THE PURPOSE. THE PLAN.

P

PROTECTING OUR QUALITY OF LIFE

Photo credit: Scott Chamberlin

The Elk River Chain of Lakes watershed is an extremely important natural resource in Northern Michigan that warrants the utmost protection due to its ecological, recreational, and economic value. Despite continual efforts to protect the watershed, emerging issues such as land development pressures, invasive species, failing septic systems, and barriers to hydrologic connectivity threaten to impair these waters and degrade their ecological and economic potential.

THE PLAN AND IMPLEMENTATION STRATEGIES

The intent of the Elk River Chain of Lakes Watershed Management Plan is to assist area watershed groups, lake associations, local governments, volunteer groups, and many others in making sound decisions to help improve and protect water quality in their area. The plan summarizes existing water quality conditions while also outlining the major watershed pollutants and giving recommendations on how to reduce the impact and amount of pollution entering the system. Specific and tangible actions and recommendations were developed based on the prioritization of watershed pollutants and threats, as well as their sources and causes while also looking at the priority and critical areas in the watershed.

A COLLABORATIVE EFFORT

The Elk River Chain of Lakes Watershed Plan Implementation Team (ERCOL-WPIT) was formed in 2011 to implement activities pertaining to the Elk River Chain of Lakes in the original Grand Traverse Bay Watershed Protection Plan. The ERCOL-WPIT is comprised of lake associations, local governments, area nonprofits, and citizens interested in collaborative efforts to protect and preserve water quality throughout the entire watershed. With leadership from The Watershed Center and Tip of the Mitt Watershed Council, ERCOL-WPIT guided the development of the Elk River Chain of Lakes Watershed Management Plan.

EVALUATION AND OVERSIGHT

An effective evaluation strategy is critical to assessing the impact of implementing the Elk River Chain of Lakes Watershed Management Plan. The first aspect of the evaluation strategy measures how well the watershed plan is being implemented and whether project milestones are being met. The second aspect evaluates effectiveness in improving and maintaining water quality. The last assesses success in improving and protecting land resources and habitat.

TIMELINE

Implementation of the Elk River Chain of Lakes Watershed Management Plan is spread out over ten years and will be evaluated for its success in 2033. During the implementation and evaluation of the Elk River Chain of Lakes Watershed Management Plan, The Watershed Center, Tip of the Mitt Watershed Council, ERCOL-WPIT, and other partners will continue to strengthen existing relationships with various groups throughout the watershed. Funding sources will be pursued to implement recommendations made in the watershed plan.

