GREEN INFRASTRUCTURE VISION

ECOSYSTEM SERVICE VALUATION

Chicago Wilderness

THE CONSERVATION FUND

Chicago Metropolitan Agency for Planning

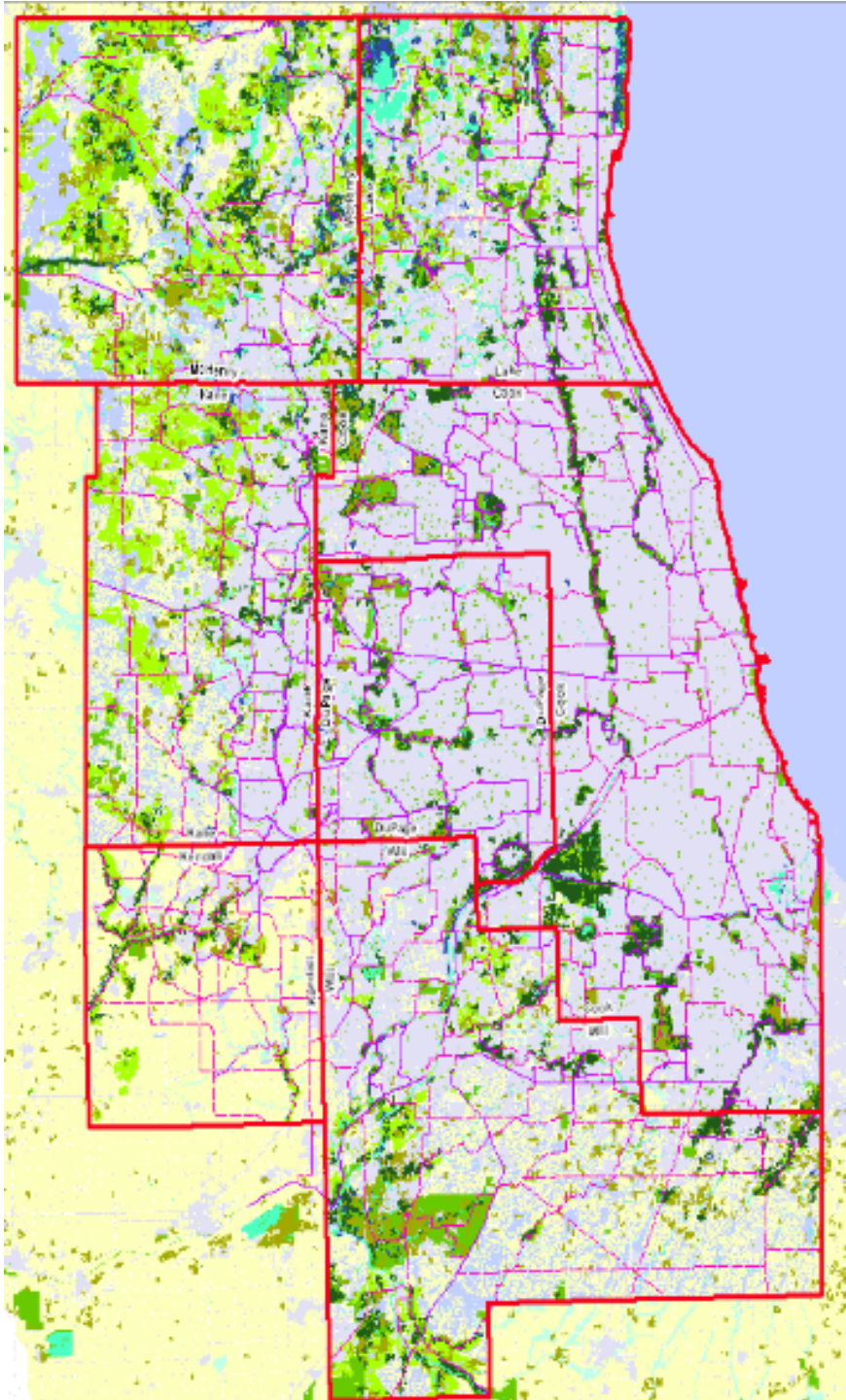
GIV AND GO TO 2040

- GO TO 2040 includes goals of conservation, open space access, and regional ecological connectivity
    - Conserve 400,000 acres of open space
    - Achieve 10 acres of open space per 1,000 people for 70% of the region
    - Establish 1,348 miles of greenways
- Achieving these targets requires a better understanding of the condition and geographic distribution of our natural resources

WHAT IS THE GIV?

