

# Riparian FACTSHEET



Ministry of  
Agriculture

Riparian Factsheet - No. 3 in Series

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## PLANNING THE AGRICULTURAL RIPARIAN PLANTING

This factsheet is a form to assist in the development of a clear plan for planting new or modifying existing riparian vegetation to correct an identified problem or achieve a specific function.

### Planning to Plan

The function(s) that the vegetation is expected to perform must be clearly identified in the following planting plan. The desired function(s) influences the selection of plant species, the type of plant material used, the planting location, spacing and post-planting management of the site.

### Writing the Plan

The following plan contains a number of questions that will lead you through planning your planting. Information you require to answer these questions can be found in the other factsheets in this series, the *Riparian Management Field Workbook* and in the other documents referenced. A useful reference is the BC Agri-food Knowledge Platform, the BC online agricultural information portal. The Platform contains a large amount of related information about riparian areas (<http://www.agrifoodbc.ca/industry-glance>).

## Agricultural Riparian Planting Plan

### Gather Site Information and Delineate Objectives

**Step 1.** The first step in the development of your plan is to collect information about the site to be planted. This includes information about physical aspects of the site, existing vegetation and the watercourse. If you completed the *Riparian Management Field Workbook* you have already collected much of this information.

**Step 2.** Clearly identify the factors(s) or function(s) identified during the riparian health assessment that you wish to improve by planting the riparian area.

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**Step 3.** Describe in general terms what you intend to do to achieve the desired improvement in the factor or function.

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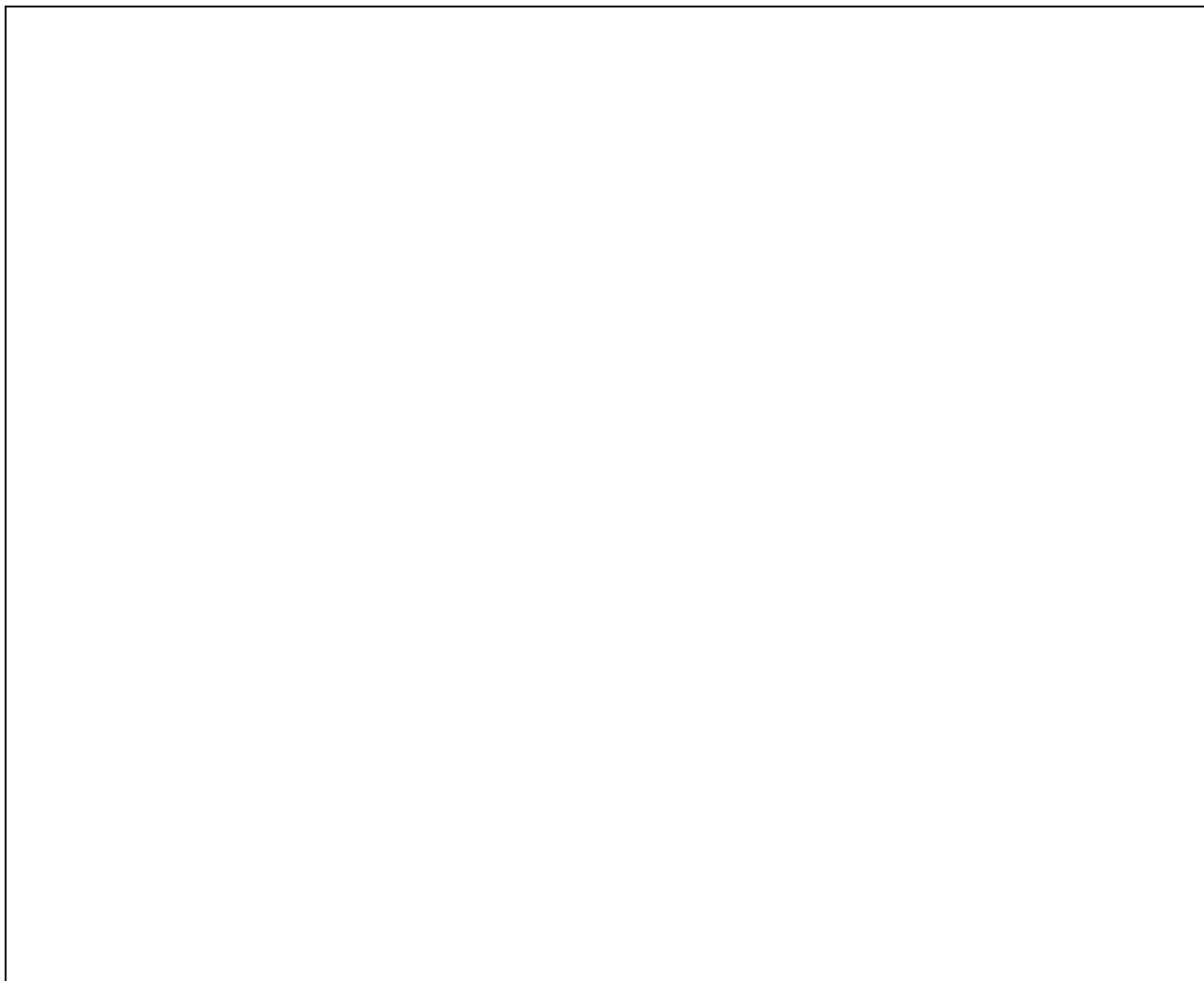
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**Step 4.** Draw a simple map of the area to be planted. On the map include lines that divide moisture zones and the location where trees, shrubs, sods and seed will be placed.



