

New willow fieldguide helps identify important plants

by Ed Berg

Barclay willows are in bloom now along the roadsides. These favorite shrubs of browsing moose grow well in disturbed soils along road right-of-ways, as well as high in alpine meadows above tree-line. Their plump catkins, which are actually clusters of many tiny flowers, are in full display right now, along with the emerging leaves and last year's brown "willow rose" galls.

Willows are benevolent plants on our landscape. They are at the bottom of the food chain for many species, most notably moose and snowshoe hares, and everything that eats moose and snowshoe hares. Beavers and caribou enjoy willows, as do ptarmigan and grouse that eat willow buds in the winter. Many insects lay their eggs on willows and their hungry larvae feed on the buds and leaves. Pollinating insects like bees and flies sip nectar from willow flowers. Human beings don't eat much willow, but they certainly consume a lot of aspirin, which was originally extracted from willow.

Dominique Collet of Sterling has written a new fieldguide on willow identification, called *Willows of Southcentral Alaska*. The book is richly illustrated with excellent watercolor paintings and line drawings, and is designed to assist non-specialists in identifying the local willows. The technical terminology is kept to a minimum, and the distinguishing features are highlighted in the pictures with pointer lines, similar to Peterson's bird fieldguides.

Willow cuttings are often planted for streambank restoration projects, e.g., Jim's Landing on the Kenai River. It is important to collect the right species for these projects (e.g., feltleaf and Barclay willow), because many willow species do not transplant well and will die (such as bebb and scouler willow). The Kenai Watershed Forum published this book, with funding from the U.S. Fish and Wildlife Service and support of many other agencies, especially with an eye toward the book's use in future streambank and landscaping projects.

Generally speaking, willows are hard to tell apart: there are 26 species in our area, out of about 350 species worldwide. Dominique's book has several identification keys that lead the reader step-by-step

through a chain of choices to the identity of a specimen of interest.

Unlike most flowering plants, the sexes are separate in willows; there are separate male and female plants. The flower clusters (catkins) of the male plants have showy yellow stamens that release pollen, whereas the female flowers have plump pods that will split open to release tiny seeds embedded in fluffy plumes of cotton. So, when identifying a willow in bloom, the first thing to decide is whether you have a male or a female plant. Following the steps of the "Summer Key" in the book, you can easily pin down the identity of your flowering specimen.

Oftentimes, however, a willow will not have its flowers available when you want to identify it. Some willows flower early in the spring and then drop their flowers (e.g., scouler willow); some don't flower until mid-summer, such as gray-leaf willow, and of course they all drop their flowers in the winter. For willows with leaves but no flowers, Dominique has provided a "Vegetative Key," which draws heavily of leaf characteristics such as size, shape, veins and hairs.

From a practical point of view, the "Winter Key" may be the most useful part of the book. For streambank restoration projects, willows have to be collected during the winter when they are dormant. There is no point in collecting species that won't survive transplanting, so this is where "the rubber meets the road." Landscapers gathering willows in the winter can use this book to tell which species to pick and which to leave behind.

Willows have contributed a lot to the history of the Kenai National Wildlife Refuge. From historical records we think that there were not many moose on the Kenai before the late 1800s. Prior to European settlement, the Dena'ina natives focused on caribou, and of course salmon, and moose apparently did not play an important part in their culture. Trapper and guide Andrew Berg reported a series of wildfires on the Benchlands between Skilak and Tustumena Lakes in 1871, 1891, and 1910. These burns probably stimulated prolific willow growth, which can still be seen today in the form of willow trees and dense tall willow thickets above Bear Creek and Moose Creek.

With abundant post-fire willow browse the Benchlands became a world-class hunting area for the “giant Kenai moose,” and by the late 1890s European hunters were arriving to spend their summers hunting for these moose and the other abundant game animals. At the same time local residents were hired as meat hunters, and the moose population was severely hammered. Caribou were hunted to extinction by the mid-1910s and wolves were extensively poisoned, some say to extinction, out of fear of rabies, during the same time period. This severe over-hunting led conservationists and hunters to petition Congress to set aside a game preserve to protect the moose and its habitat. After several decades of discussion, in 1941 President Franklin Roosevelt authorized the creation of the Kenai National Moose Range, which later be-

came the Kenai National Wildlife Refuge in 1980 under ANILCA. And this all started with the willows coming in after some burns!

Copies of Dominique’s *Willows of Southcentral Alaska* can be obtained free of charge at the Kenai Watershed Forum office in the Blazy Mall in Soldotna (260-5449).

Mark your calendars for August 2, 2003, when Kenai NWR and Alaska Maritime NWR host a Centennial Celebration of the National Wildlife Refuge System. The event is free to the public at the Alaska Fairgrounds in Ninilchik and lasts from 10 a.m. to 8 p.m.

Ed Berg has been the ecologist at the Kenai National Wildlife Refuge since 1993. Previous Refuge Notebook columns can be viewed on the Web at <http://kenai.fws.gov>.