The GIV is a spatial data tool developed through a collaborative consensus-based process of Chicago Wilderness that:

- Identifies conservation and restoration priority areas
- Characterizes green infrastructure resources
  - Landscape types (forests, prairies, wetlands, waterbodies)
  - Unfragmented ecosystems
  - Connective corridors



ECOSYSTEM SERVICE STUDY GOALS

- Quantify contributions of green infrastructure to regional economy and quality of life
- Understand economic value of different ecosystem types
- Inform planning, conservation, and restoration decisions for diverse communities and partners

WHAT ARE ECOSYSTEM SERVICES?

Products	Paper, crops, fish and game, drinking water
Regulating Services	Flood protection, pest control, filtering water
Supporting	Oxygen production, soil formation, habitat provision
Cultural experiences	Spiritual, educational, scientific, or aesthetic value

Adapted from 2010 Ecological Footprint Atlas

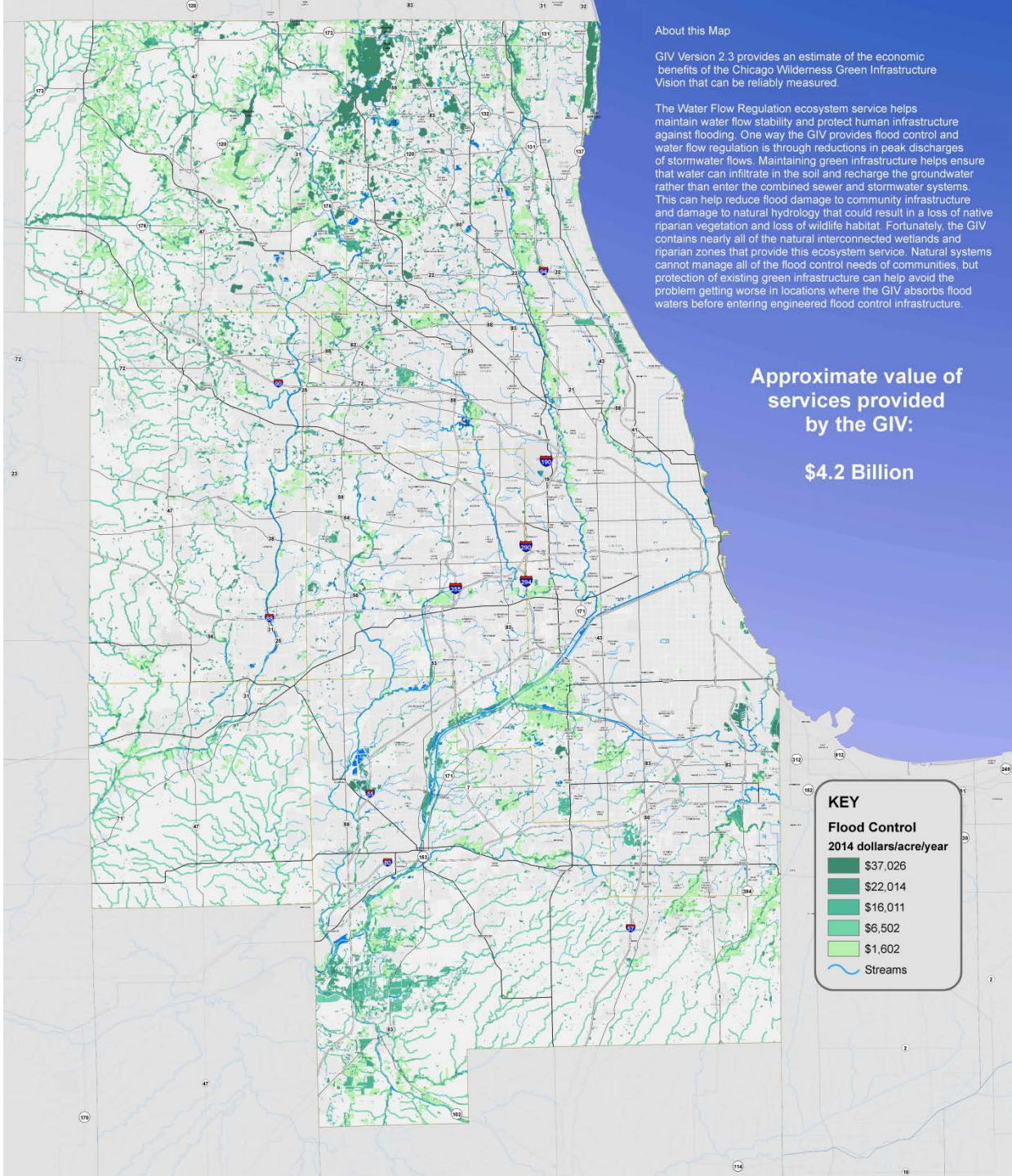
VALUE OF FLOOD CONTROL

Green infrastructure provides **$4.2 billion per year** of flood control to the region.

Most effective ecosystems: **Wetlands & streams**

An acre of wetlands can typically store 1-1.5 million gallons of floodwater.

Not building in floodplains could save an average $900/acre/year in flood damages.

