OLDMAN INTEGRATED WATERSHED MANAGEMENT PLAN

HEADWATERS ACTION PLAN 2013-14

SHORT SUMMARY OF TARGETS, ACTIONS AND RECOMMENDATIONS

OWC OLDMAN WATERSHED COUNCIL

watershed management – watershed health

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Oldman Watershed Council
100, 5401 – 1st Avenue South
Lethbridge, Alberta, Canada
T1J 4V6
(403) 382-4239

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TARGETS

INDICATOR 1: Presence and abundance of fish, especially native populations

TARGET 1: Maintain current native and naturalized fish population integrity within the headwaters and explore opportunities to increase native fish populations in their current range.

TARGET 2: Restore native fish in selected streams* in the headwaters.

INDICATOR 2: Density of Linear Features

TARGET 1: In urban centres and major transportation corridors, no linear thresholds will be set; however, mitigation of the impact of linear features will be actively pursued.

TARGET 2: Maintain negligible and low linear features density where it currently exists; ensure no net increase of linear features in each sub-watershed.

TARGET 3: Decrease density of linear features where there is moderate to high risk rating[1] in the headwaters.

INDICATOR 3: Aquatic Invasive Species (Zebra mussels, quagga mussels and eurasian watermilfoil)

TARGET 1: Keep aquatic invasive species (zebra mussels, quagga mussels and eurasian watermilfoil) out of the Oldman watershed.

[1] Risk or pressure ratings are determined by the use of scientifically defensible thresholds in conservation biology. For more information, see the *Oldman Headwaters Indicators Project* (2014.1) at www.oldmanbasin.org.

* Selected streams=streams with sufficient or restored habitat value for native fish; streams where native fish have been extirpated from their historic range.

Photo: opposite: Craig Ellis; above: Jollin Charest

EXECUTIVE SUMMARY

The Oldman headwaters are the source of 90% of the water in the Oldman River. The headwaters area lies along the Rocky Mountains and foothills of southwest Alberta and into Montana, extending from Chain Lakes in the north to Glacier National Park in the south. The area is an iconic landscape, rich in beauty, wildlife, history and opportunity, and as such, attracts a myriad of uses. From communities and rural residential development to recreation, tourism, forestry, mining, agriculture and grazing, the headwaters provides important ecological, social and economic benefits to society.

In a region where water is precious, the health of the headwaters region is very important and requires focused commitment and effort to address increasing pressures and risk of further degradation of key headwaters values and functions. These include surface water quality and quantity, biodiversity, and the integrity of the headwaters terrestrial and aquatic landscape.

The Oldman Watershed Council (OWC) is committed to working with the greater watershed community to ensure we maintain and protect the headwaters and source waters in the Oldman River watershed. This is one of eight important goals of the 'Oldman Integrated Watershed Management Plan', and a key task under *Water For Life: Alberta's Strategy for Sustainability.*[2]

The Headwaters Action Plan 2013-14 (HAP) process was initiated in 2012 and has moved through several steps to develop a foundation for an iterative process of adaptive management[3] for headwaters health over time. Each element of the process was essential and has been shared and integrated into the process of developing the plan:

- scientific assessment of headwaters health,
- hearing what the community has to say about headwaters health and stewardship needs,
- engagement of key stakeholders who have capacity and commitment to work for headwaters health, and
- a review of other initiatives related to the headwaters to include their work into the process of the Headwaters Action Plan.

The Headwaters Action Plan 2013-14 is starting with three important indicators of headwaters health and has achieved agreement from participating stakeholders on targets (desired outcomes), recommendations to decision-makers, and stewardship action needed to begin to address issues and concerns related to each indicator. The first three indicators of headwaters health addressed are:

1. presence and abundance of fish - especially native populations (an indicator of biodiversity and watershed integrity),
2. density of linear features (cumulative disturbance of roads, seismic lines, pipelines, power-lines, railroads, cut-lines, off-road vehicle trails across each sub-watershed in the headwaters area), and
3. aquatic invasive species (zebra mussels; quagga mussels and eurasian watermilfoil[4] are all classified as major threats to aquatic ecosystem health that we need to *keep out* of Alberta).

The Headwaters Action Plan 2013-14 is the first iteration in a process of adaptive management committed to implementing actions that address key pressures and risks to headwaters health. A Headwaters Action Team, comprised of representatives from key sectors who participated in the development of this plan, will work on an implementation strategy of prioritized actions in 2014-15, and will monitor, evaluate and report on progress annually. The success of the plan depends on the collaborative strength and commitment of key stakeholders, the public and the OWC to make it happen.

We are starting here to work for headwaters health. Together we make a difference.

[2] *Water For Life: Alberta's Strategy for Sustainability.* www.waterforlife.alberta.ca

[3] Adaptive management involves a continuous cycle of planning, implementation, measuring progress and as new information becomes available, making adjustments that improve the plan over time.

