Appendix C: Glossary and Guide to Acronyms

Alluvial – deposits of sand, silt, clay, gravel, or other matter derived from flowing water, as in a riverbed, floodplain, or delta; generally young landforms in terms of geologic time.

Alluvial fan – a landscape feature that forms when eroded gravels, sediments, and silts are carried down through steeper water courses and begin to spread out (usually in the shape of a fan) when they reach flatter and slower surface areas. These areas tend to be where water and sediment that has flowed down from uplands will accumulate in a valley bottom.

Anastomosis – the interconnectedness of streams and rivers in a local floodplain, allowing heavy waterflows from rainfall events to easily spill out into the floodplain area; connectivity of the channel to its floodplain.

Aquatic / Wetland Plants – plants that are adapted to tolerate having their roots inundated with water and that are typically intolerant of drought conditions.

Arrested degradation – a channel evolution state in which incision has occurred but then halted. This may be caused by the stream encountering harder bedrock materials, or by the removal of disturbances, resulting in re-vegetation that locks the stream into a degraded state, preventing erosive processes necessary to widen the stream channel and advance the channel evolution process.

Arroyo – also called a wash. A dry creek, stream bed, or gulch that flows only temporarily or seasonally.

Badlands – area of southwest South Dakota that typically has some extreme temperatures, lack of water, rugged terrain, and sparse vegetation. Geologically, "badlands" are formed when soft sedimentary rock is extensively eroded in a dry climate, exposing sharp spires, gullies and ridges.

Bankfull discharge – measurement of when floodwaters fill to the banks of a stream and are at the point to spill over into the floodplain. In stable streams this occurs every year or two, or every few years in drought situations.

Bankfull stage – the point at which the flow of water just begins to enter the active floodplain.

Bankfull width – the surface width of the stream measured at bankfull stage, which occurs at the bankfull discharge.

Baseflow – the portion of streamflow that is sustained between precipitation events, typically fed by delayed pathways such as shallow or deep subsurface flow of water through watershed soils.

Biotic/abiotic – biotic relates to or results from living organisms, their activities, and interactions, while abiotic refers to aspects of habitat or environment that are not derived from living organisms, such as bedrock, geology, or physical shape of habitats.

Bottomlands – lowlands of river valley floodplains, typically located along riparian areas and consisting of alluvial deposits.

Catchment – an area of the landscape in which water (precipitation) falling on or flowing across the land surface drains into a particular stream or river and flows, ultimately, through a single point or outlet. It is a synonym for drainage basin, or watershed, but the term often has the connotation of a smaller area than that of a drainage basin (a sub-basin).

Channel evolution – the natural process and progression of a stream's channel formation, change, and development over time; how the landscape responds to changing volumes of water in an effort to reach equilibrium between sediment load and erosion.

Channel-forming – the stable, dominant water flow that has the greatest impact on shaping a stream channel.

Channel incision – see downcutting – a process that reduces the connectivity of the channel to its floodplain.

Channel morphology – the process and/or outcome by which a river channel is formed into a particular shape.

Depressional wetlands – confined to topographic basins or hollows that are either too small or too shallow to form lakes and reservoirs. The source of water can be precipitation and groundwater discharge.

Discharge – the volume of flow per unit time. In equations used by scientists and practitioners, it is generally represented as a variable by the letter "Q."

Downcutting – downward or vertical erosion of a stream due to water removing material from the stream bed. This results in steep embankments.

Drainage area – the total surface area of a watershed upstream from a point on the creek to which all water will flow.

Ecological site – an area of the landscape that has specific soil and physical characteristics that differ from other areas in terms of its potential to produce a distinctive kind and amount of vegetation and its ability to respond similarly to management actions and natural disturbances (NRCS definition).

Ecological site description (ESD) – reports developed by NRCS and other partners, intended to provide detailed information about a particular, distinct ecological site.