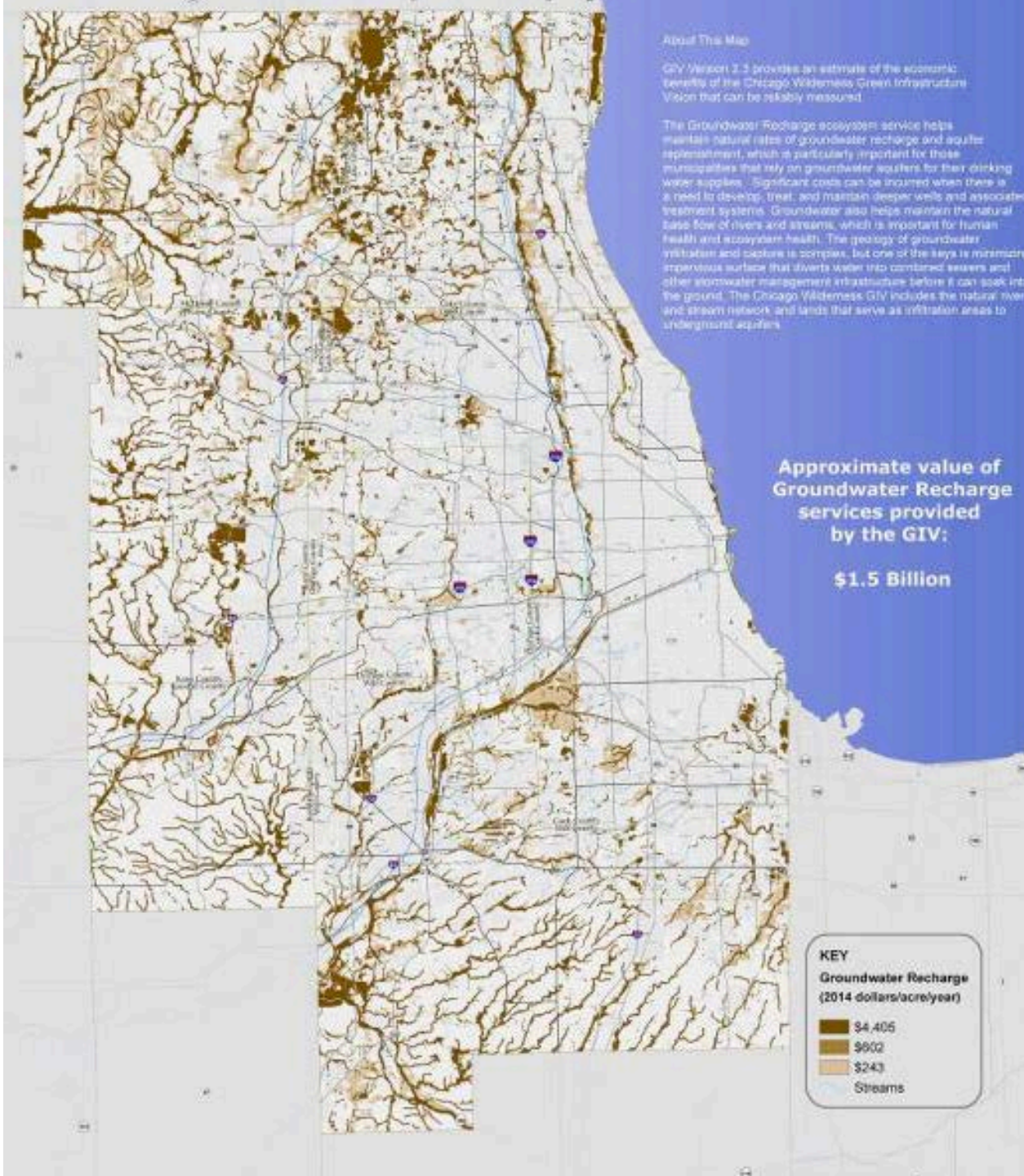


VALUE OF GROUNDWATER RECHARGE

Green infrastructure provides
$1.5 billion per year
of groundwater recharge to the region.

Most effective ecosystems:
Natural floodplain

