TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE
NEW MEXICO April, 2008

BIOLOGY TECHNICAL NOTE NO. 50

VISUAL RIPARIAN ASSESSMENT TOOL

A visual riparian assessment tool has been developed for the use of Natural Resources Conservation Service field office staff in assessing riparian areas found on private lands. The tool should be used by a team consisting of 3-5 appraisers who represent varied natural resources backgrounds. The document has been written to provide a description and scoring template for hydrologic, soil and vegetative elements observed at the site. Each team member should examine the area and then discuss their observations with the other team members before a value is assigned for each scoring element. Upon completion of the assessment, the values should be totaled and a determination for the condition of the riparian area can be calculated. The tool was developed using three publications: 1) US Department of the Interior, Bureau of Land Management, TR 1737-9 Process for Assessing Proper Functioning Condition, 2) US Department of Agriculture, Natural Resources Conservation Service, Stream Visual Assessment Protocol, Fourth Draft, and 3) University of Montana, School of Forestry, Riparian and Wetland Research Program, Assessing Riparian Health, RWRP's Short Form. The score sheet varies from PFC in that instead of being a subjective rating system, numerical values are assigned giving the NRCS a defensible management tool. This is critical considering our work with private landowners, and the land management strategies of our agency. The final result of the score sheet will allow the field staff to assess whether or not the riparian area is functioning, in what capacity, and will also direct the assessor to the elements of concern. The rating will not necessarily provide the causes of the deficiencies, but should identify the areas which need to be addressed.

It is recommended that the field staff attend Proper Functioning Condition training, provided by the New Mexico Riparian Cadre. Information for the next training sessions can be obtained from Steve Lacy, Geomorphologist or Marcus Miller, Biologist, in the state office.

RIPARIAN ASSESSMENT
STANDARD SCORE SHEET

Date: _____ | _____ | _____

County: _____ Geographic Coordinates or UTM's: _____

Land Ownership Status: (☐Federal) (☐State) (☐Private) check the appropriate status

Name of Land Owner: _____

Identify the Tract or Field Where the Scoring Occurred: _____

Name of the Stream or River: _____

Names of Field Scoring Members: _____

Attach Map of Site and Identify the Different Reaches

Available Points	Points Scored	**HYDROLOGIC**
10		Hydrologic Alteration
10		Channel Condition
10		Bank Stability
5		Riparian Zone Width
5		Active or Stable Beaver Dams

Available Points	Points Scored	**SOILS - EROSION AND DEPOSITION FACTORS**
10		Soil Characteristics / Rooting Medium
10		Exposed or Bare Ground
10		Topographic Variance or Surface Expression on Floodplain
5		Streambank Rock Armoring
5		Point Bar Revegetation

Available Points	Points Scored	**VEGETATION FACTORS**
10		Diverse Age Class Distribution of Trees
10		Shrub Regeneration
10		Total Ground Cover of Grasses and Forbs
10		Percent of the Streambank with a Deep, Binding Root Mass
10		Total Area Occupied by Undesirable Herbaceous and Woody Species

Total Available Points	**Total Points Scored**

REMARKS:

SUMMARY DETERMINATION

FUNCTIONAL RATING:

A riparian assessment examines various elements to determine the condition of the riparian area. Various characteristics have been rated to establish whether the site has a minimal capacity to function in a natural state. The ratings established through the scoring process should provide direction for the land owner or land manager in the identification of individual elements of concern. By using a percentage of the total points scored, we have tried to eliminate any negative bias, which may arise from an element which may not be appropriate for a site. An example would be an Active or Stable Beaver Dams, which may not be an appropriate category for some sites. In this case, the 5 points would be deducted from the total available points, and would therefore not affect the final percentage scored.

To determine the percentage scored, divide the total points scored by the total available points and multiply by 100. This value, expressed in percent will provide the rating to be used in the assessment tool.

For a riparian area to be considered for possible effective treatment, a percentage of 40% and above must be reached. Some riparian areas are damaged to the point where effective treatment is not practical. Funds would be better spent on areas where positive benefits can be more readily achieved. When riparian areas are found in entrenched systems, especially in the southwest, the rating party should consider the effect of the steep gully walls as part of the riparian area. These unstable walls may contribute large amounts of sediment and areas lacking vegetation.