[4] Zebra mussel (Dreissena polymorpha); quagga mussel (Dreissena rostriformis bugensis); Eurasian watermilfoil (Myriophyllum spicatum).

INDICATOR 1: Presence and abundance of fish, especially native populations

TARGET 1: Maintain current native and naturalized fish population integrity within the headwaters and explore opportunities to increase native fish populations in their current range.

ACTION PLAN

1. Complete a fine scale cumulative effects assessment of fish populations and habitat streams to:
   - determine where native and naturalized fish populations remain,
   - monitor population trends over time, and
   - determine what impacts are contributing to declining populations.

Ensure information of the assessment is clear and publicly accessible and offer opportunities for citizen science and stewardship action to support species persistence.

2. Develop an education and outreach program to address:
   1. importance of headwaters health and healthy trout streams
   2. impacts on headwaters integrity caused by proliferation and intensity of use of linear disturbance
   3. impacts of sedimentation in streams
   4. importance of native fish populations as an indicator of biodiversity/ watershed integrity
   5. encouragement of a stewardship ethic in motorized recreation users to safeguard headwaters health
   6. how people can be part of the solution to headwaters concerns.

The program should include:

a) *Adopt a Watershed Program* to engage people and groups to understand pressures and risks to their watershed; implement stewardship actions; and share information about their adopted watershed
b) encouraging users to adopt practices that reduce sediment in streams
c) a focus on youth and user groups.

3. Initiate a pilot restoration project in one watershed to increase existing native and naturalized trout populations and improve water quality.

4. Explore options for recreational user fees to fund enforcement, education and stewardship projects.

TARGET 2: Restore native fish in selected streams* in the headwaters.

ACTION PLAN

1. Develop a plan to restore native fish in key streams and sub-watersheds of their historic range. The plan will include:
   1. identification of the best options of where to restore native fish and fisheries habitat, with input from Government of Alberta scientists, the public and stakeholders
   2. determine what is needed to successfully restore habitat and repopulate native fish in top priority streams (e.g. land-use changes)
   3. set timeframe for implementation of the plan.

2. Add mountain whitefish to list of native fish species to be considered in management planning and stewardship actions to ensure population persistence in the headwaters.

3. Re-introduce beavers into the headwaters area.

*Selected streams=streams with sufficient or restored habitat value for native fish; streams where native fish have been extirpated from their historic range.

Photo: Jack Isaac

RECOMMENDATIONS TO DECISION MAKERS

TARGET 1

1. Adopt the linear features density targets determined in the Headwaters Action Plan (2013-14) into the South Saskatchewan Regional Plan. Linear features density targets are:
   1. no net increase in linear features density in each sub-watershed of the Oldman headwaters
   2. linear disturbance threshold of 0.15-0.2 km/km^2 in sub-watersheds where bull trout and westslope cutthroat trout currently exist
   3. maintain negligible-low linear feature risk rating in sub-watersheds where it currently exists
   4. lower density of linear features in high priority 4th order watersheds by one risk rating (e.g. high risk to moderate risk rating).[5]

2. Develop Access Management Plans for the headwaters that will:
   - focus on watershed health as the first priority
   - clearly designate acceptable uses
   - manage the intensity/volume of use
   - recommend setting a linear disturbance threshold of 0.15-0.2 km/km^2 in sub-watersheds where bull trout and westslope cutthroat trout exist, and restoring to this threshold where existing linear disturbance is higher
   - for user groups, address displaced activities and recommend alternative locations that are not in high impact/sensitive areas.

3. Increase enforcement of existing laws and policies related to recreational use in the headwaters.

4. Develop a Recreation Management Framework and Plans for the Eastern Slopes (including the Oldman headwaters). The plans would include (but not be limited by):
   - need to retain negligible-low linear feature risk rating in key sub-watersheds, including the South Castle and other headwaters sub-watersheds
   - development of motorized and non-motorized trail staging areas
   - monitor and control intensity of use
   - limit linear features to maintain and protect 'last of the best' watershed integrity values
   - refer to a current, successful access plan as an example for developing the recreation plan (e.g. Kananaskis Country)
   - meet recreation needs of Albertans.

[5] Oldman Headwaters Indicators Project (2013): Linear Feature Density risk ratings.

TARGET 2

1. The Government of Alberta will work diligently to ensure effective decision-making and regulatory action for watershed health.

2. Harmful channelization in watercourses is avoided; current harmful channelization is removed or remediated.

3. Complete a fine scale analysis of linear disturbance in the Upper Oldman and Carbondale sub-watersheds, including criteria to establish a restoration plan to reduce linear disturbance to a lower risk rating (e.g.: high to moderate, or moderate to low).[3]

4. Angling regulations are amended to prevent stress or harm to native fish. (Regulatory changes may include closure of key reaches or sub-watersheds to angling; control of invasive species harmful to native fish.)