Forested wetlands overlying permeable soil can release up to 100,000 gallons per acre per day of groundwater.

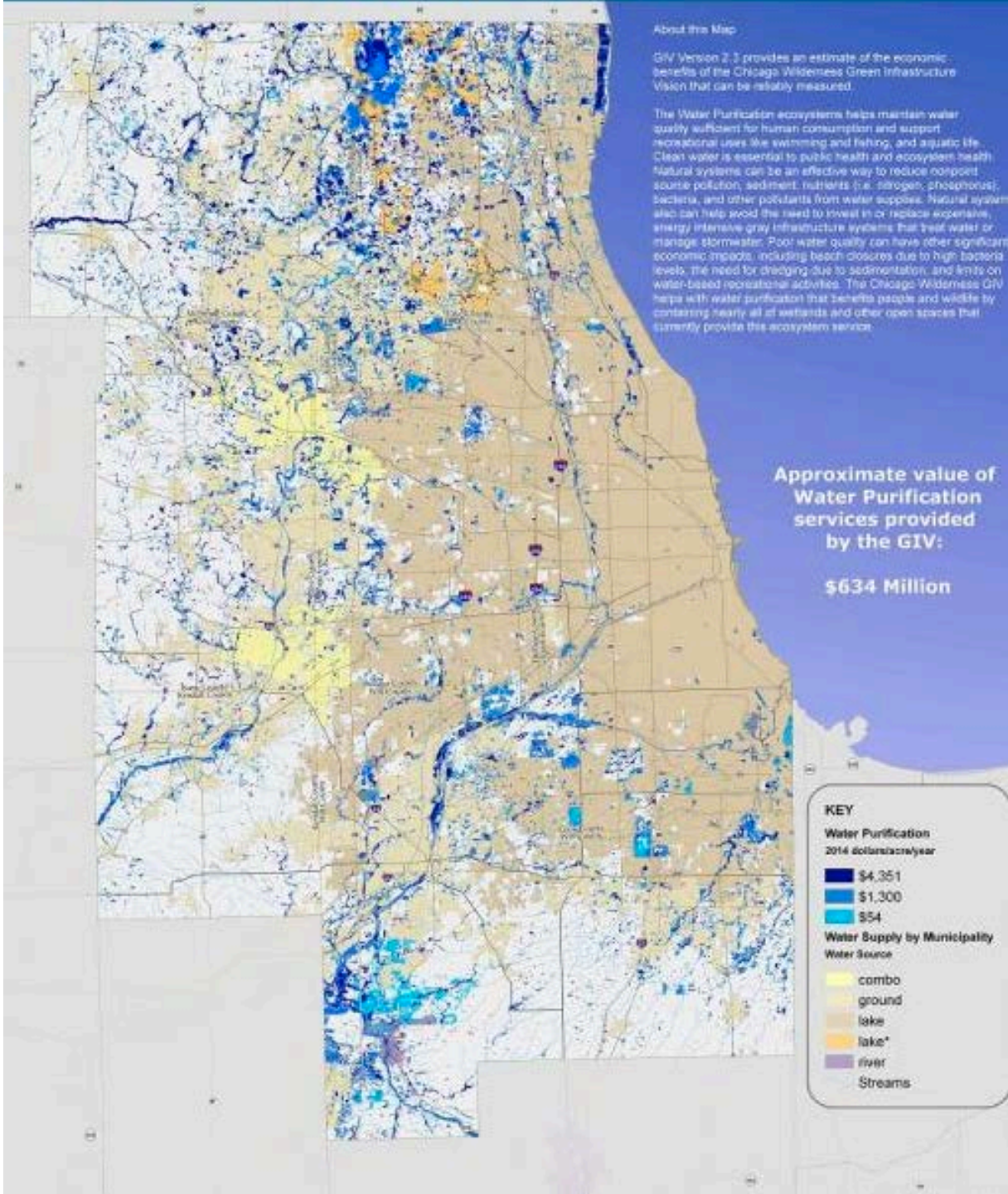


VALUE OF WATER PURIFICATION

Green infrastructure provides **$634 million per year** of water purification to the region.