## Evaluate Site Information & Create Planting Plan

Only the things that are important for the success of the planting should be evaluated. These include the things that will make it difficult to do a good job planting the site or for the plants to survive and do well.

### ***1. Moisture***

There must be adequate moisture available to meet the needs of the planting. In the first year plants are generally small and root systems are not fully developed, thus moisture is usually more critical. Moisture can be from rain, ground water, or irrigation. Rainfall is often unreliable when plants are small. If you intend to depend on rainfall a short-term source of irrigation should be provide for the planting (this may involve transporting water). Ground water is an obvious source of water in riparian areas. The moisture zones (see ***Factor to Consider When Planting Agricultural Riparian Areas***, Factsheet No 2) within your proposed planting area should be located and identified on your map using the following procedures:

#### **Moisture Zone Assessment**

1. In the area to be planted dig a series of small holes a meter apart and on a transect perpendicular to the watercourse starting at the edge of the water. Estimate the depth to the water table. Draw a line on the map through the area to be planted where the water table in the middle of the growing season (other than at a time of flood) is 0.3 meters (1 foot) from the surface. If this evaluation is not being done during the growing

season estimate where the line should be based on the current depth to the water table. For more information see the moisture zone description in the factsheet *Factor to Consider When Planting Agricultural Riparian Areas*, Factsheet No. 2.

- Using the descriptions of moisture zones in that factsheet, draw a line through the area to be planted that estimates the separation of moisture zones 2 and 3.

### Summer Moisture

In areas of the province that do not have adequate rainfall during the summer months to meet the needs of new plant material one of the following options should be selected for moisture zones 2 and 3:

- Irrigate the planting.
- Mulch the upland part of planting with moisture conserving materials.
- Use large plant material that will have access to the water table during the first summer (both rooted and unrooted plant material) – this option is expensive and will only work in zone 2.
- Deep (down to water table) planted cuttings (cottonwood and willow) can be an effective strategy for zones 2 and 3.
- Select plant material for upland areas that can tolerate dry periods in the first year (*this restricts upland plantings to seeded grass and forbs and a few potted or ball&burlap drought tolerant shrubs*).

How will plants in moisture zones 2 and 3 be supplied with moisture?

- Permanent Irrigation system \_\_\_\_\_
- Temporary Irrigation system \_\_\_\_\_
- Transported water \_\_\_\_\_
- They will not be supplied with water \_\_\_\_\_

Will mulch be used to conserve moisture? \_\_\_\_\_

If yes: What material(s) do you plan to use

\_\_\_\_\_

Where will it be applied?

\_\_\_\_\_

How much will be applied?

## 2. Soil

**Slope and Slumping Banks** (see the *Drainage Management Guide* for more information)

Is the slope of the bank greater than 1 horizontal to 4 vertical? \_\_\_\_\_

If yes: What will be done to stabilize this bank?

Is slumping occurring? \_\_\_\_\_

If yes: What will be done to eliminate slumping?

### Major Soil Concerns for Planting

Are there problems such as hard soil, rock or wood in the soil that will impede planting? \_\_\_\_\_

If yes: How will the planting be modified to deal with this problem?

### Bare Soil

Are there areas of bare soil? \_\_\_\_\_

If yes: Mark areas of bare soil on the map.  
 How will bare soil areas be managed?

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**Nutrient Application**

Riparian areas are usually nutrient rich and high in organic matter. It is likely that grass and forbs seeded under trees and shrubs will need little or no nutrient application, trees and shrubs may need more. The only way to ensure that adequate nutrients are available is to have a sample of the soil from the planting site analyzed. Nutrients can be placed in the planting hole of trees and shrubs. If this direction is chosen the following precautions must be taken in order to prevent damage to the newly planted trees and shrubs:

- Ideally, fertilizer tablets specifically designed for use with tree and shrub planting will be used. These are available from tree planting supply companies.
- Otherwise, use a small amount of low analysis granular fertilizer in each planting hole.
- After the hole is dug, mix the granular fertilizer with the soil in the bottom of the hole and then cover this soil-fertilizer mix with a layer of soil.
- Plant the tree or shrub and water in well.

