an ecosystem. T1A represents the early stages of isostatic rebound, and T1B represents the later stages. As the Estuarine Graminoid Coastal Plain ecological site continues to rebound, tidal influence diminishes and the site transitions out of an estuarine system into a maritime flood plain system. The establishment of Sitka spruce *(Picea sitchensis)* triggers the transition between ecological sites. Once the Sitka spruce *(Picea sitchensis)* cover reaches 25 percent, the Estuarine Graminoid Coastal Plain ecological site becomes the Maritime Forest Gravelly Flood Plain, Rarely Flooded (F222XY334AK) site.