

Stream Restoration Prioritization Criteria

The Stream Habitat Program is committed to enhancing and restoring the biology, hydrology, geomorphology, water quality, and connectivity of Minnesota's streams. The purpose of the Stream Restoration Prioritization Criteria is to identify projects that best address these components.

Bank stabilization projects will not be considered as these projects address only a localized problem and do not address the systemic problems that have caused the erosion issues. Concomitantly, projects that are targeted for one species or life stage, and those that are solely habitat structures are too narrow in their approach and will not be considered. Projects must be more than \$50,000 in cost to be eligible for this funding.

Lessard Sams Outdoor Heritage Council Funded projects must:

- Restore, protect, and/or enhance habitat for fish, game and wildlife
- Be on land permanently protected by a conservation easement, under public ownership or in public waters

1) Restoration project type, where restoration is defined as the act of relaxing human constraints and reestablishing form, function and natural processes

First choose proposed project type: channel restoration, dam removal, dam modification, nature-like fishway or other (please specify).

Second include a conceptual design and sketch: 1) for channel restorations please include a rough estimate of channel width, cross sectional area and length to be restored, and 2) for dams include the height and width of the structure and depth of downstream scour.

Premise: Higher priority projects relax human constraints to a greater degree. Projects must be aimed at addressing ecological problems to be considered.

Examples:

- Channel restoration that reestablish dimension, pattern and profile and allow meander migration over time (10)
- Dam removal with channel restoration allowing appropriate meander migration over time (10)
- Conversion of lowhead dams to emulate rapids. Score depends on the specifics of the site. For example, a site that needs constructed rapids to hold back deposited sediment would score higher than a site better suited for complete removal (8-6)
- Removal of dams with sediment laden reservoirs without channel restoration (6)
- Channel restoration that allows for meander reformation but does not establish natural geometry (4)
- Channel restoration that reestablishes channel geometry but doesn't allow for meander migration (4)
- Fish passage using nature-like fishways (4)

2) Resource Potential

Premise: Higher priority projects have a greater level of resource potential (e.g. There are multiple and diverse species benefits. There is greater potential for improvement, such as a pristine stream vs. a ditch.)

To better rank projects include any information you have to answer the following questions. (Information is helpful but not required.)

- Think about how the project impacts hydrology, biology, connectivity, water quality and geomorphology.
- Riparian buffers: creating or existing?
- Is the stream flashy? Are there accentuated floods and low flows?
- Are there wetlands adjacent to project area that will benefit from project?
- Is there a perpetual easement in place on the project ground?
- Will the project connect areas of aquatic refugia?
- Will the project connect diverse aquatic populations – list all aquatic species that will be benefited by the project?
- Estimated number of stream miles which will benefit directly/indirectly from this project?

Examples:

When establishing fish passage around a dam the resource potential depends on the quality of the habitat upstream of the dam. If it's homogenous or low quality, then the resource potential is low. Conversely, if the habitat is diverse and offers high quality habitat to multiple species, then the resource potential is high.

- High (10)
- Medium (5)
- Low: singular, product-level benefits (1)

3) Scale of Impact

Premise: Larger-scale projects are targeted.

To better rank projects include any information you have to answer the following questions.

- Is the stream perennial?
- What length of stream reach will be impacted and how (include both direct and indirect benefits)?
- If reconnecting stream segments, how many miles will be reconnected?

Examples:

The following scale of impact will evaluate projects other than channel restoration (including dam removal/modification and/or toe-wood projects).

- Basin (10)
- Watershed (8)
- Segment (6)
- Reach (4)
- Mesohabitat (a single riffle or pool) (2)

Channel restoration projects are scaled by stream size and length of restored or effected reach. Effected reach may extend beyond project length where grade correction and sediment transport are reestablished.

- Several miles of a large stream (10)
- A few hundred feet of a small stream (2)
- Channel Restoration scoring will be determine by length*width of affected area.
(10) 150,000 ft² + (4-5) 25,000 ft² +
(8-9) 75,000 ft² + (2-3) 10,000 ft² +
(6-7) 50,000 ft² + (0-1) 0-5,000 ft² +

4) Critical Habitat and Biodiversity

Premise: Higher priority projects will restore or reconnect critical habitat (5 pts) for aquatic or riparian species and projects that focus on improving biodiversity (5 pts). Rare, declining, federally listed and/or state listed species to the major watershed have a higher priority. To check for listed species in your watersheds please consult the following website: http://www.dnr.state.mn.us/rsg/filter_search.html

To better rank projects include any information you have to answer the following questions.

