

## Riparian Forest (PC = 70%)

Landowner/operator:	Sample Landowner	Tract #:	2345	Field(s):	3,4
Evaluator:	R. Maggi	Left Bank      Right Bank		Feet	
		Width:	12.0		
Date:	16-Nov-15	Length:	400.0	400.0	Feet
		Acres:	0.11	0.18	

### Riparian Buffer Width

Left Bank	Right Bank
1	2
<i>Present</i>	<i>Present</i>
3	3
<i>Planned A</i>	<i>Planned A</i>
4	4
<i>Planned B</i>	<i>Planned B</i>

4 = The **average** width of the riparian vegetation around or along the natural water source is greater than 100 feet or covers the entire active floodplain.

3 = The **minimum** width of the riparian vegetation around or along the water source is equal to or greater than 50 feet.

1 = Riparian vegetation around or along the water source is absent.

### Site Index Height

Soil Type: Alderwood

Tree Species: Douglas fir      Height: 120  
Feet

5 = Existing tree species have potential to reach 75-100% of the site index height for the soil type.

4 = Existing tree species have potential to reach 50-74% of the site index height for the soil type.

3 = Existing tree species have potential to reach 25-49% of the site index height for the soil type.

1 = Existing tree species have potential to reach less than 25% of the site index height for the soil type.

1	3
<i>Present</i>	<i>Present</i>
4	4
<i>Planned A</i>	<i>Planned A</i>
5	5
<i>Planned B</i>	<i>Planned B</i>

### Riparian Buffer Length

*Gaps are defined as linear portions of the buffer where the buffer width measures less than 50 feet.*

3	3
<i>Present</i>	<i>Present</i>
4	4
<i>Planned A</i>	<i>Planned A</i>
5	5
<i>Planned B</i>	<i>Planned B</i>

5 = Natural plant community generally contiguous, gaps in the buffer do not exceed 10% on the planning unit.

4 = Gaps in the buffer are 30% or less along the entire planning unit.

3 = Gaps in the buffer exceed 30% along the entire planning unit.

1 = Natural riparian plant community is absent on the planning unit.

**Grazing System**

2	2
<i>Present</i>	<i>Present</i>
3	3
<i>Planned A</i>	<i>Planned A</i>
3	3
<i>Planned B</i>	<i>Planned B</i>

- 4 = No livestock use
- 3 = Proper use with a prescribed grazing system applied.
- 2 = Moderate use, with or without prescribed grazing system.
- 1 = Improper use, with or without system.

**Plant Community**

2	1
<i>Present</i>	<i>Present</i>
3	2
<i>Planned A</i>	<i>Planned A</i>
4	3
<i>Planned B</i>	<i>Planned B</i>

- 4 = Diverse mixture of tree heights and diameters, mixed tree species interspersed with diverse understory vegetation. (Includes Evaluation Areas where ponderosa pine is the sole climax species.)
- 3 = Diverse mixture of tree height and diameters dominated by 1 or 2 tree species; interspersed and/or understory diversity is low or absent. (Includes EA's where ponderosa pine is the sole climax species.)
- 1 = Uniform height and diameters dominated by 1 or 2 tree species.

**Snags** (*Snags must meet both diameter and height requirements to be considered*)

3	3
<i>Present</i>	<i>Present</i>
6	6
<i>Planned A</i>	<i>Planned A</i>
6	6
<i>Planned B</i>	<i>Planned B</i>

- 8 = More than 4 snags, greater than 20 inch dbh and 60 feet height per acre. Snags will have at least 50% of bark loosened yet affixed to the trunk.
- 7 = Two to four snags more than 20 inch dbh and/or 5 snags 8-20 inch dbh and a minimum height of 20 feet, per acre. (*No bark requirement*)
- 6 = Three to five snags per acre 6-12 inch dbh and a minimum height of 10 feet.
- 1 = No snags or snags less than 6 inch dbh.

**Downed Woody Material**

2	2
<i>Present</i>	<i>Present</i>
3	3
<i>Planned A</i>	<i>Planned A</i>
4	4
<i>Planned B</i>	<i>Planned B</i>

- 4 = Five logs per acre that are a minimum 12 inches in diameter and greater than 20 feet in length. For optimal benefit the log should have some of its limbs and bark remaining.
- 3 = Three logs per acre that are a minimum 12 inches in diameter and greater than 20 feet in length, or some of the logs missing limbs or losing bark.
- 1 = Less than three logs per acre that are a minimum 12 inches in diameter and greater than 20 feet or logs present are in late stages of decay and no longer possess limbs or retain any bark.

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## Riparian Forest Narrative, PC=70%

Riparian forest habitat includes the area beginning at the ordinary high water line and extends to that portion of the terrestrial landscape that directly influences the aquatic ecosystem by providing shade, fine and large woody material, nutrients, organic and inorganic debris and terrestrial insects. This is also important habitat for wildlife. The riparian forest habitat area encompasses the entire extent of vegetation adapted to wet conditions as well as adjacent upland forest communities that directly influence the stream or wetland system.

*Left bank and right bank are to be determined by looking downstream.*

### Riparian Forest Width

The quality of the riparian zone increases with width and structural complexity of the vegetation within it. A separate streambank analysis for riparian width should occur for both sides of the stream. This will allow for differences in management activities on either side of the stream or for changes in ownership. For example: if a property line runs down the center of the stream, then it may be appropriate to only evaluate one side.

