

# Ecological site group DX035X01AESG01

## Grand Staircase-Bottoms & Flats-Streamflow

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### Key Characteristics

- Grand Staircase-Kaiparowits
- Bottoms and Flats
- Extra water is from perennial or intermittent streamflow

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.

### Physiography

This site occurs on valley bottoms, inset fans and low lying terraces adjacent to live streams and rivers.

### Climate

Average annual precipitation is 6 to 12 inches. Approximately 70% occurs as rain from March through October. On the average, February, May and June are the driest months and August, September and October are the wettest months. The mean annual air temperature is 11-13 degrees Celsius and the soil temperatures are in the mesic regime. The average freeze-free period is 160 to 220 days. This site is frequently flooded and has a water table. These factors over-ride climate as a controlling factor. This site occurs primarily in the semi-desert and desert climatic zones. In average years, plants begin growth around March 20 and end growth around October. Optimum growth on cool season plants occurs in May. Warm season plants make their optimum growth in July and August.

### Soil features

Characteristic soils in this site are deep and somewhat poorly drained. They formed in alluvium derived mainly from mixed parent materials. Soils contain 4 to 16 mmhos/cm of salt and have a water table at a depth of 20 to 60 inches during most of the plant growing season. Soils are flooded during spring runoff and frequently as the result of intense summer convection storms. Average annual soil loss in potential is approximately 0.1 tons/acre.

### Vegetation dynamics

As ecological condition deteriorates due to overgrazing, alkali sacaton and coyote willow decrease while salt cedar and rubber rabbitbrush increase to dominate the site. Cheatgrass and annual weeds are most likely to invade this site.

### Major Land Resource Area

MLRA 035X  
Colorado Plateau

### Subclasses

- R035XY012UT–Semiwet Saline Streambank (Fremont Cottonwood)
- R035XY022UT–Colorado Plateau Riparian Complex Perennial (Valley Type IV - C5/F5 Stream Types)

### Correlated Map Unit Components

Stage

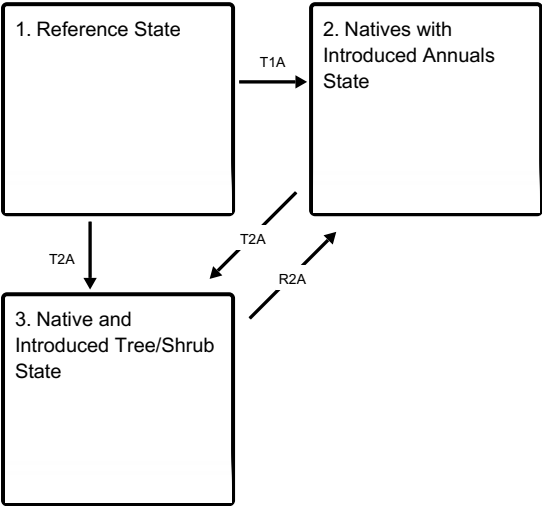
Provisional

Contributors

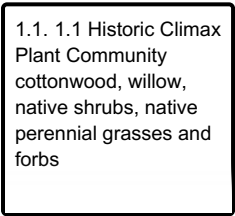
Keith Crossland  
Curtis Talbot

State and transition model

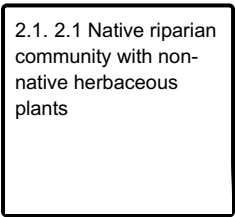
Ecosystem states



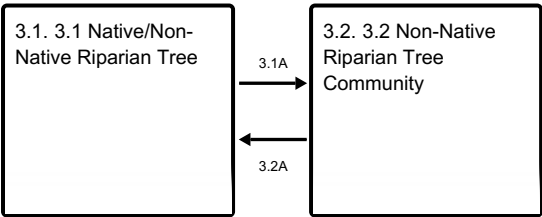
State 1 submodel, plant communities



State 2 submodel, plant communities



State 3 submodel, plant communities



State 1  
Reference State

Cottonwood, willow, rubber rabbitbrush, perennial forbs and grasses, species dependent on salinity

## **Community 1.1**

### **1.1 Historic Climax Plant Community cottonwood, willow, native shrubs, native perennial grasses and forbs**

## **State 2**

### **Natives with Introduced Annuals State**

Cottonwoods, willows, rubber rabbitbrush, native perennial grasses and forbs with non-native annuals

## **Community 2.1**

### **2.1 Native riparian community with non-native herbaceous plants**

Cottonwood, willows, native perennial grasses and forbs with non-native grasses and forbs present

## **State 3**

### **Native and Introduced Tree/Shrub State**

This state is typically dominated by trees and shrubs. Under heavy use the herbaceous is depleted and the site is dominated by native woody vegetation. Under continued improper grazing management of severe disturbance the site may become dominated by non-native species, typically tamarisk and Russian olive.

## **Community 3.1**

### **3.1 Native/Non-Native Riparian Tree**

Cottonwood, willows, introduced trees and shrubs. native and non-native herbaceous species

## **Community 3.2**

### **3.2 Non-Native Riparian Tree Community**

Overstory dominated by non-native trees, typically salt cedar. Native and non-native herbaceous understory.

## **Pathway 3.1A**

### **Community 3.1 to 3.2**

Loss of native trees from drought, fire, disease or unmanaged grazing

## **Pathway 3.2A**

### **Community 3.2 to 3.1**

Control of non-native woody species. Manage grazing by livestock and wildlife. Reseeding/planting native species

## **Transition T1A**

### **State 1 to 2**

Introduction of non-native herbaceous species

## **Transition T2A**

### **State 1 to 3**

Introduction of non-native tree species

## **Transition T2A**

### **State 2 to 3**

Introduction of non-native tree species

## **Restoration pathway R2A**

### **State 3 to 2**

Control of non-native trees; planting of native tree and shrub species, manage grazing by livestock and wildlife

### **Citations**