

Okanagan Lower Grasslands

Description

This type exists as two distinct communities:

- A) Bluebunch wheatgrass -- big sage
This community is dominated by bluebunch wheatgrass with a low (5-10%) cover of big sage brush. The big sage in this community may be Wyoming big sage or basin big sage. The two taxa inter-grade and are difficult to differentiate but usually basin big sage is up to 2 m tall on deeper soils, while Wyoming big sage is no more than 1 m tall on shallower soils. In this account they will be treated as big sage. This community occurs on fine textured soils at low elevation throughout the southern Okanagan and Similkameen valleys
- B) Bluebunch wheatgrass-- Antelope brush
This community is dominated by bluebunch wheatgrass with a low (5-10%) cover of antelope brush. It occurs on coarse textured soils at low elevations south of Okanagan Falls

Big sage and antelope brush behave similarly in these two types, and the herbage layer is similar and responds to grazing in much the same way. On steeper slopes, the same communities exist but with less vegetation cover, less litter and more bare ground.

Location

The big sage community occurs in the valley floor on gentle to steep slopes with warm to hot aspects on morainal blankets or veneers and lacustrine silt in the Okanagan valley from the border to Summerland, and in the Similkameen valley from the border to Keremeos.

The antelope brush type occurs on coarse textured soils or soils with a high volume of fragments from the border to Okanagan Falls.

Representative Reference Area

Haines Ecological Reserve, Chopaka west

BEC Correlation

Sage Type *Old field guide*

BGxh1 03,01

New field guide

BGxh1 81, 82, 81esa, 81ls

Antelope brush Type *Old field guide*

BGxh1 02,03,04

New field guide

BGxh1 83,84,85,85es

Site Characteristics

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Soils

Big sage type

Soils are quite variable, but the most common form is light brown chernozems on morainal blankets and veneers often with a thin loess layer.

Antelope brush type

This type is limited to coarse textured fluvial soils, which will usually not have sufficient Ah depth to be classed as chernozems, and may be classed as brunisols.

Elevation range

Valley bottom to 600 m

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Seral Stages

PNC Climax



Okanagan Lower Grassland antelope brush-- bluebunch wheatgrass PNC Photo Credit Michael Ryan

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Plant Community PNC	
Species	Canopy cover (%)
Bluebunch wheatgrass	30 -60%
Sandberg's bluegrass	1-5%
Big sage/Antelope brush	5-10%
Litter	5-30%
Biological Crusts	10-30%

Productivity

Big sage types on zonal sites on morainal blankets produce about 500 kg/ha. There is less production on steeper slopes or sites with thinner soils.

Antelope brush type production is about 400 kg/ha

Range Management consideration

These sites are very fragile and will deteriorate to late-seral with even the lightest of grazing. Bluebunch wheatgrass will decrease, while big sage or Antelope brush will increase.

Properly Functioning Condition

These sites are inherently slightly at risk even without disturbance. Lack of herbage cover and litter and high levels of exposed bare soil, will result in low scores.

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Late-Seral



*Okanagan Lower Grassland Antelope brush-- bluebunch wheatgrass late- seral
Photo Credit Michael Ryan*

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Plant Community Late Seral	
Species	Canopy cover (%)
Bluebunch wheatgrass	15-30%
Sandberg's bluegrass	5-10%
Needle- and- thread grass	5-10%
Big sage/Antelope brush	5-20%
Litter	5-30%
Biological Crusts	10-30%

Productivity

400 kg/Ha

Range Management Considerations

Late-seral is the targeted desired plant community.

Moderate use [35% use (stubble height 17cm on 50cm bluebunch wheatgrass)]; Spring grazing should be followed by at least 1 year of rest; heavier use should be followed by longer rest. Early spring grazing is especially damaging and grazing should be delayed until plants reach the 4-leaf stage.

Fall use is less damaging, but sufficient litter needs to be left on the soil to protect the soil in the subsequent growing season. Stubble needs to be high enough to assist in the capture of snow and to impede runoff. These areas often get rain or rapid snow melt on frozen ground. If litter and live plant material is too low, there will be excessive loss of water as run-off.

Regardless of grazing regime big sage will increase through time, slowly lowering the seral stage.

Burning in a 50 year interval will be needed to maintain the herbage layer and keep sage plants young and vigorous.

Properly Functioning Condition

This seral stage will score slightly at risk. Lack of vegetation and litter and high levels of exposed bare soil, will result in low scores.

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Mid-Seral

No Picture Available

Plant Community Mid Seral	
Species	Canopy cover (%)
Bluebunch wheatgrass	5-15%
Needle-and-thread grass	5-30%
Annual bromes	5-10%
Big sage/Antelope brush	10-50%
Litter	5-30%
Biological Crusts	5-10%

Productivity

250 kg/ha

Range Management consideration

Lower utilisation and longer rest than described for the late-seral stage will be needed for recovery. Some of the production will be annual bromes (cheatgrass, corn brome and Japanese brome) which will only be available in the spring.

Properly Functioning Condition

Scores will range from slightly at risk to highly at risk. Lack of biological crusts, litter, low root volume and high cover of bare ground contribute a low score.

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Early-Seral

Okanagan Lower Grasslands Antelope brush—needle-and-thread grass early-seral.



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Plant Community Early-Seral	
Species	Canopy cover (%)
Bluebunch wheatgrass	0-5
Needle-and -thread grass	0-40
Annual bromes	5-40
Red three awn and sand drop seed	0-10
Big sage/Antelope brush	10-50
Litter	5-30
Biological Crusts	0-10

Productivity

150 kg/ha

Range Management Considerations

Lower utilization and longer rest than described for the late-seral stage will be needed for recovery. Some of the production will be annual grasses (cheatgrass, corn brome, Japanese brome and bulbous bluegrass) which will be available only in the spring. As these types move to annual grasses, the opportunity to use as fall range is lost.

High cover of big sage or antelope brush may stall recovery even with appropriate grazing. Some treatment to reduce brush cover will be needed.

Properly Functioning Condition

Scores will be non functional to functional at risk. Too much bare ground, high soil compaction, lack of roots, litter and biological crusts, the loss of habitat structure, high incidence of erosion will contribute to low scores.

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Altered States

Annual Bromes

Recovery of the seral stages described above is expected with sufficient time and the right grazing and brush management. An altered state of high cover of annual grasses could be caused by extreme grazing pressure and increased fire frequency. Recovery to perennial plants is not possible without re-introduction by seeding.

No Picture Available

Plant Community	
Species	Canopy cover (%)
Bluebunch wheatgrass	0
Needle-and-thread grass	0
Annual bromes	60-100%
Big sage/Antelope brush	0-5%
Litter	60-100%
Biological Crusts	0-5%

Productivity

200 -1000 kg/ha, highly variable, dependent on spring soil moisture.

Range Management Considerations

Forage is available only in the spring, since cattle avoid grazing once seed has formed.

Proper Functioning condition

These sites will score functional at risk or non-functional. Lack of litter, an unoccupied rooting zone, loss of animal habitat, soil compaction, and erosion will lead to low scores

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