*Ditches which contain salmonids will need to have the riparian area section completed.*

### Site Index Height

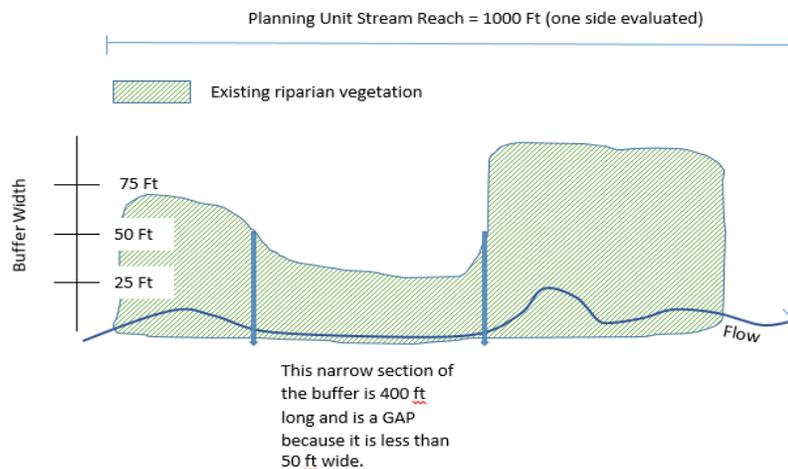
The presence of trees which can achieve the site index height have the greatest opportunity to provide shade and thermal buffering to the stream, lake or wetland. Thermal buffering is especially critical to stream habitat during the summer because it provides shade to keep water cool, which increases dissolved oxygen, and limits algal and submerged vegetative growth. In winter, riparian areas with a coniferous element can also prevent streams from freezing.

1. Determine soil type of the site.
2. Determine site index species and potential height.
3. Inventory woody vegetation (shrubs and trees) present on the site and their potential heights.
4. Determine if current woody vegetation heights have the potential to reach the height in step #2.

If the site will not support site index species as listed in the soil survey, alternative species can be planted which have the potential to reach similar heights. If the soil does not have a site index species, determine the tallest tree (preferably conifer but deciduous ok) that would grow on the soil.

### Riparian Buffer Length

The quality of a riparian area increases with the width, complexity, and linear extent of its vegetation along a stream.



Conclusion: This example would not meet Planning Criteria because the Gap in the buffer is more than 30% of the total (400 ft Gap / 1000 ft total buffer length = 40%). 40% is more than the 30% allowable.

## Grazing System

If improperly managed, livestock presence in aquatic habitats can have negative impacts on all habitat elements. These impacts can include, but are not limited to decreases in surface water quality, reduction in plant cover and species diversity, changes in hydrology, and soil erosion.

**To ensure the long term habitat sustainability, livestock should be excluded from aquatic habitats and their associated buffer areas.**

When managed properly, livestock can be used as a management tool in areas where invasive vegetation will outcompete native species.

## Plant Community

A diverse mixture of tree species, heights, and diameters is more valuable to wildlife than uniform stands. In natural functioning riparian ecosystems, insects, disease, flooding, fire, erosion, and windthrow damage all contribute to creating a mixed stand. Where sufficient hydrology exists, natural riparian communities contain several species of trees, shrubs, and herbaceous vegetation. Riparian areas should have multiple canopy layers which will provide varied habitat niches for many species of wildlife. *An exception to multiple canopy layers is ponderosa pine forests where understory growth can be highly variable.*

## Snags

Snags are utilized for their associated foraging, nesting, roosting, and perching values. Snags which have loosened bark provide nesting and forage for a large number of species because of decayed heartwood. To mimic natural riparian conditions, snags of varying tree species, ages and decay stages should be encouraged. Snags can be created from killing live trees using various techniques including herbicide treatments, topping, girdling, high-cut and inoculation with fungal rots\*. Snags also play a key role in large woody debris recruitment into surface water.

**\*These techniques have varied costs, success rates, and risk to human and forest health. Careful evaluation of these factors should be preformed before selecting a technique.**

If woody vegetation is planned on a site that is currently without, evaluate future snag density based on the potential for these trees to naturally become snags. A landowner can meet an RMS for snags by planting trees which have the potential to meet the RMS size criteria.

*Bird boxes are not a substitute for long term snag production.*

When evaluating this element, count all snags which are within the riparian area as defined in the riparian width question. For example, if the landowner currently has a 5 foot riparian buffer and they need to increase the buffer to 25 feet to meet local regulations (RMS level), evaluate all snags within 25 feet of the waterbody.

## Downed Woody Material

Downed wood enhances wildlife habitat by providing sites for feeding, resting, reproduction, and travel routes. Decomposing wood on the riparian forest floor is a habitat element for birds, small mammals, reptiles, amphibians, and invertebrates. In addition, woody material on the ground provides sites for nitrogen fixation and nutrient cycling, moisture regimes for establishment of seedlings and mycorrhizal fungi growth mediums. [Logs which have begun decomposition but still retain branches and bark are the most beneficial for wildlife](#). An additional function for downed wood is its potential to be transported into the stream channel by overland movement from flood water or by falling directly into the stream to become large woody debris. Large woody debris serves several important instream functions which are discussed in the Instream portion of this Habitat Guide. If downed woody material is identified as a missing component, consult a wildlife biologist before planning to the RMS level. Utilization of onsite material may be a conflict with local or state forest harvest regulations.

*Note: When determining downed woody material and snag densities utilize a sampling method which closely estimates the actual numbers. Do not attempt to count all the snags in a 100 acre plot, for example, instead sample five, 1 acre plots, and divide by five to get a per acre estimate.*