

ALBERTA WATER COUNCIL



NOVEMBER 2013

Riparian Land Conservation and Management Report and Recommendations



2.0 Ecological Definition

The Council has developed an ecological definition of riparian lands that was supported by the sectors involved in this project. This science-based definition is necessary to inform and advance conservation and management outcomes. The need for a common definition arose because riparian lands are defined in various ways. The definitions often differ among sectors and are used for different purposes (e.g., academic and scientific use, legislation and regulation, land use planning, resource inventories and mapping). A clear and consistent understanding as to what characterizes riparian lands in an ecological context, including their geographic location and extent, provides a starting point from which stakeholders can begin to develop conservation and management outcomes.⁶

This ecological definition is intended to help provide consistency, align with research needs and ultimately inform decision makers, thus improving conservation and management of riparian lands. The definition is not intended to affect legal rights or preclude or predetermine any particular land use activities on riparian lands. As it is not a legal definition, it is not intended to approve, prescribe or imply management restrictions, particularly in relation to regulation.

The process for developing the ecological definition was iterative. Firstly, a comprehensive list of definitions were compiled. These existing definitions were then evaluated using a list of important core concepts, and the following ecological definition was created:

Riparian Lands — An Ecological Definition: Riparian lands are transitional areas between upland⁷ and aquatic ecosystems. They have variable width and extent above and below ground and perform various functions. These lands are influenced by and exert an influence on associated water bodies⁸, including alluvial aquifers⁹ and floodplains. Riparian lands usually have soil, biological, and other physical characteristics that reflect the influence of water and hydrological processes.

6 Other terms are defined in the glossary near the end of this report.

7 For the purpose of this definition, “upland” is considered to be the land that is at a higher elevation than the alluvial plain, stream terrace(s), or similar area associated with a water body.

8 A water body is any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent or occurs only during a flood, and includes but is not limited to wetlands and aquifers (generally excludes irrigation works). Source: *Alberta Water Act*.

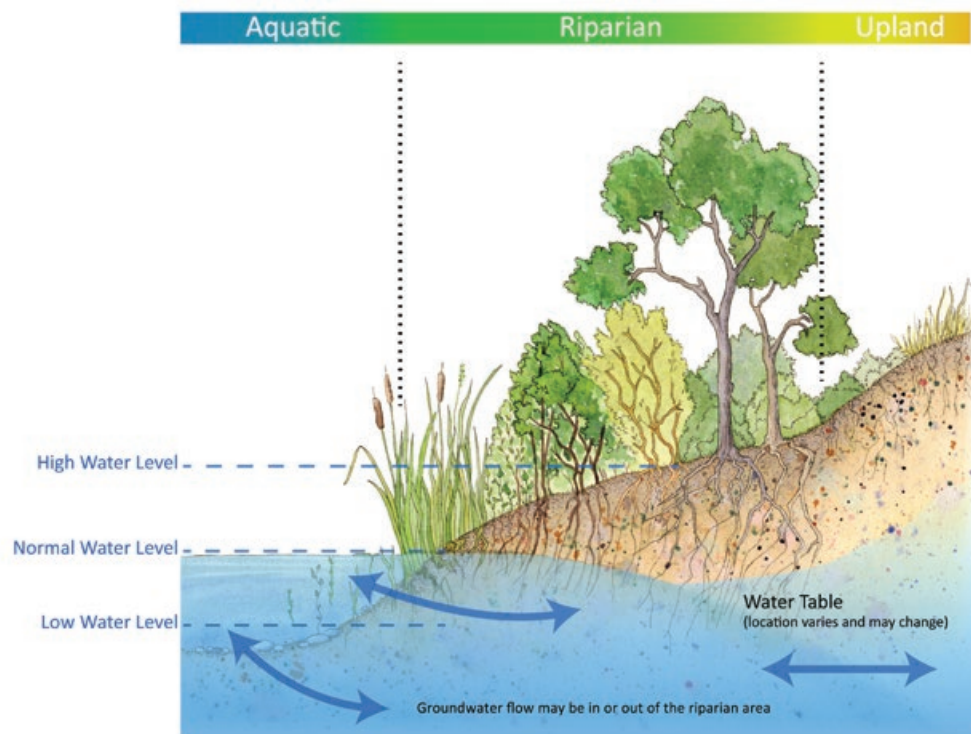
9 For the purpose of this definition, alluvial aquifers are defined as areas where groundwater is under the direct influence of surface water.

2.1 Ecology of Riparian Lands

Riparian services, functions and values flow directly from the vital and dynamic connections between water bodies, riparian zones and uplands. Riparian lands vary in width and depth above and below ground, where the riparian land on either side of the water body is not symmetrical. Groundwater may flow into or out of an associated surface water body, depending on conditions. The subsurface region where surface water and groundwater interact is known as the hyporheic zone; this is where biochemical processes and high levels of exchange occur, involving water, nutrients, other solutes and organisms.

Figure 1¹⁰ illustrates the core concepts in the ecological definition of riparian lands.

Figure 1: Example of riparian land with water table from an ecological perspective



Provided by Cows and Fish, 2013¹¹.

10 Figures 1 is a visual representation of riparian lands but structure and species vary depending on location.

11 Figure 1 is credited to ©Cow and Fish (www.cowsandfish.org). Input on an existing illustration was provided to create this figure.