5. Restore native fish in prioritized streams where:
   1. populations have been extirpated
   2. habitat values for native fish are sufficient and/or have been restored
   3. the threat of invasive species to native fish populations has been addressed.

Photo: Connie Simmons

INDICATOR 2: Density of Linear Features

TARGET 1: In urban centres and major transportation corridors, no linear thresholds will be set; however, mitigation of the impact of linear features will be actively pursued.

ACTION PLAN

1. OWC will continue to build a good working relationship with local municipalities to strive for consistency in land-use planning that maintains and protects source water and headwaters integrity.

2. Take measures to reduce impacts by addressing connectivity for aquatic and terrestrial biodiversity in the headwaters area, and encourage/support initiatives that improve connectivity across the Highway 3 corridor.

TARGET 2: Maintain negligible and low linear features density where it currently exists, and ensure no net increase of linear features in each sub-watershed. (Reference: Oldman Headwaters Indicators Project)

ACTION PLAN

1. Complete a Classification of Linear Features Project which will include:
   - inventory and classification of linear features in key sub-watersheds of priority concern
   - an analysis of reclamation priorities
   - linear features impacts on headwaters health
   - intensity of use monitoring program: collect data on the types and intensity of recreational use in the headwaters to better understand impacts on headwaters integrity; native fish; and water quality.

2. Engage in conversation with the public, stakeholders and the Government of Alberta to control access in South Castle watershed.

3. Maintain the current low-negligible risk rating for density of linear features in headwaters sub-watersheds with high integrity rating (e.g. South Castle sub-watershed).[6]

[6] Oldman Headwaters Indicators Project (2013): Watershed Integrity Index.

TARGET 3: Decrease density of linear features where there is moderate to high risk rating in headwaters sub-watersheds.

ACTION PLAN

Parameters for prioritization of where to start:
- in high value fish habitat
- starting at the continental divide and moving east
- through the selection of sites using target parameters such as risk to native fish; intensity of use; connectivity; best strategic value for education, feasibility and watershed values.

1. Lower the density of linear features in sub-watersheds at moderate to high risk ratings where high-value habitat for fish species at risk also exists (e.g. Lost Creek to Carbondale).

2. Develop and implement a plan to lower density of linear features in high priority 4th order watersheds:
   1. prioritize sub-watersheds with high ecological value (e.g. connectivity requirements and aquatic and terrestrial habitat needs for species at risk)
   2. map intersection of high ecological value sub-watersheds with density of linear features and intensity of use to determine high priority areas for reclamation
   3. select high priority sub-watershed(s) and reclaim linear features to achieve a lower risk rating (e.g. high to moderate risk).

3. Review South Saskatchewan Regional Plan for consistency with headwaters targets and provide feedback on gaps and inconsistencies.

4. Update the Minister (Environment and Sustainable Resource Development) on the Headwaters Action Plan.

RECOMMENDATIONS TO DECISION MAKERS

1. Develop policy to ensure there will be no net increase in density of linear features in the Oldman headwaters sub-watersheds.

2. Permits for construction of roads or other linear disturbance should include timeframe for active use and date for decommission and reclamation.

Photo: Craig Ellis; inset: Peter Dunbar

INDICATOR 3: Aquatic Invasive Species
(Zebra mussels, quagga mussels, eurasian watermilfoil)

TARGET 1: Keep these aquatic invasive species out of the Oldman watershed.

ACTION PLAN

1. Assist Alberta Environment and Sustainable Resource Development (ESRD) with the awareness and education program ("Stop Aquatic Hitchhikers!") for stakeholders and the public on how to prevent these aquatic invasive species from entering Alberta.

2. Assist with monitoring for these aquatic invasive species through a citizen-science monitoring program that is active at specified boat launch areas on headwaters lakes and reservoirs.

3. ESRD's response strategy if these aquatic invasive species are found in Alberta will be shared, and action taken where the OWC and others can add effectiveness and help with the strategy.

Our vision is a healthy, resilient watershed where people, wildlife and habitat thrive.

The Oldman Watershed Council (OWC) is a community-based not-for-profit organization committed to working on practical solutions to watershed issues that affect us all. We all depend on a healthy environment and clean, plentiful water as a foundation for social, cultural and economic sustainability. Everything is connected - so we must work together to solve problems, make trade-offs, plan for the future and ensure a high quality of life for all.

It takes time and effort to work collaboratively on solutions and actions, but the OWC is helping to build a new way of managing land and water impacts, where we all do our part, work together and think long term.

We believe a healthy watershed is worth the effort.

www.oldmanbasin.org

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