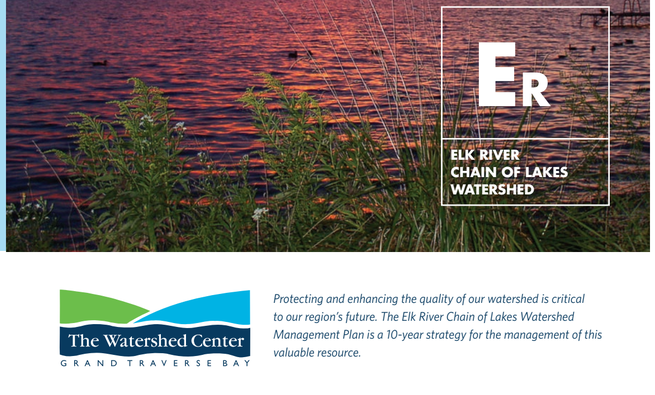

Photo credit: Kevin O'Meara

Photo credit: Gwen MacDonald

EVERYDAY WAYS YOU CAN PROTECT THE ELK RIVER CHAIN OF LAKES

- Properly operate and maintain your septic system, including regular pumping and inspections.
- Establish a buffer of native plants between your lawn and the water to absorb pollutants from runoff, prevent shoreline erosion, and provide fish and wildlife habitat.
- Only fertilize your lawn if tests show you need it.
- To help reduce *E. coli* bacteria, don't feed waterfowl and put pet waste in the trash immediately.
- Put all litter, including cigarette butts, in the trash.
- Clean and drain your boat after leaving every water body to prevent spreading invasive species.
- Do not dump motor oil, litter, or cigarettes in storm drains.
- Direct runoff from your property onto vegetated areas instead of onto your driveway or the street.
- Avoid using coal tar-based sealants to coat your driveway and parking areas and instead look for less toxic asphalt-based products for sealing surfaces.
- Check local government meeting agendas to stay up to date on decisions and policies that may affect your area.

Get involved by visiting gtbay.org for updates on the Elk River Chain of Lakes Watershed Management Plan.

This project has been funded by Michigan Department of Environment, Great Lakes, and Energy's Nonpoint Source Program using Watershed Council Support funds.

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

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WE PROTECT WHAT YOU LOVE

Photo credit: Steve Norman

ER

ELK RIVER CHAIN OF LAKES WATERSHED

The Watershed Center Grand Traverse Bay

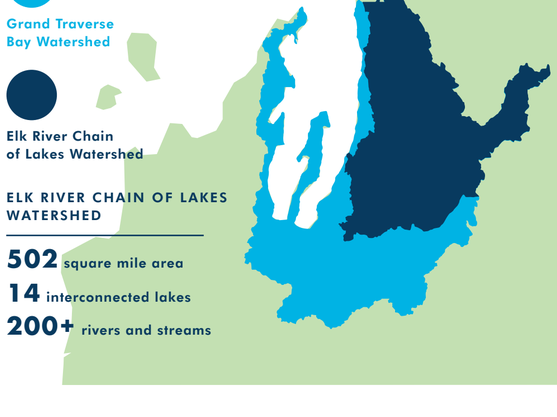
Protecting and enhancing the quality of our watershed is critical to our region's future. The Elk River Chain of Lakes Watershed Management Plan is a 10-year strategy for the management of this valuable resource.

WATERSHED CHARACTERISTICS

The Elk River Chain of Lakes watershed is located in northwest lower Michigan and is the largest sub-watershed in the Grand Traverse Bay watershed, covering over half of the total basin area. It has over 60 square miles of open water, 200 miles of riparian shoreline, and covers over 500 square miles of land.

Characterized by a generally rural population and large portions of natural land cover, the watershed possesses a wealth of natural resources that contribute to the health of local human and wildlife communities. The watershed provides 1.5 million acres of bountiful resources and habitat for the thousands of notable species that inhabit the rivers, lakes, streams, wetlands, forests, and grasslands within the watershed including white-tailed deer, black bear, coyotes, rainbow trout, beavers, morel mushrooms, trillium, spring beauty, and maidenhair ferns.

Almost half of the land cover in the watershed is forested (43%), with agriculture (16%) that is dominated by cultivated croplands coming next. Water and wetland areas together make up just over 20% of the watershed. Urban and developed areas make up a relatively small percentage of the land area (4.25%). The primary urban centers include the villages of Ellsworth, Central Lake, Bellaire, Mancelona, Elk Rapids, and Kalkaska.