Do you plan on applying fertilizer to your riparian planting? \_\_\_\_\_

If yes: What nutrients do you plan to apply to your riparian planting in the first 3 years? At what rate will nutrients be applied? When will they be applied? How will they be applied?

Nutrient	Application Rate	Timing	Application Method

**3. Weed Competition**

Is there vegetation currently on site which is likely to compete with the plants you intent to plant? \_\_\_\_\_

If yes: What vegetation currently exists?

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What methods, materials and equipment are needed to deal with exiting vegetation?

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Can herbicides be sprayed or wick applied? \_\_\_\_\_

If yes: Which herbicides and how will they be applied?

Herbicide	Application Rate	Timing	Application Method

Will mulch help manage weed competition? \_\_\_\_\_

If yes: What materials will be used? How much will be applied? When?

Material	Amount	Timing

#### 4. *Animals*

##### **Rodents**

Is there evidence of, or probability of vole, beaver or other rodent damage to trees and shrubs? \_\_\_\_\_

If yes: How do you plan to manage them to minimize damage?

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##### **Ungulates**

Are ungulates likely to be a concern for tree and shrub plantings? \_\_\_\_\_

If yes: How do you plan to manage them to minimize damage?

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##### **Livestock**

Are there livestock that may be a concern to the planned planting? \_\_\_\_\_

If yes: How do you plan to manage them to minimize damage?

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Are livestock fences needed? \_\_\_\_\_

If yes: What type and how long?

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Will the planting be grazed? \_\_\_\_\_

If yes, the spacing of the trees, shrubs and forage species selection should reflect this.

#### 5. *Selecting Plant Material and Seed*

**Step 1.** From the factsheet entitled *Selecting Plants for Agricultural Riparian Plantings*, Factsheet No. 4, identify all plants that will grow in your area and are appropriate for the riparian moisture zones that you will be planting (zone 1, 2, and/or 3).

**Step 2.** Select 2 or more plants for each zone that will perform the desired functions of each zone and list them below. (e.g. If shade on the watercourse is required, plant a tree or shrub close enough to the water to ensure it will provide the desired degree of shade at maturity.)

Plant	Moisture Zone	Function	Form (tree/shrub)

**Step 3.** Make sure that the complete planting plan provides the following if required (may not be appropriate in all situations):

- a. Use early successional species to provide the initial cover in each zone.
- b. A mix of trees and shrubs that provide all the functions required.
- c. A seed mix (grass and forbes) that will provide greenup for erosion control and competition to threatening invasive weeds.
- d. Seed or transplants of sedges, rushes or similar plants at the waters edge.

**Step 4.** Choose the type of plant material to be used for each plant (seed, cuttings, plug, 1 gal pot, ball & burlap, etc;)

Plant	Planting Stock Type

**Step 5.** On your map, identify the areas to be seeded and type of seed that will be used:

Species	Seeding Rate

**Step 6.** On your map, identify the location of each tree and shrub to be planted. Remember to space each tree and shrub as suggested in the riparian factsheet *Selecting Plants for Riparian Plantings*, Factsheet No. 4. Remember to locate large trees for shade close enough to the stream so they will provide shade. Fill the riparian area with as many shrubs and trees as spacing will allow you to maximize riparian function. Use symbols for each of the trees and shrubs on your map.

Code / Symbol	Plant
Δ	
X	
0	
1	
Etc;	

**Step 7.** Calculate the amount of plant material required.

Plant or Seed Mix	Planting Stock Type	Amount of Plant Material Required

## 6. Other

### Labour Needs

Identify your labour needs for site preparation, planting and maintenance for the first year.

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**Permits of Approvals** (see the *Drainage Management Guide* for details about approvals)

Is a permit required to carry out the work in this planting plan? \_\_\_\_\_

If yes: Fill in the date when you applied for a permit and when it was received.

Date Applied For	Date Received

**Works Window** (see the *Drainage Management Guide* for details about works windows)

What is the works window for this project (this only applies to instream works and plantings connected to them).

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Note that the best planting time for trees and shrubs is early spring. The worst planting time for trees and shrubs is mid-summer.

**Timeline**

Identify the timeline for each of the steps indicated in your workplan over the last few pages.

Action Step	Date	Materials Required	Labour	Equipment	Step Complete (✓)

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**FOR FURTHER INFORMATION CONTACT**

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