- Which species will be benefited (include listed and unlisted species)?
- Will the project enhance or connect significant ecological patches?

Choose one for each of the following:

Critical Habitat Examples:

- Critical habitat for rare, declining, federal or state listed species is reconnected (5)
- Critical habitat for rare, declining, federal or state listed species is restored (4)
- Rare, declining, federal or state listed species present and habitat reconnection/restoration is possible but uncertain (3)
- Habitat for unlisted species is reconnected (2)
- Habitat for unlisted species is restored (1)
- No species likely to be affected (0)

Biodiversity Examples:

- Project will improve biodiversity by expanding range of existing diverse populations. (5)
- Project will restore habitat necessary for improving biodiversity of all species (4)
- It is unclear how the project will impact biodiversity (3)
- Project is unlikely to improve biodiversity (1)

5) Impacts Regarding Invasive Species

Premise: Projects that reduce altered habitat preferred by invasive species will continue to be targeted. Projects that increase the ability of invasive species to successfully propagate in new areas will be avoided.

Examples (There are three separate scoring categories within this criteria. Please choose one score for each sub-criteria and list total score out of 10 points):

Range Expansion (3)

- Project doesn't pose an immediate risk of expanding a successfully reproducing invasive species population (e.g. project site is not a complete barrier or downstream barriers exist) (3)
- The risk of population expansion is unknown (2)
- There is immediate risk of population expansion (e.g. an established population of a migratory invasive species is immediately downstream of a complete barrier dam) (1)

Ecological Impacts (4)

- Project allows for ecological interactions that will strength the system and be detrimental to invasive species (4)
- A diverse population of native fish exists in project area (e.g. diverse native communities provide biotic resistance to invasion, have been shown to mitigate impacts from invasive fish and hinder success of invasion) (4)
- Project will allow for negative ecological impacts to native species (1)

Invasive Species Habitat (3)

- Project eliminates habitat that harbors invasive species. (e.g. reservoirs are documented to harbor and propagate invasive species) (3)
- Project will neither increase or decrease invasive species habitat (e.g. installation of a rock-arch-rapids on a lowhead dam that is already connected during flood flows) (2)
- Project allows for invasive species to access suitable habitat (1)

6) Community Support/Acceptance

Premise: Desired projects should be funded.

Examples: Community support or acceptance (ranking based on overall community, not individuals)

- High (5) – in order to receive the highest ranking, there must be a contribution by another source.
- (4) – Generally on board.
- (3) – Neither opposed or supporting
- (2) –Some opposition and concerns
- Low (1) – Strong opposition

7) Timing

Premise: Projects sometimes have a limited window of opportunity.

Examples: A project is within reach but is likely to become a missed opportunity if not done now or a precedent setting project that can act as a model for future projects.

- Now-or-never (5)
- Timing is semi-important (3)
- Project could be done any time (1)

8) Technical feasibility

Premise: Projects that have a myriad of technical and logistical problems should be avoided.

Examples:

- Conceptual design is established and tested (5)
- Conceptual design exists (4)
- No conceptual design but feasible (3)
- Technical problems exist (2)
- Major technical/ logistical problems (1)

9) Compatibility with other resource initiatives

Premise: Projects that are compatible with other resource initiatives should have higher priority.

Examples: Projects that can increase safety by removing a dangerous dam, restore passage for a canoe way or provide riparian habitat for wildlife.

- Very compatible (3)
- Partially compatible (2)
- Not very compatible (1)

10) Professional Judgment

Premise: It is recognized that some unique projects may not fit the categories listed above.

Projects can score higher by providing a detailed description as to why this project is unique and deserves a higher score. A maximum of 5 points may be added to the overall score.

Examples:

- The project may offer an opportunity to affect policy changes in your region by serving as a flagship project
- The project may offer a unique monitoring opportunity.
- Project can serve to educate the public about importance of our streams and restoration