Grand Traverse Bay Watershed

Elk River Chain of Lakes Watershed

ELK RIVER CHAIN OF LAKES WATERSHED

502 square mile area
14 interconnected lakes
200+ rivers and streams

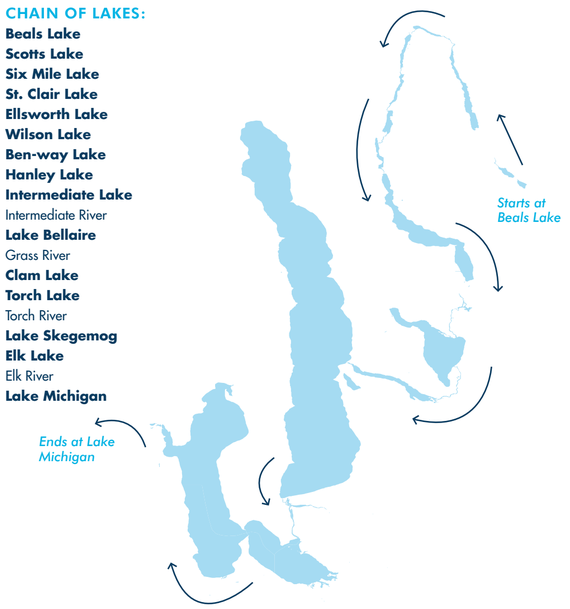
WATER, WATER, EVERYWHERE

The Elk River Chain of Lakes watershed is named for its unique "chain of lakes," a series of 14 interconnected lakes that flow to Grand Traverse Bay. The watershed also encompasses over 200 rivers and streams, 138 miles of which are designated Blue Ribbon trout streams. Starting at the headwaters near East Jordan, water flows 55 miles through the chain and drops 40 feet in elevation as it travels into Elk River and finally into Grand Traverse Bay, where it provides approximately 60% of the bay's tributary flow inputs.

The combined surface area of all 14 lakes in the chain is 34,420 acres. The largest lakes found within the watershed are Torch Lake, Elk Lake, and Skegemog Lake. With a maximum depth of 302 feet, Torch Lake is by far the deepest, followed by Elk Lake with a maximum depth of 195 feet.

CHAIN OF LAKES:

Beals Lake
Scotts Lake
Six Mile Lake
St. Clair Lake
Ellsworth Lake
Wilson Lake
Ben-way Lake
Hanley Lake
Intermediate Lake
Intermediate River
Lake Bellaire
Grass River
Clam Lake
Torch Lake
Torch River
Lake Skegemog
Elk Lake
Elk River
Lake Michigan



WATERSHED POLLUTANTS AND THREATS

Numerous watershed pollutants and threats in the Chain of Lakes watershed have been identified and ranked.

MAJOR POLLUTANTS

- Loss of habitat
- Nutrients
- Sediment
- Pesticides
- Flow alteration
- Other toxins (PCBs, endocrine disrupters, pharmaceuticals, etc.)
- Oils, salts, heavy metals
- Pathogens
- Thermal pollution

RANKED THREATS

1. Lake shoreline development/use
2. Stormwater
3. Invasive species
4. Road stream crossings
5. Failing septic systems
6. Riverbank development/use
7. Agricultural runoff
8. Climate change
9. Industrial waste/oil and gas

THE WATERSHED. THE VISION.

W

WATERSHED

Photo credit: Katherine Berst

GOALS AND OBJECTIVES

The ultimate purpose of the Elk River Chain of Lakes Watershed Management Plan is to have all lakes, rivers, and streams within the watershed support appropriate designated uses while maintaining their distinctive environmental characteristics and aquatic health. Six specific goals and objectives were developed to work in conjunction with those identified in the companion subwatershed plans for the Coastal Grand Traverse Bay and Boardman River watersheds.

1. **Protect the diversity of aquatic habitats.**
2. **Protect and improve water quality.**
3. **Enhance and maintain recreational opportunities that preserve water quality and support the local economy.**
4. **Promote sustainable land management practices that conserve and protect the natural resources, character, and heritage of the watershed.**
5. **Develop and maintain effective education and outreach efforts to support watershed protection.**
6. **Integrate climate-resilient practices and efforts throughout the watershed.**

Photo credit: Dale De Vries

R
RESTORATION

THE ELK RIVER
CHAIN OF LAKES WATERSHED

CRITICAL AREAS FOR RESTORATION

1 **Critical Area:** Eastport to Ellsworth and northern tip of watershed
Reasons for Prioritization: Agricultural and stormwater runoff, two streams impaired for *E. coli*