Ecological region, or ecoregion – an ecologically and geographically defined area that shares characteristic flora, fauna, and abiotic conditions (such as soil, landforms, and climate). Typically, ecoregions can be described hierarchically across multiple spatial scales. For example, an ecoregion may contain many land types and ecological sites, but is smaller than a bioregion, which in turn is smaller than an ecozone. The U.S. EPA, The Nature Conservancy, and NRCS each use slightly different ecoregional classification systems that serve slightly different management purposes.

Ecosystem – a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are linked together through nutrient cycles, climate, and energy flows.

Ecotone – a transition area between two biological or ecological communities, where two communities meet. The transition might be abrupt or gradual, if two communities overlap as they begin to blend or integrate.

Entrenchment – the vertical containment of a river that is quantitatively defined as the width of the floodprone area divided by the bankfull width.

Ephemeral – referring to a stream or wetland that contains water only briefly during and immediately following a rainfall or snowmelt event.

Evapotranspiration – the process in which water goes back into the air either through evaporation or transpiration. Evaporation is water drying from a surface as it returns to the air in vapor form. Transpiration is the water vapor that plants release from their leaves as they transpire or "breathe."

Facultative (FAC) plant species – plant species that are equally likely to occur in wetlands and non-wetlands. FAC species include trees such as green ash and cottonwood.

Facultative upland (FACU) plant species – plant species that usually occur in non-wetlands (estimated 67%–99% of the time) but that are occasionally found in wetlands (estimated 1%–33% of the time). FACU plants include common sunflower and big bluestem.

Facultative wetland (FACW) plant species – plant species that usually occur in wetlands (>2/3 of the time) but are also occasionally found in non-wetlands (up to 1/3 of the time). FACW plants include several willow species and prairie cordgrass.

Floodplain – a relatively flat area adjacent to a stream channel that tends to flood when flowing water exceeds the capacity of the channel.

Floodprone width – the area within the channel associated with the elevation that corresponds generally to about twice the maximum bankfull depth. It includes the floodplain of the river and often the low terrace of alluvial streams.

Floodprone elevation – typically defined as the elevation that is approximately twice the maximum depth elevation of water at bankfull stage.

Fluvial – from the Latin word fluvius for river. Refers to or pertains to streams, including fluvial processes (stream processes), fluvial landforms such as fluvial islands and bars, and fluvial biota living in and near stream channels. Common usage is often extended by geomorphologists to hydrologic processes on hillslopes.

Fluvial activity – the action of moving water in riparian ecosystems.

Fluvial processes – the physical interactions between flowing water and the landscape across which it moves; the work that water does as it moves across a landscape, including erosion, transportation, and deposition of sediment.

Fluvial surfaces – the floodplains and terraces associated with a stream.

Forb – an herbaceous (non-woody) flowering plant that is not a grass, rush, or sedge.

Geomorphic processes – any processes that influence channel form, primarily erosion and deposition.

Geomorphology – the study of the physical features of the surface of the earth and their relation to its geological structures.

Great Plains – the broad expanse of prairie, steppe, and grassland that lies across the central United States and western Canada.

Groundwater – water present beneath the land surface in soil pore spaces and in the fractures of rock formations.

Gully – a small hollow or channel worn in earth or unconsolidated material by running water, as on a hillside, and through which water runs only after a rain or the melting of ice or snow; it is larger than a rill and smaller than a stream channel.

Headcut – an identifiable point of active incision in the stream channel that creates a vertical or near-vertical face, or drop, on the bed of a stream channel. This headcut (or knickpoint) interrupts the channel gradient and, through processes of channel erosion, will continue to migrate or progressively move up-channel.

Headcutting – the active phase of a channel incision or headcut migrating upstream.

Headwater streams and wet meadows – a stream type describing systems that are typically located at the "top" of the drainage network where channels have just started to form, generally smaller streams with small drainage areas. Although in mountainous regions headwater streams typically have higher slopes, in western South Dakota, these streams typically have low to intermediate slope of < 1%. Headwater stream channels typically arise at the bottom of wet meadows where water flowing down and across gentle slopes begins to form a channel.

Hillslope – a landscape feature where the topography begins to rise up from a valley bottom, typically as a hillside or butte (or as mountains in areas further to the west).

