



Mike Bullerman planting native prairie in a recently scraped roadside ditch in Hamilton County.

Consider the Ditch

There exists, in the farmland watersheds of the eastern Great Plains and Midwest, a sizable and obvious land feature easily overlooked - and a valuable resource in the Ribbons of Prairie vision. It is the complex of straight “ribbons,” the road ditches lining the grid of county roads surrounding all cropland. Once precipitation (and sometimes irrigation water) leaves the crop field it comes to a ditch. This can be a prolonged snow-melt stream, a brief slow trickle after a light shower or a high-volume fast-moving pulse of runoff water carrying a lot of soil and chemical residues (soluble nitrogen fertilizer, herbicide, fungicide and insecticide) to the sea.

The traditional view in agricultural areas is that since they can't be farmed or otherwise serve as a source of income, ditches are just waste places. Their drainage function is acknowledged; there must be some type of structure to receive runoff from fields. So we accept the necessity of ditches and pay taxes on them as a communal responsibility which comes with the privilege of land ownership. Fortunately, that does not involve a large area on any one holding. The problem with seeing ditches only as marginal lands - places to dump things, unsightly drains to move water away quickly and weed patches presenting maintenance challenges - is that they often are not considered at all, much less seen as a valuable asset.

Just as streams and rivers can be seen as arteries and veins throughout the landscape, the ditches (and waterways on croplands) are smaller capillaries. In animal physiology the blood and the circulatory system are independently classified as organs. They both function in very complex and interconnected ways with all other parts of the body, delivering essential materials and removing waste products. The blood and circulatory system metaphor for water and the places where it flows is certainly not new, but it must be embraced as humanity puts more pressure on water resources and ecosystems globally. We need to elevate the importance of recognizing the values inherent in water – itself an organ with its own living ecosystem – and the physical system in which it moves, comprised of aquifers, field waterways, ditches, small creeks and streams, large rivers and oceans.

What is the value of a system of ditches? As little grassland corridors, ditches slow down drainage water, capturing silt and filtering out other impurities. Nebraska groundwater recharge comes from precipitation; no doubt some of this percolation into the ground happens in ditches. A simple calculation of the area of ditch grassland in Hamilton County gives an idea of the size of this filtration network. In a ten mile by ten mile grid, or a hundred square miles, or 64,000 acres, there could be about 800 acres of water-collecting grassland in ditches - four acres per mile, both sides of the road. This is not a huge proportion, but it is worth considering. In a major rainfall event a huge volume of water ends up in ditches in a hurry. What if they could retain some of that water a bit longer? And the cropland and stream corridor as well? Much more water would go into the ground. →



**Supplement to
Prairie Plains Link
February, 2013**

Incremental changes in how water remains on the landscape longer would benefit both groundwater and surface water. Grassland has the wonderful ability to hold surface water at the base of stems and leaves, and facilitates percolation down through the water column because of the nature of the root system and all the burrowing life which aerates the soil. Using similar principles of nature in field management improves water holding capacity of the land immensely.

Road ditches provide wildlife habitat for many species: invertebrates, including pollinator insects; amphibians, reptiles, small mammals and birds. Hunters have always appreciated the upland game bird habitat they provide, especially heavy winter grass cover. In some locales ditches harbor the last surviving remnants of native prairie and wetland ecosystems. Most of the uncommon Sullivant's milkweed (*Asclepias sullivantii*) which Prairie Plains has located in the last 12 years is in road ditches or in areas we have planted with seeds from ditch populations. Ditches add diversity to the agricultural landscape, and at times are showy with wildflowers such as prairie roses. Prairie Plains seed collectors harvest lots of viable seed from ditches and have marked about 5,000 GPS waypoints in those with many native prairie and wetland species. During times of drought, ditches are the wettest collecting spots around, allowing harvest of seed that may not be found elsewhere.

Prairie Plains advocates improvements in ditch restoration and management as integral parts of the greater regional water management system. Ditches play a large role in native species preservation and restoration. Those which presently support remnant native species populations can be identified and protected. We have a long collecting history in Hamilton County and already know where our best prairie roadsides are. We also are working with Brian Crabtree, the county weed superintendent, to make sure road maintenance workers know where these sites are in order to avoid spraying. In return, we can scout noxious weeds populations for the county and continue to share information.

Unfortunately, most ditches in crop country are biologically poor brome grass-dominated grasslands now. Ditches lacking native diversity could gradually be restored to become wild again with big bluestem, prairie clovers and many other species. Wildlife habitat would increase, and water management would improve with the native plant community. In some places water could be pooled for longer periods, providing habitat for amphibians and birds. Just as we can envision diversity of plants, pollinator habitat, the edible wild and watchable wildlife making our lives richer along the rivers in the Ribbons of Prairie vision, we can also consider the "waste places" like the road ditches as vital parts of the landscape.



Sullivant's milkweed (*Asclepias sullivantii*) is a beautiful and uncommon native species that Prairie Plains collects in roadside ditches.



Left, Sarah Bailey and Bill Whitney checking out a ditch full of blooming asters in Boone County near Olson Nature Preserve - September, 2010.



Right, Laura Rubeck and Sarah collecting sedges in a wet ditch in Clay County - June, 2012.