2 **Critical Area:** Scotts Lake to Central Lake - surface waters including lakes, connecting channels, and adjacent streams and tributaries
Reasons for Prioritization: Invasive species, severe road/stream crossings, lack of riparian buffer

3 **Critical Area:** Torch Lake - surface waters, riparian areas, and adjacent streams and tributaries
Reasons for Prioritization: Lake shoreline development pressure, septic impacts, lack of riparian buffer, severe road/stream crossings

4 **Critical Area:** Far east arm of watershed - agricultural area along highway US 131
Reasons for Prioritization: Agricultural runoff, groundwater recharge area

5 **Critical Area:** Cedar River south branch
Reasons for Prioritization: Severe road/stream crossings

6 **Critical Area:** Shanty, Cold, and Finch creeks and tributaries
Reasons for Prioritization: Shoreline development pressure, lack of riparian buffer, severe road/stream crossings, small dam locations

7 **Critical Area:** Area between Elk Lake and Torch Lake south to Kewadin
Reasons for Prioritization: Agricultural runoff, lake shoreline development pressure, lack of riparian buffer

8 **Critical Area:** Village of Elk Rapids
Reasons for Prioritization: Stormwater runoff

9 **Critical Area:** Rapid River - main branch, connecting tributaries, and riparian land area
Reasons for Prioritization: Severe road/stream crossings, Rugg Pond Dam

10 **Critical Area:** Williamsburg Creek and community of Williamsburg
Reasons for Prioritization: Severe road/stream crossings, small dam locations

CRITICAL AND PRIORITY AREAS

Several areas in the Chain of Lakes watershed were identified for protection or restoration activities. Recommendations were aimed at protecting land from future development or protecting water quality from future potential impairment. Locations for these actions were placed into either **Priority Areas** (for protective actions) or **Critical Areas** (for restoration actions).

PRIORITY AREAS FOR PROTECTION

Priority areas are those that are particularly vulnerable to degradation or development pressure and should be protected from future harm. One of the best strategies for protecting priority areas is through the purchase/donation of land or the establishment of conservation easements.