Most effective ecosystems: **Wetlands**

The cost of restoring and operating wetlands to remove nitrogen and phosphorus can be 50-70% less than the cost of constructing and operating engineered wastewater treatment systems.

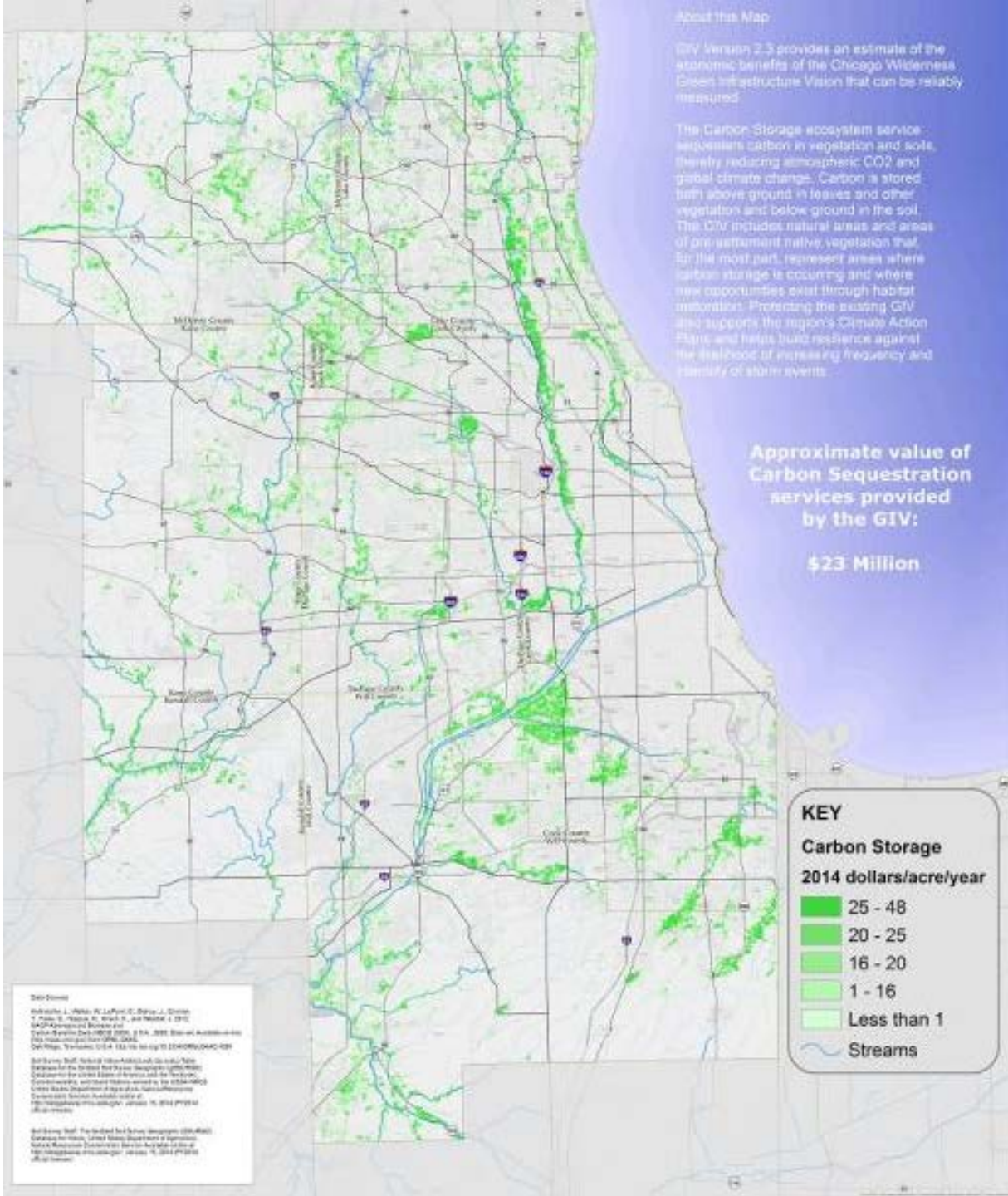


VALUE OF CARBON STORAGE

Green infrastructure provides **$23 million per year** of carbon storage to the region.

