

NATURE'S BENEFITS

IN THE ST. LOUIS RIVER WATERSHED

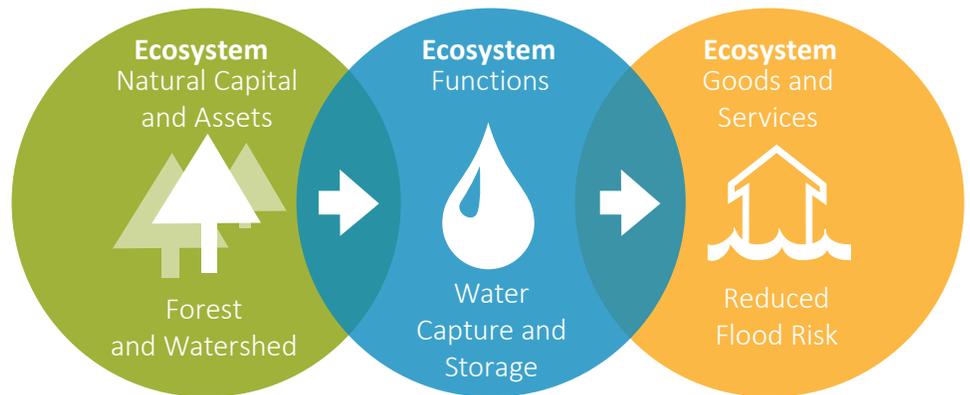
Miigiwewin Gitchi-gami-Ziibi: Gift of the Great Lake River

The report "Economic Valuation of the St. Louis River Watershed" by Earth Economics values the economic benefits of ecosystem services produced by the St. Louis River watershed:

- ▶ \$5 billion to \$14 billion annually
- ▶ \$294 billion to \$741 billion over seven generations (140 years)

Natural Capital Produces Ecosystem Services

Natural capital is the energy, minerals, plants, animals, and systems on Earth that produce a flow of goods and services. Natural capital (a forest or watershed) provides the economy with a diverse flow of goods and services much like built capital (a dam or bridge). Because these services come from nature, they are called ecosystem services.



- ▲ Natural capital provides goods and services which benefit people, like reducing the risk of flooding

The St. Louis River watershed in Northeastern Minnesota drains 2.4 million acres and empties into Lake Superior. It is a diverse area consisting of forest, wetland, grassland, and a unique freshwater estuary at the river's mouth. The natural capital of the area, ecosystems such as forests, perform critical functions, like capturing and storing rainwater, which provide goods and services which benefit people, like reducing the risk of flooding.



Visit www.eartheconomics.org to view the detailed report on the natural capital of the St. Louis River watershed. For more information, contact Earth Economics or Nancy Schuldt, Water Projects Coordinator at the Fond du Lac Environmental Program:

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ST. LOUIS RIVER WATERSHED

ECOSYSTEMS IN ACTION

\$1.2 billion
to
\$2.6 billion
per year



Flood Risk Reduction

Wetlands, grasslands, shrub, and forest all provide protection from flooding. These ecosystems absorb, slow, and store large amounts of rainwater and runoff during storms. June 2012 saw record rainfall in the watershed, and along with an already-rainy spring, resulted in a 500-year flooding event that caused more than \$100 million dollars in damage. Retaining natural, permeable land cover is important to reducing flood risk and damages caused by natural disasters.

\$7.8 million
to
\$512 million
per year



Habitat

Ecosystems provide habitat for plants and animals where they find shelter from predators, food, and appropriate living conditions for all their life stages. The St. Louis River watershed provides critical habitat to many species of plants and animals, such as wild rice, game animals, furbearers, waterfowl, bald eagles, walleye and sturgeon.

\$12.9 million
to
\$13.6 million
per year



Food

Natural ecosystems and managed lands both provide conditions for growing food. Crops, orchards, and pastures produce food for consumption, but so do natural areas like forests, lakes, rivers, and wetlands. Wild rice is a tremendously important food resource that is grown in the St. Louis River watershed, where individuals who hand-harvest wild rice typically gather more than 400 pounds each year.

\$293 million
to
\$1.8 billion
per year



Water Quality

Ecosystems can remove a variety of pollutants and in many cases can naturally maintain the water quality conditions needed for potable water. More than one quarter of the entire St. Louis River watershed is wetland. Preserving these and restoring degraded or lost wetlands can help improve water quality conditions within the watershed.



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WHY INVEST

The natural environment provides essential goods and services that impact the prosperity of people, communities, and the economy.

▼ Wetlands are excellent natural filtration systems



IN THE ST. LOUIS RIVER WATERSHED?

(Gitchi-gami-Ziibi: The Lake Superior River)

Not valuing assets leads to lost or degraded benefits

Many would argue the ecosystems within the watershed are priceless. But considering something as priceless generally has one of two possible outcomes: an extremely high value, or, as in traditional economic analyses of nature's benefits, a value of zero. The latter outcome has generally prevailed (and was often the default value) in decision-making, leading to drained wetlands, logged forests, and increased pollution from developed areas. Pricelessness may not be a practical value when it comes to decisions about development and natural resource extraction.

The degradation that comes with not investing in natural capital means the loss of essential services. From restrictions on fish consumption to water quality problems, eight beneficial use impairments exist in the St. Louis River Watershed—real, economic benefits that have been degraded or lost.

Alternatives to built capital solutions

Natural wetlands are an excellent filtration system that save people money. They are effective at removing a variety of contaminants, including nutrients, metals, organic matter, and sediment, from a variety of sources, including mine, agricultural, and urban runoff and municipal and industrial point sources. Not only do natural areas like wetlands provide this service for free, but they also require little or no maintenance and, if kept healthy, will not depreciate in value like built capital. If degraded, natural capital may not be able to produce this service and would need to be replaced with more costly built capital solutions, which often have lower resilience and shorter longevity.



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Ecosystem service values can be measured just as the value of peoples' work can be measured in economic measures such as a paycheck. The report, *The Value of Nature's Benefits in the St. Louis River Watershed*, is about the valuable economic work that the natural systems of the St. Louis River watershed provides to people.

► A 500-year flood event in parts of the St. Louis River occurred in 2012, causing millions of dollars in damages.

Sustainability and addition into policies

Identifying and valuing natural capital allows for their value to more adequately inform sustainable land-use planning policy. Ecosystem service valuation can provide governments, businesses, and private landowners with a way to calculate the rate of return on conservation and restoration investments. Strengthening benefit/cost analysis with ecosystem service values will shift investment of public and private funds toward more productive and sustainable projects.

Economic prosperity

The conservation and restoration of the St. Louis River watershed should be considered as a key investment for the future economy. The watershed produces renewable economically valuable goods like timber, fish, and wild rice that provide important inputs into the region's economy.

Diminish risks

Many natural areas provide water storage and flood risk reduction benefits. Built structures in the floodplain of the St. Louis River depend on natural vegetation upstream to absorb large rainfall events, store water, and reduce water velocity, all factors which contribute to the reduction of flood risk. When the flood protection services of a watershed are lost, direct economic damages include job losses, infrastructure repairs, reconstruction costs, restoration costs, property damage, and human casualties.



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