

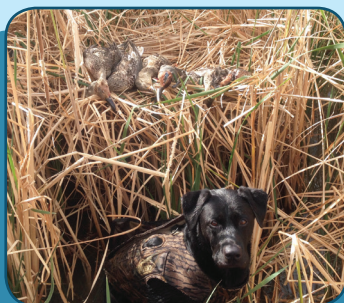
What are Wetlands?

Wetlands are areas where the ground is wet or saturated during at least part of the growing season. In addition to characteristic **hydrology**, wetlands have **hydrophytic plants** that are specially adapted to grow in flooded soils and **hydric soils** that lack oxygen for part of the year.



Wetlands provide numerous benefits to society. Some important benefits in the Weber River watershed include:

1. **Water quality improvement:** About one-third of all stream and river miles in the watershed have major water-quality concerns.
2. **Flood reduction:** Major flood damage occurred in 2011 when the Weber River breached levees during spring runoff.
3. **Recreational opportunities:** Wetlands in the watershed support recreation opportunities including bird-watching and waterfowl hunting.
4. **Wildlife habitat:** Weber wetlands help support millions of migrating and breeding birds along Great Salt Lake and many native amphibian and fish species higher in the watershed.



Weber Wetlands

Some examples of wetland types found in the Weber River watershed include:

Dense aquatic bed of *Stuckenia pectinata* (sago pondweed) in a managed impoundment near Great Salt Lake.



Predominantly snowmelt-fed wet meadow in the upper watershed.

Alkaline depression adjacent to Great Salt Lake with *Salicornia rubra* (pickleweed) displaying its fall colors.



Mid-elevation montane willow shrubland along a small tributary to the Weber River.

For More Information

For more information about the Utah Geological Survey wetland program and results of the Weber River watershed survey, visit <http://geology.utah.gov/resources/wetlands> or contact the state wetland coordinator, **Diane Menuz**, at dmenuz@utah.gov or 801-538-7436.

Wetland Condition in the Weber River Watershed

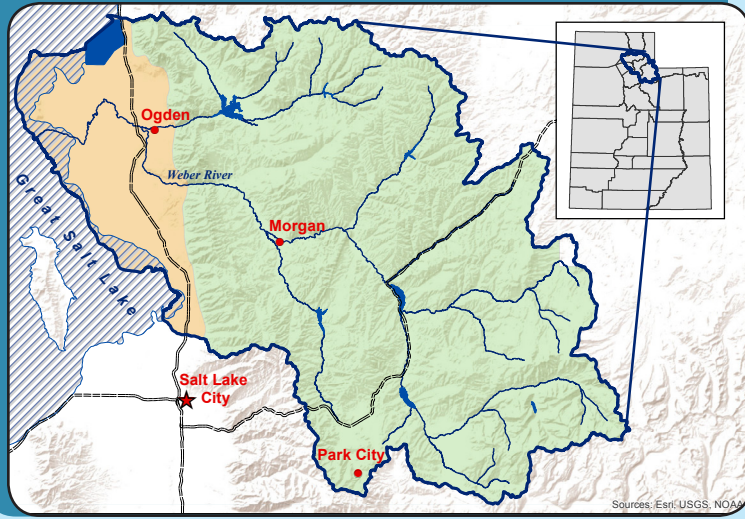


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The Weber River Watershed

The Weber River watershed contains a small part of Box Elder and all or much of Weber, Morgan, Davis, and Summit Counties in northern Utah; a small part of the watershed is located in Wyoming.

The watershed includes two major regions. The **basin and range region** (in orange, below) includes the Wasatch Front and the east shore of Great Salt Lake. The **montane region** (in green, below) includes mountain valleys, foothills, and montane areas.



Wetland Monitoring

Staff from the Utah Geological Survey conducted wetland assessments at 72 sites in the Weber River watershed in the summer of 2014. Sites were evaluated for indicators of wetland health and wetland stress.

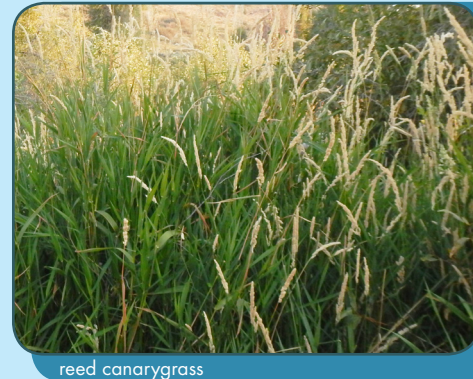
The survey found that wetland condition generally improves with increasing elevation, although **non-native plant species** are problematic throughout the watershed. Other impacts common in some areas of the watershed include **altered hydrology**, **extensive soil disturbance**, potentially **polluted water inputs**, and **confined landscape settings**.

Recommended Actions for Improvement

Continue control efforts for invasive plant species. The aggressive, invasive common reed (*Phragmites australis*) has taken over large areas around Great Salt Lake, displacing bird habitat and food sources and impacting recreational opportunities. Plant species such as Canada thistle (*Cirsium arvense*) and quackgrass (*Elymus repens*) are problematic in wetlands in the montane region. Information about state-listed noxious weeds, including funding for control efforts, is available from the Utah Department of Agriculture and Food (<http://ag.utah.gov/plants-pests/noxious-weeds.html>).



Seed with native plant species whenever possible. Non-native grasses and clovers can establish and come to dominate wetlands, displacing native species and decreasing habitat variability. Reed canarygrass (*Phalaris arundinacea*) is one species to watch out for—it is common in mountain valleys and foothills and is considered a nuisance in several other states. The Native Seed Network provides seeding recommendations and information on seed availability (<http://www.nativeseednetwork.org>).



Protect rare and uncommon wetlands. These include wetlands with relatively natural hydrology in the basin and range region and wetlands with low (less than about 5 percent) cover of non-native plant species in most of the watershed. Potential mechanisms for protection include land-use planning directives, land easements, and direct purchase.

Manage grazing sustainably to minimize impacts.

Soil disturbance, such as deep pugging and extensive bare patches, and lack of willow regeneration are two indicators of over-grazing. Grazing impacts are most noticeable in the foothills and the Wasatch Front. Private land owners can receive technical and financial assistance for grazing improvements; for more information, contact the Utah Department of Agriculture and Food's Wasatch GIP Coordinator, Ashley Longmore (ashleyhansen@utah.gov or 435-760-9021) or the closest Natural Resources Conservation Service local service center (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/ut/contact/local>).



Improve wetland water quality. While wetlands can help filter sediments, nutrients, and other contaminants from water, high levels of input can exceed wetland capacity for filtration and alter natural wetland dynamics. These water-quality stressors can then be passed along to adjacent streams and lakes. Improve wetland water quality through the use of best management practices such as water-wise landscaping, picking up after pets, and minimizing soil disturbance adjacent to and within wetlands. For more tips, visit <http://www.utahcleanwater.org/best-management-practices.html>.



Encourage preservation of natural buffers along wetlands.

Wide, undisturbed areas adjacent to wetlands protect wildlife from disturbance, provide more storage for floodwaters, and reduce the amount of pollutants reaching wetlands. Incentives or directives for maintaining buffers could enhance wetland condition and function, especially in mountain valleys, foothills, and the Wasatch Front where wetlands are most likely to have small buffers.

For more information on implementing these recommendations, contact the Upper Weber Basin Watershed Coordinator, Andy Pappas, at 801-538-7436 or gpappas@utah.gov.