Ecological Site Description ID:	R236XY105AK—Western Alaska Maritime Mosaic Loamy Slopes

Ecological Dynamics of the Site:

This western Alaska maritime ecological site is in linear to concave areas of mountain back slopes and footslopes. This site is typically 118 to 3,258 feet above sea level with slopes of 0 to 38 percent. Slope aspect does not appear to influence the plant community dynamics of this site because it is on all aspects.

This ecological site is correlated to soil component D36-Western maritime scrub gravelly colluvial slopes. Soil characteristics that are likely to influence plant community dynamics on this site include the cryic soil temperature regime, udic moisture regime with slow permeability to a depth of 10 inches, and very strong to moderate pH (4.8 to 5.6) in the first mineral horizon. The organic material content in the surface layer is commonly 5 to 15 percent. The annual precipitation is 23 to 70 inches, and the annual frost-free period is 80 to 135 days. The parent material is herbaceous organic material over gravelly slope alluvium over gravelly colluvium and/or gravelly till.

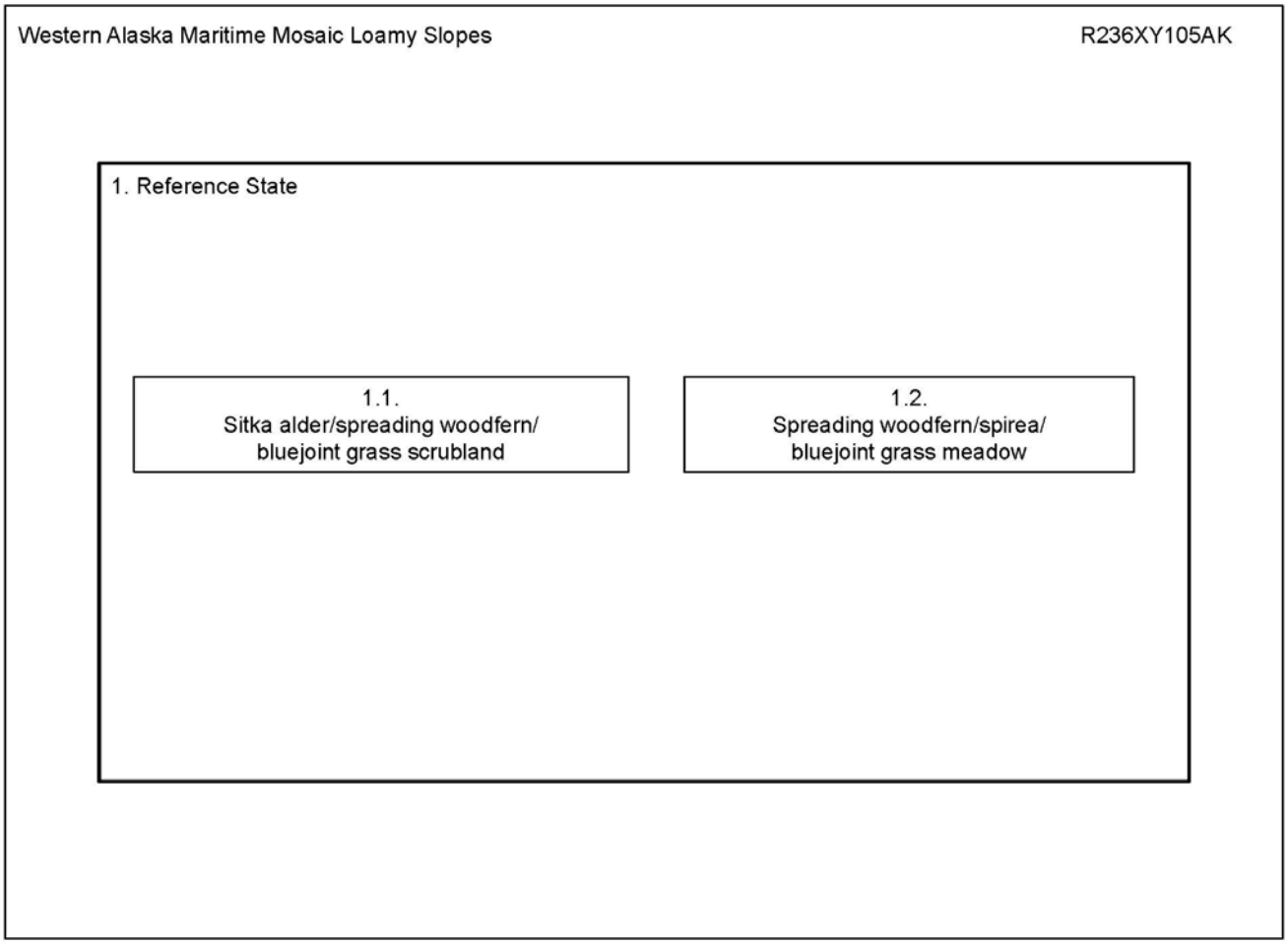
The reference state is characterized by a mosaic consisting of two community phases differentiated by plant community composition. One community consists of a stand of tall, dense Sitka alder (*Alnus viridis ssp. sinuata*), and the other consists of medium and low forbs, shrubs, and graminoids. This ecological site is considered a mosaic because neither of these communities can properly be designated as the reference community phase and there are no known disturbance pathways between them.