Place a check mark in the appropriate box for the assessed riparian area. Your assessment is based on the assessment percentage. 70% and above is considered as a functioning riparian area, 40-70% is functioning at some capacity, while <40% is non-functional.

Proper Functioning Riparian Area ☐
Functional --At Risk ☐
Nonfunctional ☐

Are Factors Contributing to Unacceptable Conditions Outside of the Land Owners Control?

Yes ☐ No ☐

If Yes, What are Those Factors?

☐Flow regulations	☐Mining Activities	☐Upstream channel conditions
☐Channelization	☐Road Encroachment	☐Oil field water discharge
☐Augmented flows	☐Other (specify) _____	

SCORING DESCRIPTIONS

Examine the entire reach of the riparian area to be evaluated. Separate the riparian area into reaches with distinct characteristics. Complete a score sheet for each reach. Prepare a site map and identify each reach on the map.

Each assessment element is rated with a value rating of either 1 to 10 or 1 to 5. Rate only those elements appropriate to the stream. Record the score that best fits the observations you make based on the narrative descriptions provided. For each assessment element, some background information is provided as well as a description of what to look for.

I. HYDROLOGIC FACTORS

HYDROLOGIC ALTERATION

Regular flooding every 1.5 - 2 years. Natural channel, no water withdrawals, no dikes or other structures limiting access to the flood plain. Channel is not incised.	Flooding occurs only once every 3 - 5 years; limited channel incision. Withdrawals do not affect available habitat for biota or transport capacity	Flooding only once every 6-10 years channel deeply incised. OR Withdrawals significantly affect available low flow habitat for biota or transport capacity.	No flooding; channel deeply incised or structures prevent access to flood plain or dam operations prevent flood flow. OR Withdrawals have caused severe loss of low flow habitat or transport capacity. OR Flooding occurs on a one-year rain event.
10	7	3	1

Explanation:

Flooding is important to maintaining the structure of the channel and maintaining the physical habitat for animals and plants. Flooding moves sediments, scouring fine sediments and moving gravels and boulders to create pools and riffles. The river channel and floodplain exist in dynamic equilibrium having evolved in the present climatic regime and geomorphic setting. The relationship of water and sediment are the basis for the dynamic equilibrium that maintains the form and function of the river channel. The energy of the river (water volume discharge and slope) should be in balance with the bedload (volume and particle size of the sediment). Any change in flow regime alters this balance. Decreases in flood flows decrease the river's ability to transport sediment and can result in excess sediment deposition, channel widening and shallowing, and ultimately, in braiding of the channel. Conversely, an increase in flood flows or the confinement of the river away from its floodplain increases the energy available to transport sediment and can result in bank and channel erosion.

The low flow or "baseflow" during the dry periods of summer or fall usually come from groundwater flowing into the stream through the stream banks and bottom. A decrease in the low flow rate may result in a smaller portion of the channel suitable for aquatic organisms. The withdrawal of water from streams for irrigation or industry and the placement of dams often change the normal low flow patterns. Baseflow can be affected by management and land use within the watershed -- less infiltration of precipitation reduces baseflow and increases the severity of high flow events. For example, urbanization increases runoff and can increase the frequency of flooding to every year or more often and also reduce low flows. Overgrazing and clearcutting can have similar, although typically less severe, effects.

What To Look For: Ask the landowner about the frequency of flooding and about summer low flow conditions. An active floodplain should be inundated every 1.5-2 years except during drought. Evidence of flooding includes high water marks, such as water lines, sediment deposits or stream debris. Look for these on the banks, on the bankside trees or rocks or on other structures such as road pilings or culverts. Low flow conditions can be noted by exposed stream beds; aquatic vegetation attached to the rocks or other structures may be exposed and the sides of the stream channel will often be exposed and lack rooted vegetation.

Excess sediment deposits and wide, shallow channels could indicate a loss of sediment transport capacity. The loss of transport capacity can result in a stream with three or more channels known as braiding. A channel bottom devoid of sediment could indicate increased flows and current or potential downcutting.

CHANNEL CONDITION

Natural channel; no structures, dikes. No evidence of downcutting or excessive lateral cutting of the stream.	Evidence of past channel degradation but with significant recovery of channel and banks. Any dikes or levies are set back to provide access to an adequate flood plain.	Degraded channel; <50% of the reach with rip-rap and/or channelization. Excess aggradation; braided channel. Dikes or levees restrict flood plain width.	Channel is actively downcutting or widening. >50% of the reach with rip rap and/or channelization. Dikes or levees prevent access to the floodplain.
10	7	3	1

Explanation:

Streams naturally meander through a valley bottom or topographic low area. Often, land usage's in the area results in changes in a meandering pattern and the flow of a stream. These changes in turn may affect the way a stream naturally does its work, such as the transport of sediment, development and maintenance of habitat for fish, aquatic insects and aquatic plants, and the transfer of oxygen into the water. Some of the modifications may not be noticeable because they are located upstream and may not be accessible or visible from where the assessment is made. Some modifications to stream channels have more impact on stream health than others. For example, channelization and dams affect a stream more than the presence of pilings or other supports for road crossings.

Active downcutting and excess lateral cutting are both serious impairments to stream function. Both conditions are indicative of an unstable stream channel. To address other problems with stream function prior to the stabilization of the channel is premature. For instance, restoration of riparian vegetation along an actively downcutting channel is doomed to failure. As the channel continues to downcut, the vegetation may be left high and dry.

What to Look For: Indicators of downcutting in the stream channel including knickpoints or headcuts in the stream bottom, exposure of cultural features such as pipelines that were initially buried under the stream. A lack of sediment deposits in the stream bottom is normally an indicator of incision. A low vertical scarp at the toe of the stream bank may indicate downcutting, especially if the scarp occurs on the inside of a meander. Another visual indicator of current or past downcutting is high stream banks. Excessive bank erosion is indicated by raw banks in areas of the stream where they are not normally found such as straight sections between meanders or on the inside of curves. Bank failures in cohesive soils are generally rotational slumps. In less cohesive soils, slab failures are more typical.

Signs of channelization or straightening of the stream; this may include an unnaturally straight section of the stream, unnaturally high berms or embankments on either side of the stream, or a lack of flow diversity (all the same depth). Drop structures (such as check dams), irrigation diversions, culverts, bridge abutments, and rip-rap are also indicators of changes to the stream channel.

BANK STABILITY

Banks stable; erosion or bank failure absent or minimal; little potential for future problems; <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-25% of banks in reach have areas of erosion.	Moderately unstable; 25-50% of banks in reach have areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 50-100% of banks have erosion scars.
10	7	3	1

Explanation:

This element is the existence of or the potential for detachment of soil from the upper and lower stream banks and its movement into the stream. Steep banks are more susceptible to erosion or collapse. Complete vegetative cover helps stabilize the banks; roots from trees, shrubs and even deep rooted grasses are important in providing support to the bank. Soil type found at the surface and at depth also determine bank stability. For example, banks with a thin soil cover over gravel or sand are more prone to collapse than are banks in which there is a deep, cohesive soil layer.

What to Look For: Signs of erosion including unvegetated stretches, exposed tree roots, or scalloped edges along the banks. Also see if there are overhanging areas along the banks, or leaning trees. Observe the stream bed from the top of the bank to the waterline to see what type of soil or subsurface material is visible. Evidence of disturbance, animal paths, or grazing areas which lead directly to the waters edge suggest conditions that may increase the chance of bank collapse. Estimate the size or area of the bank affected relative to the total bank area; this can be expressed as a percentage and compared to the descriptions.

RIPARIAN ZONE WIDTH

Extends at least one active channel width on each side or covers entire floodplain.	Extends 3/4 of the active channel width on each side or slightly less than the floodplain.	Extends 1/2 of the active channel width on each side or covers 1/2 of the floodplain.	Extends 1/3 of the active channel width or 1/3 of the floodplain.	Less than 1/3 of the active channel width or less than 1/3 of, the floodplain.
5	4	3	2	1

Explanation:

This element is the width of the natural vegetation zone from the edge of the upper streambank out into the floodplain (or effective riparian area). The riparian vegetation zone: 1) serves as a buffer zone for pollutants entering a stream from runoff; 2) controls erosion; 3) dissipates energy during flood events; 4) enhances the physical habitat of the stream; and 5) is a source of organic material for the stream. The type, timing, intensity and extent of activity in riparian zones is critical in determining the impact on these areas. Narrow riparian zones and/or riparian zones with roads, agricultural activities, residential or commercial structures, or significant areas of bare soils have reduced protection value for the stream.

What to Look For: Compare the width of the riparian zone to the active channel width. In steep V-shaped valleys there may not be enough room for a floodplain riparian zone to extend as far as one active channel width. In these cases, observe how much of the floodplain is covered by the riparian zone. Most riparian areas have some disturbance; however unless the disturbance is permanent or is intensive, the riparian area will usually recover. Look to see if there is only mature vegetation and few seedlings which would indicate a lack of regeneration. Healthy riparian zones on both sides of the stream are important for the health of the entire system. If one side is lacking the protective vegetative cover, the entire reach of the stream will be affected. In doing the assessment, be certain that you examine both sides of the stream and note which side of the stream has problems.

ACTIVE OR STABLE BEAVER DAMS

Beaver are present in the stream and actively building or maintaining dams.	Beaver may be present in the stream by evidence of old, non-maintained dams.	There is no evidence of beaver found in the stream or along the riparian area.
5	3	0

Explanation:

This element recognizes the importance of beaver in a riparian community. Beaver dams reduce water velocity and the streams power to erode. This leads to sediment deposition, elevated water tables, and increased herbaceous and woody vegetation. Beaver dams decrease or retard rapid spring runoff through water storage and improve water quality. Beaver are a desirable species for improved fish habitat and brood rearing areas for waterfowl. Beaver can only live along streams with a gradient of 3% or less.

What to Look For: Beaver are primarily nocturnal. They eat a variety of vegetation and prefer herbaceous and succulent plants. Woody plants are necessary for overwinter survival. Preferred trees and shrubs include aspen, willow, alder, and cottonwood.

Beavers will build dams from mud and available woody material. Dam building takes place from August to October. Maintenance is continual and generally occurs at night. Beaver dams block streams creating wet and marshy areas behind the dams. Beaver will cut trees in order to keep their ever-growing teeth worn down. Some damage to riparian vegetation will occur initially, however over time, the increased moisture will allow for regeneration and increased survival of woody species.

II. SOILS - EROSION AND DEPOSITION FACTORS

SOIL CHARACTERISTICS / ROOTING MEDIUM

>75% of the site has sufficient soil to hold water and act as a rooting medium.	>50% to 75% of the site has sufficient soil to hold water and act as a rooting medium.	>25% to 50% of the site has sufficient soil to hold water and act as a rooting medium.	25% or less of the site has sufficient soil to hold water and act as a rooting medium.
10	7	3	1

Explanation:

This element is to describe the two basic functions of soil (or substrate materials) in riparian areas. These are to act as a sponge to store water, and to support riparian vegetation by acting as a rooting medium. The kind and amount of soil materials present are among the most important factors in determining a site's potential. For example, soils comprised of clays, silts, and to some degree sands will be able to hold moisture, while other substrates, such as gravels, cobbles, and boulders will not. Likewise, an adequate rooting medium for plant growth also depends on substrate particle size. Substrates dominated by unfractured or unweathered bedrock, exposed boulders or large cobbles do not provide an adequate rooting medium for plant growth. Gravels and small cobbles up to 5" in diameter can provide adequate rooting medium when inter-mixed with soil materials.

What to Look For: It is important that the assessor can identify various types of soil. The three basic materials, clay, silt and sand will form differing soil types based on the percentages of each material present. A shovel or soil auger should be used to examine the soil at the site. Observations can be made in the stream channel to look for soil or material changes. A soil survey if available should also be consulted.

EXPOSED OR BARE GROUND

10% or less of the site with exposed soil surface.	10% to 20% of the site has exposed soil surface.	20% to 50% of the site has exposed soil surface.	> 50% of the site has exposed soil surface.
10	7	3	1

Explanation:

Exposed soil surfaces are those surfaces not protected from erosive forces by plants, litter or duff, downed woody materials or rock material larger than 2.5". Exposed soil can be caused by soil conditions, human caused activities, livestock, wildlife, or dense canopy cover. Exposed soil is an important factor in evaluating the health of riparian sites for several reasons:

1) exposed soil is vulnerable to erosion; 2) it may contribute to streambank deterioration; 3) it reflects reduced vegetation cover available for sediment entrapment; and 4) exposed soil provides sites for potential invasion by noxious weeds and other undesirable species. Generally, if the causes are human related or are accelerated by human land uses, this more strongly suggests a deteriorating situation.

