Appendix 9
General Descriptions of Major Wetland Plant Communities in the upper portion of the Flathead Subbasin

The following paragraphs from Greenlee (1999) provide general descriptions of major wetland plant communities in the northern two-thirds of the Flathead Subbasin, organized by the palustrine classes of Cowardin et al. (1979).

FORESTED VEGETATION

Riparian and wetland forests in the study area are dominated by both needleleaved and broad-leaved deciduous vegetation. Islands and alluvial terraces along major rivers like the Flathead, the Swan, and the Stillwater are dominated by stands of black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) and spruce (*Picea* sp.), and western redcedar (*Thuja plicata*) or grand fir (*Abies grandis*) occasionally dominates low elevation tributaries. Low gradient streams at higher elevations often have riparian forest canopies dominated by subalpine fir (*Abies lasiocarpa*), while higher gradient streams frequently have narrow, poorly developed riparian areas. Poorly drained sites on the margins of fens, beaver ponds, or toe slope seeps are usually dominated by wet spruce forests, or by black cottonwood and smaller amounts of spruce, which eventually replaces cottonwood at such sites. Pothole lakes often have a narrow fringe of black cottonwood, quaking aspen (*Populus tremuloides*), and/or western redcedar that quickly gives way to upland forest because of the gradient of the slopes around these sites.

SCRUB-SHRUB VEGETATION

Riparian and wetland shrublands in the study area occur in peatlands, from terraces to the active floodplain of low and high gradient streams and rivers, around beaver ponds, and on the edge of marshes, potholes, and lakes. Drummond's willow (*Salix drummondiana*) is the most common willow species found in the study area; stands of Drummond's willow are found on terraces of low gradient streams and rivers at mid-elevations and higher, and as a mosaic with marsh vegetation in wet meadow complexes (which often have some beaver influence). Bebb's willow (*Salix bebbiana*) and Geyer's willow (*Salix geyeriana*) are much less common as dominant species. Sandbar willow (*Salix exigua*) stands dominate active gravel- and sand-bars. Mountain alder (*Alnus incana*) and red-osier dogwood (*Cornus sericea*) dominate communities along higher gradient streams, and both mountain alder and alder leavedbuckthorn (*Rhamnus alnifolia*) form communities on the fringes of fens and lakes. Bog birch (*Betula glandulosa*) is a common shrub community on peatlands.

EMERGENT (HERBACEOUS) VEGETATION

Herbaceous emergent vegetation in the study area is typically found growing in a variety of settings, including peatlands, marshes, potholes, beaver ponds, wet meadows, lake-edges, oxbows, and sloughs. This type of vegetation usually occurs as a complex mosaic of monocultures, due to the rhizomatous habit of many of the constituent species. Slender sedge

(*Carex lasiocarpa*), Buxbaum's sedge (*Carex buxbaumii*), and mud sedge (*Carex limosa*) are three sedges that can dominate portions of fens and sedge meadows. Marshes in the study area are typically dominated by cattail (*Typha latifolia*), hardstem bulrush (*Scirpus acutus*), beaked sedge (*Carex utriculata*), inflated sedge (*Carex vesicaria*), and awned sedge (*Carex atherodes*). Wet meadows are frequently dominated by exotics like reed canarygrass (*Phalaris arundinacea*) or redtop (*Agrostis stolonifera*), or by native grasses like tufted hairgrass (*Deschampsia cespitosa*) or bluejoint reedgrass (*Calamagrostis canadensis*).

AQUATIC BED VEGETATION

Palustrine, Lacustrine, and Riverine aquatic bed vegetation occurs in littoral (< 2m) and limnetic (> 2m) zones of ponds and lakes or on the bed of slowmoving perennial streams in the study area. An aquatic community classification for western Montana and northern Idaho is in preparation (Pierce, pers. comm.). What follows are some of our observations of aquatic dominance types in the study area. Yellow pond lily (*Nuphar polysepalum*), a floating-leaved species, is a common dominant aquatic species. Water milfoil (*Myriophyllum verticillatum*) and mare's tail (*Hippuris vulgaris*) dominate some aquatic communities and are usually completely submersed or partly emersed. Coontail (*Ceratophyllum demersum*), fennelleaved pondweed (*Potamogeton pectinatus*), Illinois pondweed (*Potamogeton illinoensis*), and *Chara* sp. (an algae) are dominant in other aquatic communities and are most often completely submersed.