Most effective ecosystems: **Forests/woodlands**

A large tree can remove over 1,000 pounds per year of CO_2 from the atmosphere.

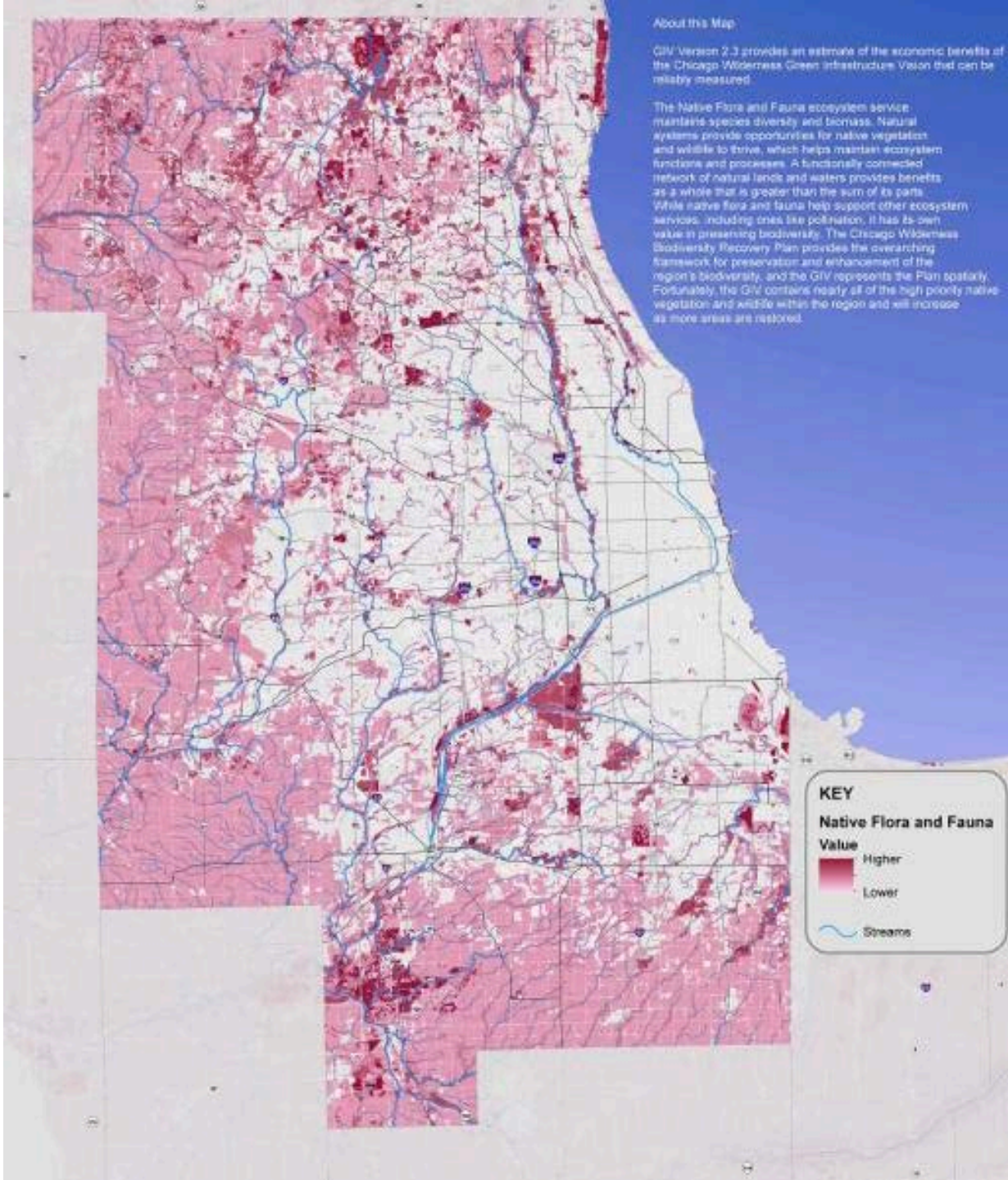


VALUE OF NATIVE FLORA AND FAUNA

Measured in relative value due to limited data.