The vegetative communities associated with this ecological site are similar to those of site R236XY124AK (Western Alaska Maritime Scrub Loamy Slopes); however, this site is on mountains and site R236XY124AK is on hills and plains. Site R236XY124AK is affected by an erosional disturbance regime, and this site is a mosaic without a disturbance regime. There are also differences in surface layer organic matter content, surface layer pH, and parent material. Ecological site R236XY106AK (Western Alaska Maritime Dwarf Scrub Loamy Slopes, Dry) is on similar upland mountain back slopes and footslopes, but the topography of that site is convex to linear as opposed to the concave to linear topography of this site. Parent material, runoff class, soil permeability rate, and surface layer pH and organic matter content also differ. These differences and the dissimilarities in reference states, community phases, and disturbance regimes make use of three unique ecological sites necessary.

Transitional pathways between the communities of this ecological site are currently unknown. A disturbance regime has not been observed, though one that is related to slope erosion or landslide events may exist. Future research may show a successional pattern linking small- or large-scale erosional events to a transition between these communities, but current *in situ* observations and data have not verified this process.

Slight browsing by moose on willow is possible on this site, but it does not appear to be dominant enough to significantly alter the communities.

State and Transition Diagram:



State ID Number:	1	State Name:	Reference State
State Narrative:	The reference state supports two community phases, grouped by structure and dominance of the vegetation (e.g., shrubs, graminoids, and forbs) and their ecological function and stability. These two communities are considered to be a mosaic. This mosaic community pattern presently cannot be predicted by landform characterization, abiotic features, or disturbance regime. No alternative states have been observed. This report provides baseline vegetation inventory data for this site. Future data collection is needed to provide further information about existing plant communities and the disturbance regimes that would result in transitions from one community to another.		

Phase 1.1			
Community Phase Number:	1.1	Community Phase Name:	Sitka alder/spreading woodfern/bluejoint grass scrubland
Community Phase Narrative:			
This community is characterized by closed scrubland with an understory of dominantly forbs and graminoids. Annual plant production is visually estimated to occur primarily among shrubs, particularly alder. Yearly understory production is measurable among forbs and graminoids. Total production is hypothesized to be higher in this community than in the alternative mosaic community because of the higher density of shrubs, forbs, and graminoids in the overstory and understory. A typical area consists of dense Sitka alder (*Alnus viridis ssp. sinuata*) with an understory of shade-tolerant and space-competitive forbs and graminoids, including arctic starflower (*Trientalis europaea*), spreading woodfern (*Dryopteris expansa*), claspleaf twistedstalk (*Streptopus amplexifolius*), horsetails (*Equisetum spp.*), and bluejoint grass (*Calamagrostis canadensis*). Moss ground cover generally is very low, and herbaceous cover (~93 percent) and woody litter (~7 percent) are throughout.			

Community Phase Canopy Cover

(Vegetation data in the table are provided as constancy (percent) and average canopy cover (percent) of the most dominant and ecologically relevant species for this community phase.)

Plant group	Common name	Scientific name	USDA plant code	Constancy (percent)	Average canopy cover (percent)
S	Sitka alder	*Alnus viridis ssp. sinuata*	ALVIS	100.0	85.0
G	Bluejoint grass	*Calamagrostis Canadensis*	CACA4	80.0	13.3
F	Arctic starflower	*Trientalis europaea*	TREU	100.0	1.9
F	Spreading woodfern	*Dryopteris expansa*	DREX2	100.0	27.6
F	Claspleaf twistedstalk	*Streptopus amplexifolius*	STAM2	80.0	2.4
F	Horsetails^	*Equisetum spp.*	EQUIS	30.0, 20.0, 20.0	2.1, 2.6, 5.5

^ Horsetails (*Equisetum spp.*) are represented by three species—*E. arvense, E. pretense,* and *E. sylvaticum,* respectively.

Phase 1.2

Community Phase Number:	1.2	Community Phase Name:	Spreading woodfern/spirea/bluejoint grass meadow

Community Phase Narrative:

This community is generally in a mosaic pattern with community phase 1.1. This community is characterized by meadows consisting of competitive forbs with various interspersed shrubs and graminoids. Annual production is visually estimated to occur dominantly among forbs, though graminoid and shrub production is also expected but is lower than that of community 1.1. A typical area of this site commonly consists of spreading woodfern (*Dryopteris expansa*), spirea (*Spiraea stevenii*), bluejoint grass (*Calamagrostis canadensis*), and fireweed (*Chamerion angustifolium*). Other common species include green false hellebore (*Veratrum viride*), arctic starflower (*Trientalis europaea*), and cloudberry (*Rubus chamaemorus*). The ground cover consists of mosses (total mean cover ~7 percent) and herbaceous litter (~90 percent).

Community Phase Canopy Cover

(Vegetation data in the table are provided as constancy (percent) and average canopy cover (percent) of the most dominant and ecologically relevant species for this community phase.)

Plant group	Common name	Scientific name	USDA plant code	Constancy (percent)	Average canopy cover (percent)
S	Beauverd spirea	*Spiraea stevenii*	SPST3	100.0	10.0
S	Cloudberry	*Rubus chamaemorus*	RUCH	100.0	20.0
G	Bluejoint grass	*Calamagrostis canadensis*	CACA4	100.0	3.0
F	Spreading woodfern	*Dryopteris expansa*	DREX2	100.0	65.0
F	Green false hellebore	*Veratrum viride*	VEVI	100.0	8.0
F	Fireweed	*Chamerion angustifolium*	CHAN9	100.0	2.0

Note: The vegetation and soils for this community were sampled at one location. Due to the limited data available for this community phase, personal field observations were used to aid in describing this plant community.