

Ecological site R227XY200AK

Gravelly Flood Plains, Moderately Wet

Accessed: 10/09/2026

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Associated sites

F227XY101AK	Loamy High Flood Plains
F227XY103AK	Stream Terraces Frozen
R227XY205AK	Loamy Flood Plain, Wet
R227XY500AK	Loamy Riverbanks

Similar sites

R227XY205AK	Loamy Flood Plain, Wet
R227XY201AK	Loamy Flood Plains, Moderately Wet

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site consists of level to gently sloping flood plains formed in a very thin mantle of stratified alluvium over gravelly and cobbly alluvium along clear water rivers and streams. Terrace height above the mean summer channel level is typically 3 feet (0.6 m) or less and the site is frequently to occasionally flooded. In some places, the site is cut with shallow, narrow ephemeral and perennial channels. Elevation is

generally from 2500 to 2850 feet (762 to 869 m).

In the Gulkana River area, this site occurs primarily along the Middle Fork, along the Main Stem from the outlet of Paxson Lake to the Middle Fork confluence, and along Keg Creek on the North Branch. It also occurs in small, isolated areas throughout the remainder of the River corridor. This site undoubtedly occurs along moderate to steep gradient reaches of the other non-glacial streams and rivers elsewhere in the Copper River basin.

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Flooding duration	Brief (2 to 7 days) to long (7 to 30 days)
Flooding frequency	Frequent
Elevation	760 – 870 m
Slope	0 %
Water table depth	30 – 80 cm
Aspect	Aspect is not a significant factor

Climatic features

The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

Table 3 Representative climatic features

Frost-free period (average)	0 days
Freeze-free period (average)	0 days
Precipitation total (average)	0 mm

Influencing water features

Soil features

: The weakly developed soils on this site typically have a mantle of stratified sandy and silty alluvium less than 8 inches (20 cm) thick over very gravelly and cobbly alluvium. The surface organic mat ranges from 0 to 1 inch (0 to 2.5 cm) thick. Depth to seasonal high water table ranges from 12 to 40 inches (30 to 102 cm) and the soils are somewhat poorly drained. During periods of peak snowmelt and runoff, the water table is at or near the soil surface. On the lowest flood plain positions, the water table may remain near the surface most of the growing sea

Table 4. Representative soil features

Surface texture	(1) Sandy loam (2) Sand (3) Silt
Family particle size	(1) Sandy
Drainage class	Somewhat poorly drained
Soil depth	150 cm
Available water capacity (0-101.6cm)	0.05 – 0.46 cm
Subsurface fragment volume >3" (Depth not specified)	40 – 50 %

Ecological dynamics

Tall feltleaf willow scrub is an early and apparently short lived seral stage on this site. Most stands of this type are of small extent and usually restricted to gravelly bars within and along the margins of the river channel. Otherwise, Low willow/herb scrub is the predominant vegetation type found on this site. On slightly higher terrace positions, white spruce seedlings and small saplings are frequently found within the Low willow/herb scrub. In a few places, small stands of White spruce/willow open forest occur also.

This site is probably only moderately susceptible to wild fire. Wet soil conditions should limit the severity of burning, allowing the willow scrub to regenerate quickly from root sprouts.

Based on observations and data collected in the Gulkana River area, this site is best described as an early stage of site progression and vegetation succession on flood plains along moderate to steep gradient stream channels. Down-cutting by the channel and continued surface deposition of alluvium will over time raise the terrace height, increase the thickness of the fine textured alluvium on the soil surface, and cause other changes in site and soil properties. Site progression appears to lead to 172Xy101AK - Loamy High Flood Plains and White spruce/willow open forest vegetation. Near the upper elevational limit of 172Xy200AK - Gravelly Flood Plains, Moderately Wet the potential for trees is probably limited to occasional scattered trees and clumps of trees on favorable microsites. In these areas, site progression appears to lead to 172Xy201AK - Loamy Flood Plains, Moderately Wet and continued Low willow/herb scrub vegetative potential.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 6. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Animal community

This site provides excellent winter habitat for moose. Willow browse is dense and most stands exhibit moderate to severe hedging. Beaver use of the willow is evident in many stands. Uses include forage and dam building materials.

Other information

In many places, insect gall are common on willows. The insect(s) associated with these galls is not known. Most stands experience seasonally heavy browsing by moose and the willow is usually moderately to occasionally severely hedged. Beaver cut willow stems are common throughout many stands. As currently defined, site 200 is generally below treeline; site progression from low flood plains toward high flood plains is accompanied by vegetation succession toward White spruce/willow woodland. Treeline, however, appears to occur at about 2500 feet elevation, just below the elevation of Dickey Lake on the upper Middle Fork. During initial field work in the Tangle Lakes portion of the Delta River Area, gravelly flood plains with Low willow/herb scrub were found in number of places. These site/stands are probably entirely above the elevation of tree growth and woodland potential. These sites/stands also are similar to ones found immediately below Dickey Lake in the Gulkana River Area. In conjunction with the Delta River Area project, a new site will have to be defined to include gravelly flood plains above treeline. On this new site, Low willow/herb scrub would still be the potential during site progression toward higher flood plains. Dickey Lake area sites/stands currently included in site 200 would be correlated to the new site.

Type locality

Location 1: Valdez-Cordova County, AK	
Township/Range/Section	T12 R2 S05

Contributors

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills:

2. Presence of water flow patterns:

3. Number and height of erosional pedestals or terracettes:

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):

5. Number of gullies and erosion associated with gullies:

6. Extent of wind scoured, blowouts and/or depositional areas:

7. Amount of litter movement (describe size and distance expected to travel):

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):

12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant:

Sub-dominant:

Other:

Additional:

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):

14. Average percent litter cover (%) and depth (in):

15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):

16. Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:

17. Perennial plant reproductive capability:
