STREAM ASSESSMENT

This assessment will help you identify potential concerns for the stream or streamside area on your property. The questions below are designed to draw your attention to items that you may be able to improve. This tool was adapted from the Oregon State University Extension *Stream* A*Syst*[1] publication.

STEP 1: Complete the Stream Assessment Worksheet

Instructions: Answer the questions below. For items to which you answer "Yes," read the following suggestions on how you can improve or protect your stream. A "Yes" answer does not necessarily mean there is a problem, but it can help you focus your efforts as you learn more about the particular situation and possible courses of action. You can find resources for more information or assistance in the contact list at the bottom of each section.

1. Are there ever any signs of pollution, such as soap bubbles, oil sheen, unusual odors, manure, sewage or trash in or along the stream?

❑ No ❑ Yes

If YES, consider the following management options:

- ❑ Use the *Home*A*Syst*[2] https://www.bookstore.ksre.ksu.edu/pubs/HOMEASST.pdf online assessment and/or the Nutrient Management worksheet in this packet to evaluate the situation.
- ❑ Have your septic system pumped and inspected. If problems with the septic system are found, make repairs.
- ❑ Work with the Kansas Department of Agriculture (KDA) to assess whether the problem requires notification of additional agencies.
- ❑ Remove trash with care. If potentially hazardous, contact the Kansas Department of Health and Environment (KDHE).
- ❑ Contacts: septic pumping company, Kansas State University Research and Extension (KSRE), local conservation district (CD), Natural Resources Conservation Service (NRCS), local watershed council, Kansas Department of Agriculture (KDA), Kansas Department of Health & Environment (KDHE).[3]
- ❑ Fence livestock from stream.

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[1] The Stream Condition Assessment worksheet was adapted, with permission, from the Oregon State University Extension publication, EM 8671, *Stream*A*Syst: A tool to help you examine conditions on your property* (Oregon State University, Corvallis, Oregon, June 2000, reprinted March 2001); The Citizen Science Stream Site Assessment published by K-State Extension is available online at: **https://www.bookstore.ksre.ksu.edu/pubs/PK13W9.pdf**

[2] *Home*A*Syst* is a homestead assessment system provided by the Kansas State University Extension developed to help evaluate possible risks to the groundwater and drinking water; available online at: **https://www.bookstore.ksre.ksu.edu/pubs/HOMEASST.pdf**

[3] An acronym reference sheet along with contact information is provided in the ***Resources*** section of the STEPS Workbook

Stream Assessment continued →

Stream Assessment *(cont.)*

2. Is the water green? Is there a green scum or thick, stringy, green clumps? Or, is there a heavy, dirty-brownish, slimy material coating underwater objects?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Determine whether nutrients from fertilizer or manure runoff are entering the stream from your property. If so, take corrective steps.
Preventative steps include:
- Ensuring the nutrients are being applied at the correct amount
- Planting herbaceous vegetation along the stream as a buffer
- Ensure that fertilizer is not being mixed near the stream

❑ Contact: CD, NRCS, watershed council, K-State Extension

3. Do water withdrawals or upstream dams ever result in extremely low water levels?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Improve the efficiency of water use on your property.

❑ Check into financial incentives for returning allocated water to the stream.

❑ Contact: CD, NRCS, watershed council, KAWS

4. Does the stream become muddy after storms and then take a long time to clear up again? Or is, the water in the stream muddier or cloudier when it leaves your property than when it enters?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Determine whether sediment is entering the stream from your property; look for runoff from unpaved roads, fields, severe bank erosion or other sources. When you find the problem, contact natural resource professionals to assist you.

❑ Provide natural, long-term streambank protection by planting vegetation that was historically on your site (grasses, trees, shrubs). Contact a natural resource specialist for assistance in determining this.

❑ Contact: CD, NRCS, watershed council, K-State Extension, FSA

Stream Assessment continued →

Stream Assessment *(cont.)*

5. Search for your stream online on the USGS Web site at: https://maps.waterdata.usgs.gov/mapper/index.html Does this or other data show that your stream is limited in any water quality measurements?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Learn more about limiting factors and the connection with activities on your land.

❑ Contact: CD, NRCS, K-State Extension

6. Are there culverts, dams or other artificial structures in your portion of the stream that could block fish passage?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Contact KSDWPT for more information. If the barrier prevents fish passage, modify it according to KSDWPT recommendations and with assistance from natural resource specialists. Be aware that some barriers may be owned by the county or other organizations, which will need to be contacted prior to any repair.

❑ Contact: KFS, KS Dept of Wildlife, Parks & Tourism (KDWPT), CD, NRCS, USFWS

7. Are bridges or in-stream culverts inadequate in size, and as a result unable to handle high, overbank flood flows?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Measure or estimate the culvert's length and width and contact an expert to help determine the culvert size needed for that site.

❑ Contact: Kansas Forestry Service, KDWPT, CD, NRCS, USFWS

8. Are any irrigation ditches, tile lines, drainage ditches or other artificial waterways connected to the stream?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Create grass buffer or tree/shrub corridor adjacent to the waterway that is at least 20 feet wide or more to remove contaminants before drainage water enters the stream.

❑ Screen pumps or irrigation diversions to prevent aquatic life from becoming trapped in the irrigation system. Screens must be designed according to KSDWPT standards. Also, irrigation ditches can be screened at the original point of diversion thereby removing the need for screens at multiple points (every landowner) along the ditch. Consider this watershed scale solution with your neighbors.

❑ Contact: CD, NRCS, KDWPT, KSRE, FSA

Stream Assessment continued →

Stream Assessment *(cont.)*

9. Are there any berms, dikes, or riprap along the stream or has the stream been straightened?

❑ No ❑ Yes

If YES, consider the following management options:

❑ With the help of a natural resource expert, determine how the structures or straightening may be affecting the condition of the stream. If a problem exists, modify as recommended by the expert.

❑ Contact: CD, NRCS, USFWS,KDWPT

10. Is the channel much wider and shallower than in the past? Are gravel, sand or silt bars noticeably building? Are there high, vertical banks in straight sections? Or, are there major changes to the stream after large flow events? For example, are pools filled in, riffle areas moved, streambanks greatly eroded, or has the whole channel moved?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Work with an expert to determine the causes and possible solutions. Permits are needed to do this work. Do not be tempted to fix this on your own.

❑ The stream might be out of balance with the amount of water and sediment it is carrying. Ask about possible changes or restoration efforts. Keep in mind that changes might be needed up and downstream, so coordinate your efforts with neighbors.

❑ Contact: watershed council, CD, NRCS, neighbors, USFWS, KDWPT

11. Are there areas of bare soil along the stream that will come into contact with water during high or overbank flows?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Establish an appropriate riparian planting and work with a natural resource specialist to determine whether artificial protection measures are needed while plants become established.

❑ Contact: CD, NRCS, KAWS, Farm Services Agency (FSA)

12. Have activities such as construction, grazing, landscaping or tilling within 35 feet of the top of the streambank disturbed permanent vegetation?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Identify streamside areas that need vegetation and commit to management changes in that area.

❑ If the area is grazed by livestock, develop and follow a prescribed grazing program, build off-stream watering facilities or water gaps, and establish fencing as necessary. Work with a natural resource specialist to assist you with these items.

❑ Contact: CD, NRCS, KAWS, K-State Extension, FSA

Stream Assessment continued →

Stream Assessment *(cont.)*

13. Does the vegetation along the stream have trouble surviving or reproducing?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Determine whether the water level has dropped or the channel has deepened. If so, roots might not be able to reach the water table.

❑ If the water level is not the problem, remove weeds or invasive plants that might be shading young trees, shrubs or competing with desired grasses. Protect young trees with tubes to prevent animals from eating them. Protect desired grasses with fences and prescribed grazing. Plant vegetation recommended for your site.

❑ Contact: CD, NRCS, K-State Extension, KAWS

14. Are there large areas with plants considered to be weeds or invasives, such as blackberry, Scotch broom, reed canarygrass, English ivy, thistle, cheatgrass or others?

❑ No ❑ Yes

If YES, consider the following management options:

❑ Complete the ***Weed Management Strategy worksheet*** in this packet to help you identify the most appropriate method for removing weeds. Contact your local County Weed Director for assistance in controlling invasive species along streams: **http://www.cwdak.org/**
Contact a natural resource specialist and find information on pesticide use along streams at:KDA or KDHE**.**

❑ Determine whether grazing management changes are needed.

❑ Contact: CD, NRCS, K-State Extension, KAWS, KDHE, KDA

15. Does bare soil or stands of grass or other herbacious vegetation dominate the area where trees or shrubs should naturally grow? Or is there bare soil where native grasses should naturally grow*?*

❑ No ❑ Yes

If YES, consider the following management options:

❑ Identify the reason(s) for lack of vegetation and address the causes.

❑ Restore vegetation to the streamside area. Make sure to plant a combination of trees, shrubs and/or grasses suited to your location and follow through to ensure their survival.

❑ Ask about available assistance.

❑ Contact: CD, NRCS, KAWS, FSA

STEP 2: Complete the Stream Enhancement Worksheet on the Following Page

Use the guide below to complete each section of the Stream Enhancement Worksheet.

Unit: Indicate each section of your property with a stream

Deadline: Indicate a deadline for completing related stream goals

Goal: List your goals for these identified units on your property

Action: Describe methods for achieving your goals. Included a list of the resources and assistance you may need to achieve your goals

Unit: *SW stream* **Deadline:** *January 2018*

Goal: *Improve fish habitat*

Action: *Enhance riparian area by planting vegetation*

Stream Enhancement Worksheet continued →

Unit: _____ **Deadline:** _____

Goal: _____

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Action: _____

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Unit: _____ **Deadline:** _____

Goal: _____

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Action: _____

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Unit: _____ **Deadline:** _____

Goal: _____

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Unit: _____ **Deadline:** _____

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Unit: _____ **Deadline:** _____

Goal: _____

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Action: _____

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Unit: _____ **Deadline:** _____

Goal: _____

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Action: _____

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TIP: 1 Management Practices to Improve Stream Health

- ✓ Consider protecting the stream corridor and associated wetlands from other land use activities.
- ✓ Maintain fences and manage grazing activities.
- ✓ Maintain a 15 foot wide or greater vegetated buffer next to the stream.
- ✓ Preserve healthy floodplains to slow and filter flood water.

TIP: 2 Enhancing Riparian Areas

- ✓ Delay mowing or haying grassy areas until late July when birds have finished nesting.
- ✓ Increase the buffer width around open water. In general, studies show that widths of 50 feet trap eroded soils, 100 feet filter pollutants, and 200-300 feet provide wildlife corridors.
- ✓ Avoid applying fertilizers, herbicides and pesticides in the buffer to keep pollutants out of the water.
- ✓ Fence livestock away from streambanks to reduce erosion and protect water quality.
- ✓ Provide offstream water sources for livestock.
- ✓ Remove weeds and replace them with native plants.

TIP: 3 Making Your Property Fish Friendly

To thrive, fish and other aquatic organisms require specific environmental conditions:

- ✓ Clean, cold water.
- ✓ Riparian vegetation to filter pollutants and sediment while shading and cooling the water.
- ✓ Rocks and riffles to churn and add oxygen to the water.
- ✓ Overhanging vegetation and large pieces of wood to hide under.
- ✓ Deep pools to provide colder water in the summer and unfrozen water in the winter.

TIPS continued →

Gather Additional Information and Assistance

- ✓ *Kansas Department of Agriculture (KDA)*
  https://agriculture.ks.gov/
- ✓ *Kansas Department of Wildlife, Parks and Tourism (KDWPT)*
  https://ksoutdoors.com/
- ✓ *Kansas Alliance for Wetlands and Streams (KAWS)*
  https://kaws.org/
- ✓ *Kansas State University Research and Extension Service (K-State Extension)*
  https://www.ksre.k-state.edu/
- ✓ *Natural Resources Conservation Service* (NRCS)
  www.ks.nrcs.usda.gov
- ✓ *Kansas Association of Conservation Districts (KACD)*
  https://kacdnet.org/districts/
- ✓ *Farm Service Agency*
  https://www.fsa.usda.gov/
- ✓ *US Fish and Wildlife Service*
  https://www.fws.gov/
- ✓ *Freshwater Trust*
  https://www.thefreshwatertrust.org/

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