Hydraulic – in the study of open channel fluid dynamics, the hydraulics are characterized by depth (a scalar quantity) and velocity (a vector quantity with direction and magnitude). Thus, hydraulics characterize the forces of moving water (the nature of flow; denoting, relating to, or operated by a liquid moving in a confined space under pressure).

Hydrogeomorphic / Hydrogeomorphology – relating to the interaction of hydrology (the action and work of water) with geology and land morphology (= shape).

Hydrologic Unit Code (HUC) – a watershed naming system that reflects the nested nature of watersheds and can be used to identify specific areas by their watershed (somewhat similar to a postal code).

Hydrology – the study of water on the Earth's surface and beneath the surface of the Earth, the occurrence and movement of water, the physical and chemical properties of water, and its relationship with the living (biotic) and physical (abiotic) components of the environment.

Incision – a process relating to abandonment of an active floodplain and the lowering of the local base level.

Intermittent – refers to a stream that flows only part of the year, or seasonally, during years of normal precipitation. Intermittent streams typically have a well-defined channel but contain water for only part of the year, typically during winter and spring when the aquatic bed is below the water table.

Knickpoint – part of a river or channel where there is a sharp change in channel slope, such as a headcut or incision point. Knickpoints reflect different conditions and processes on the river and are often initiated by a disturbance event.

Landform – a feature of the land surface that makes up the terrain; the arrangement of landforms in the landscape is known as topography.

Lentic – pertaining to an ecosystem that contains standing water, such as a lake, pond, or wetland.

Lotic – pertaining to an ecosystem that has flowing water, such as a river or stream.

Low-gradient prairie river – a stream type describing systems that are located low in the watershed, with wider valleys and sandy soil, drain an area of 100–1,000 square miles, and have a slope of less than 1%. Includes the lower reaches of mid-size prairie streams.

Major Land Resource Area (MLRA) – a classification developed by the USDA NRCS to identify geographically aggregated areas with similar land use, elevation, topography, climate, water resources, potential natural vegetation, and soils, designed to be useful for land and water resource planning and management.

Mesic – refers to areas with a balanced supply of moisture throughout the growing season.

Mid-size prairie stream – a stream type describing systems that are located in the middle of the watershed, below headwater streams and upstream of large, low-gradient rivers, drain an area of 10–100 square miles, and have a slope of less than 1%.

Northern Great Plains (NGP) – a region in the north-central United States that was historically open prairie or plains.

Natural Resources Conservation Service (NRCS) – formerly known as the Soil Conservation Service, NRCS is an agency of the U.S. Department of Agriculture (USDA) that supports farmers, ranchers, and land managers by providing technical assistance to conservation of land, water, soil, and other natural resources.

Obligate upland (UPL) plant species – plant species that almost always occur in non-wetlands under natural conditions. UPL plants include big sagebrush and blue grama.

Obligate wetland (OBL) plant species – plant species that almost always occur in wetlands under natural conditions and are strong indicators of wet soil conditions during the growing season. OBL plants include the common cattail and many species of bulrush.

Overbank zone – the area extending away from a stream channel, where sediment has been deposited on the floodplain of a river or stream by flood waters that have broken through or overtopped the banks, known as alluvial geological deposits.

Perennial – a stream or river that has constant flow throughout the year through parts of its streambed during years of normal rainfall.

Potential evapotranspiration – the amount of evaporation that would occur if sufficient water were available.

Proper Functioning Condition (PFC) – a qualitative method used by BLM and other natural resource managers for assessing the condition of riparian wetland areas. The PFC assessment provides a consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian wetland areas.

Recurrence interval – also called a return period or repeat interval. An average time or an estimated average time between events such as earthquakes, floods, landslides, or river discharge flows to occur.

Riparian Complex Ecological Sites (RCES) – refers to the description of ecological sites in riparian areas and complexes.

Riparian – the interface between land and a river or stream. Generally, the riparian zone is the floodplain portion of the valley bottom, which supports vegetation with higher water tolerances and/or needs.

Riparian area – within ecology, biota and other characteristics of alluvial bottomlands.