What to Look For: Walk through the riparian area and observe areas of bare or exposed ground. If these areas are present, make an assessment of the cause if possible. Look to the area adjacent to the riparian area and observe any possible activities which may cause or contribute to exposed soil surfaces.

TOPOGRAPHIC VARIANCE OR SURFACE EXPRESSION ON FLOODPLAIN

Excellent topographic variability with thick vegetation in the overstory, shrub layer and grasses. Large woody debris or large rocks are present. No signs of concentrated flow of water is present.	Good topographic variability with good vegetative cover. Some rocks or woody debris is present, with little evidence of concentrated flow erosion.	Some topographic variability is present and there is some vegetative cover. Woody debris or rocks may be present. There may be some evidence of concentrated flow erosion.	Very little to no topographic variability is visible. Very little to no evidence of woody debris or rocks are present. Evidence or water erosion is clearly evident.
10	7	3	1

Explanation:

Once water leaves the stream channel and begins overland flow, the factors which determine whether sediment will be trapped include, 1) the overbank topography, 2) the amount and types of herbaceous and woody vegetation, 3) the amount of dead and down woody vegetation, and 4) any bedrock outcrops or boulders present. The greater the amount of surface variability and additional roughness factors will lead to an increased ability for sediment to be filtered and trapped from the overland flow. Trapped sediment helps to enrich the soil and add nutrients to the ecosystem. Topographic variance also allows for energy dissipation of the flood waters. This prevents scouring and erosion from damaging the overbank areas and increases infiltration.

What to Look For: For this element, observe the landform of the floodplain. The topography should be rough enough to prevent concentrated flow erosion, and have enough vegetation to absorb energy from overland flow. Look for logs, rocks, or other obstructions which can block the waters progress and encourage ponding or backwater formation.

STREAMBANK ROCK ARMORING

Large cobbles at least 5" in diameter make up over 50% of the streambank.	Cobbles at least 2.5" in diameter are found over 40% of the streambank.	Large gravels at least 1.25" in diameter are found over 25% of the steambank.	Very little gravel or cobbles are found along the streambanks.
5	3	1	0

Explanation:

The composition of streambank materials influences streambank susceptibility to erosion from water flow, trampling and other disturbances. In general, larger rocks provide better protection against disturbance than smaller rocks. Streambanks composed primarily of fine sands, silts and clays are more susceptible to degradation and require adequate vegetative protection to compensate for their smaller particle size.

What to Look For: Make visual estimations on the percentage or rock found along the streambank reach. Check the diameter of the cobbles or gravels with a tape if necessary or to calibrate your eye.

POINT BAR REVEGETATION

The point bars are well formed and maintained and have excellent growth and regeneration of preferred species.	The point bars are stable and have good amounts of vegetation and some regeneration of preferred species.	The point bars are not stable and have little evidence of growth or regeneration of preferred species.
5	3	1

Explanation:

Point bar revegetation is a visual indicator of a stream channel which is maintaining a balanced channel width. Lateral movement of a stream is a natural function and over time will increase the width of the floodplain. During lateral movement, streams remove bank material from the outside bend and deposit material on the point bar formed on the inside bend of the meander. As vegetation is established on the point bar, new roots help to stabilize the bar and the emergent vegetation acts as a sediment filter and a velocity drag on flood waters. Preferred woody species such as cottonwood and willow need moist, bare, mineral soil in order to have successful seed establishment. Their period of viability for the seeds is very short and conditions for germination must be met in order have successful colonization of these species.

What to Look For: See if the channel has a meander system with point bars present. Are the point bars formed so that they gently slope down into the stream without steps, nicks or channels formed across them? Observe the amount and type of emerging vegetation from the water line back to where the bar joins the bank.

III. VEGETATION FACTORS

DIVERSE AGE CLASS DISTRIBUTION OF TREES

>10% of the total canopy cover of trees is represented by seedlings and saplings.	>1% to 10% of the total canopy cover of trees is represented by seedlings and saplings.	1% or less of the total canopy cover of trees is represented by seedlings and saplings.	No tree seedlings or saplings are present.
10	7	3	1

Explanation:

One of the clearest indicators of a riparian tree habitats ecological stability and subsequent health is the presence of trees of all age classes (seedling, sapling, pole, mature, decadent, and dead) of the species. The presence of all age classes gives promise of the self-perpetuating stability inherent to all potential natural communities.