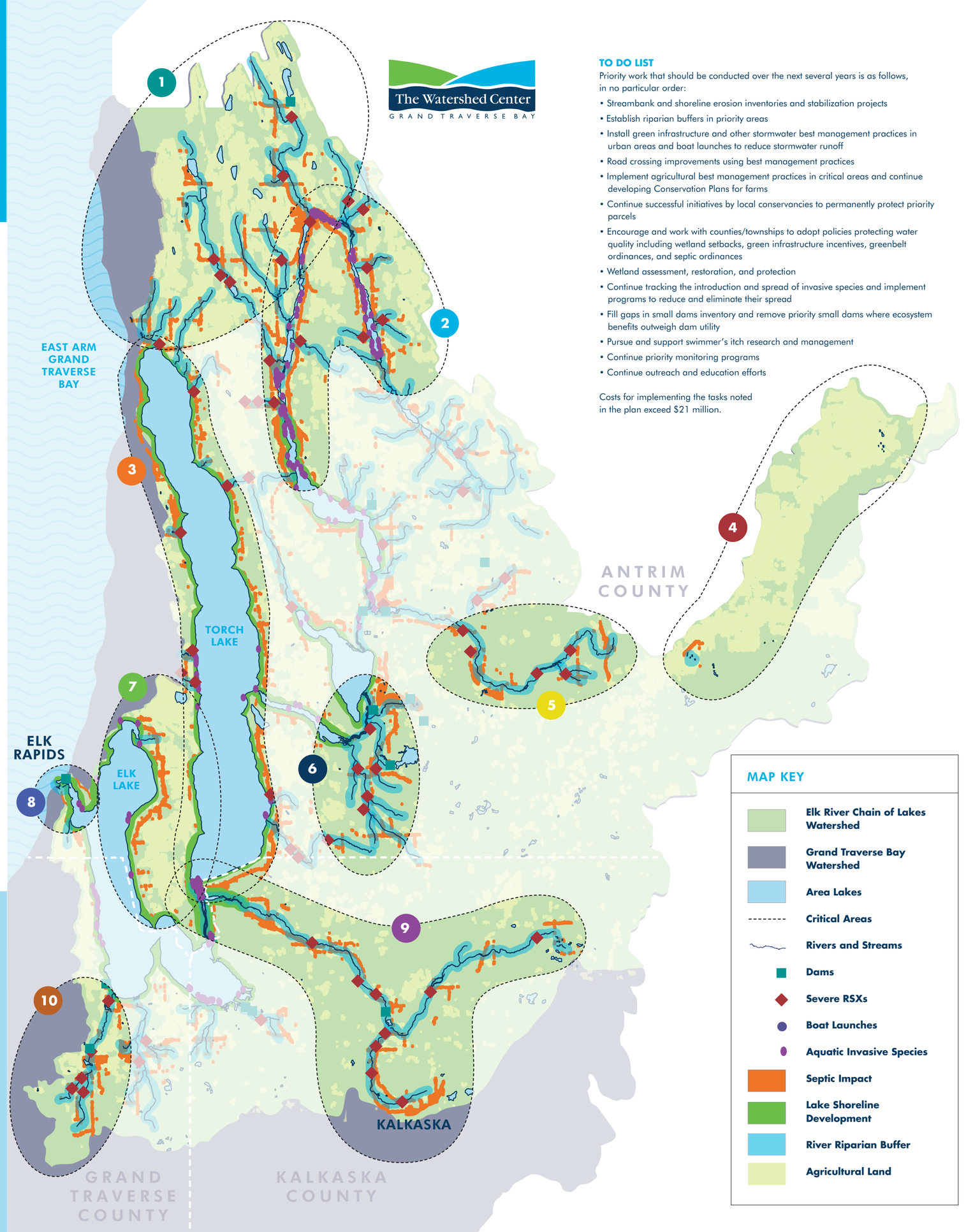
General: Larger blocks of contiguous lands, areas of high groundwater recharge, wetlands, lake and stream riparian areas, steep slopes, parcels adjacent to already protected land, existence of threatened/endangered species, parcels near urban areas, natural land cover types, drinking water protection areas, exceptional resources
Specific: The Grand Traverse Regional Land Conservancy has identified parcels of land as priorities for their land protection efforts

CRITICAL AREAS FOR RESTORATION

Critical areas are those in need of restoration that are contributing a significant amount of pollutants to the watershed (currently or in the future).

Critical areas were identified based on the concentrations of primary sources of nonpoint source pollution. These components include agriculture, aquatic invasive species, urban areas, shoreline development, hydrologic manipulation (dams), severe road/stream crossings, recreational boat launches, and septic systems.

Specific: 10 locations of concentrated critical area components outlined on the watershed map



TO DO LIST

Priority work that should be conducted over the next several years is as follows, in no particular order:

- Streambank and shoreline erosion inventories and stabilization projects
- Establish riparian buffers in priority areas
- Install green infrastructure and other stormwater best management practices in urban areas and boat launches to reduce stormwater runoff
- Road crossing improvements using best management practices
- Implement agricultural best management practices in critical areas and continue developing Conservation Plans for farms
- Continue successful initiatives by local conservancies to permanently protect priority parcels
- Encourage and work with counties/townships to adopt policies protecting water quality including wetland setbacks, green infrastructure incentives, greenbelt ordinances, and septic ordinances
- Wetland assessment, restoration, and protection
- Continue tracking the introduction and spread of invasive species and implement programs to reduce and eliminate their spread
- Fill gaps in small dams inventory and remove priority small dams where ecosystem benefits outweigh dam utility
- Pursue and support swimmer's itch research and management
- Continue priority monitoring programs
- Continue outreach and education efforts

Costs for implementing the tasks noted in the plan exceed $21 million.