Riparian complex – the unique ecosystem associated the unique combination of biotic and abiotic factors producing distinct riparian complex and plant communities along a stream and its riparian area.

Riparian gallery forests – located along riparian areas that support tree growth. Usually the surrounding landscape is barren of trees due to the lack of water, supportive soil, etc.

Resilience – the capacity of a system to recover after stress or disturbance.

River Breaks – a local geographic term describing the rugged valleys, badlands, and bluffs of the upper Missouri River system (also “coulees”); these are typically the higher gradient stream types of the West River.

Riverine sites – locations along rivers or streams; riparian.

Riverscapes – composed of connected floodplain and channel habitats that together make up the valley bottom; indicates a holistic perspective of the broad-scale patterns and processes associated with fluvial systems.

Salinization – an accumulation of water-soluble salts in the soil that leads to structural decline in a system.

Seep – an area where water percolates slowly to the land surface (see also spring).

Semi-arid – refers to the climate of a region that receives precipitation below potential evapotranspiration, but not low enough to qualify as a desert.

Sinuosity – the degree to which a stream or river meanders back and forth across its floodplain, in an S-shaped pattern (curviness); the degree to which the stream deviates from a straight line.

Sodic, or sodicity – containing higher amounts of sodium attached to clay soil. The soil may be saturated below the surface, but dry and cracked on top.

Sodification – the accumulation of water-soluble sodiums in the soil.

Spring – a water resource that is formed when the side of a hill, a valley bottom, or other excavation intersects a flowing body of groundwater at or below the local water table. It is the result of an aquifer being filled to the point that the water overflows onto the land surface.

Steep woody draw – a stream type located high in a watershed, usually draining an area of less than 10 square miles, and with a steeper slope.

Streambank – the vertical portions (or sides) of a stream channel.

Stream bed – the lateral portion (or bottom) of a stream channel.

Stream channel – the zone where flowing water is contained when a stream is not flooding.

Stream order – a measure of the relative position of a stream in a watershed; the smallest tributaries are referred to as first-order streams.

Stream type – a way of classifying or grouping streams based on similarities and differences to facilitate discussion of ecological patterns, functions and processes, and management potential.

Stream Visual Assessment Protocol (SVAP) – a national protocol developed by the USDA NRCS designed to provide an initial evaluation of the overall condition of wadeable streams, their riparian zones, and their instream habitats.

Terrace – in riparian areas, landforms that are remnants of the former floodplain of a stream or river, formed by the downcutting of a river or stream, eventually to the point where they are no longer connected to the floodplain.

Toeslope – a landscape feature where a hillslope (the side of a hill or butte) becomes more gradual (less steep) as it transitions down to the valley bottom. This area is typically where sediment and erosion from hillslopes tend to slow down and accumulate.

Tributary inflow – a river or stream flowing into a larger river or lake.

Turbidity – a measure of the suspended material in a stream, related to suspended sediment levels. Although it is natural, high turbidity is often detrimental to aquatic life.

Uplands – areas and landforms that are elevated above the level where water flows or where flooding occurs; generally refers to areas that rarely, if ever, flood.

Valley – a low area between upland areas often with a stream channel running through it. In geology, a valley or dale is a depression that is longer than it is wide. The terms U-shaped and V-shaped are descriptive terms of geography to characterize the types and forms of valleys.

Valley bottom – a low area in the landscape generally located between hillsides or mountains, to which water will flow and collect, typically resulting in the formation of a stream.

Water table – an underground boundary between the soil surface and the area where groundwater saturates spaces between sediments and cracks in rocks.

Wet meadows – See “headwater streams and wet meadows”

Wetland – a distinct ecosystem that is flooded by water, either permanently or seasonally. Wetlands are distinguished from other land forms or water bodies by their characteristic aquatic vegetation, adapted to the unique hydric soil (i.e., soil frequently characterized by very wet or saturated conditions), where oxygen-free processes often prevail.

Watershed – a drainage basin area contributing water to a network of stream channels, a lake, or other topographic lows where water can collect. Formerly used to refer to drainage divide or a “water parting.” Synonyms: drainage basin, catchment.