What to Look For: The ecological stability and health of a seral community type may be indicated by one of the following conditions: 1) in late seral communities, the presence of seedlings, saplings, and pole ages of climax tree species, and mature and older individuals of later seral species; and 2) for early seral communities, the presence of seedlings, saplings, and pole ages of seral species, and the absence of any climax tree species.

DIVERSE AGE CLASS DISTRIBUTION OF SHRUBS

>10% of the total canopy cover of the shrub layer is represented by seedlings or saplings.	>1% to 10% of the total canopy cover of the shrub layer is represented by seedlings or saplings.	1% or less of the total canopy cover of the shrub layer is represented by seedlings or saplings.	There are no shrub seedlings or saplings are present.
10	7	3	1

Explanation:

Another clear indicator of a riparian habitat's health is the presence of shrubs representing all age classes. The presence of all age classes of shrubs ensures the self-perpetuating stability inherent to all potential natural communities. Ecological stability and health of later seral community types is indicated by the presence of seedlings and saplings of climax shrub species and mature and older individuals of later seral species. Early seral communities are naturally dynamic in character. The presence of seedlings and saplings of seral species and the absence of any age classes of climax shrub species is their normal healthy status.

What to Look For: The ecological stability and health of a seral community type may be indicated by one of the following conditions: 1) in late seral communities the presence of seedlings, saplings, and mature shrubs of climax species, and mature and older individuals of later seral species; and 2) for early seral communities, the presence of seedlings, saplings, and mature shrubs of the seral species which should be represented.

TOTAL HERBACEOUS CANOPY COVER OF GRASSES AND FORBS

>75% of the soil surface is covered by plant growth.	50 – 75% of the soil surface is covered by plant growth.	40 - 60% of the soil surface is covered by plant growth.	< 40% of the soil surface is covered by plant growth.
10	7	3	1

Explanation:

Herbaceous canopy is instrumental in the ability of the system to trap sediments and to reduce the velocity of water moving over the floodplain or along the streambanks during flooding or overbank flow events. The vegetative canopy cover mitigates raindrop impact, other erosive forces, and the rate of evaporation.

What to Look For: Make a visual assessment of the percent of the ground which is covered by forbs, sedges, or grasses, or any other ground vegetation. Assign the appropriate rating for the rated area.

PERCENT OF THE STREAMBANK WITH A DEEP, BINDING ROOT MASS

> 75% of the streambank has evidence of a deep, binding root mass.	> 50% to 75% of the streambank has evidence of a deep, binding root mass.	> 25% to 50% of the streambank has evidence of a deep, binding root mass.	25% or less of the streambank has evidence of a deep, binding root mass.
10	7	3	1

Explanation:

The vegetation along streams stabilize the soil with a deep, binding root mass and filters sediments from overland flow. All tree and shrub species, and some sod forming grasses are considered to have deep, binding root masses. Among riparian wetland herbaceous species, the first rule is that annual plants lack deep, binding root masses. Perennial species, offer a wide range of root mass qualities. Some rhizomatous species such as the deep rooted sedges (Carex spp.) are excellent streambank stabilizers. In all situations, a greater density of woody species or vigorously rhizomatous herbaceous species indicates greater streambank stability.

What to Look For: Walk along the streambank and observe what types of species are present. Use a shovel or soil auger to penetrate the soil to see the root structure which has developed. Slumped areas on the streambanks can be looked at to see the degree and depth of root development.

TOTAL AREA OCCUPIED BY UNDESIRABLE HERBACEOUS AND WOODY SPECIES

1% or less of the area is covered by undesirable herbaceous species.	>1 - 3 of the area is covered by undesirable herbaceous species.	3 - 10 of the area is covered by undesirable herbaceous species.	>10 of the area is covered by undesirable herbaceous species.
10	7	3	1

Explanation:

Disturbance-induced herbaceous and woody plants (either native or introduced) may indicate a trend away from the preferred native plant communities, or a reduction in a site's ability to function as a healthy riparian wetland ecosystem. Most of these weedy, herbaceous and woody species provide less soil holding and sediment trapping capability and less desirable forage and wildlife values than native, later successional species.

What to Look For: Areas of disturbances are likely sites where undesirable herbaceous and woody species can become established. Be aware that some species, such as Russian Thistle, Salt Cedar, and Russian Olive are not native, even though they are widely distributed across the west.