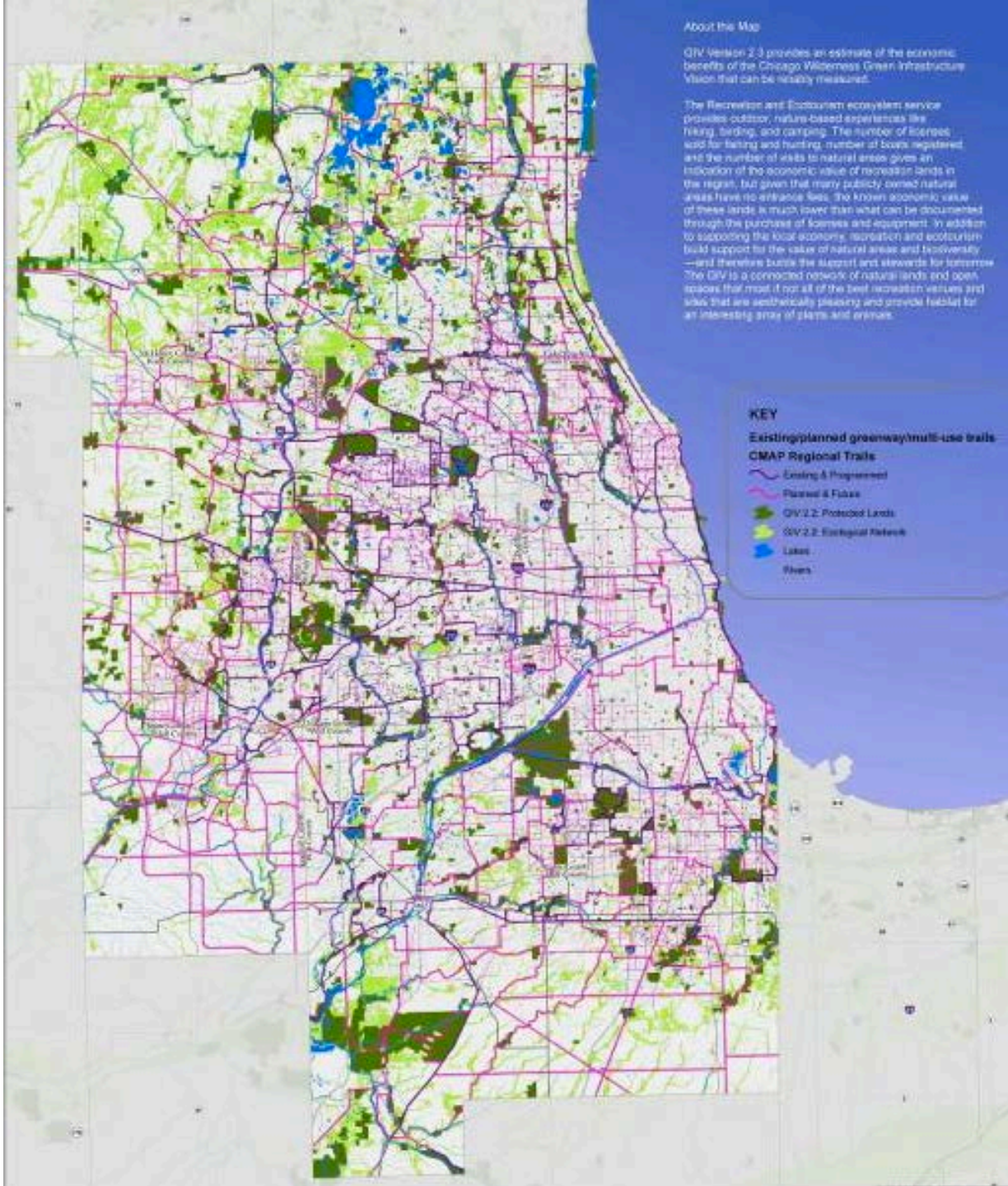
Most effective ecosystems: Protected habitats such as those in the Illinois National Areas Inventory

Diverse ecosystems are more likely to contain species tolerant to disturbances like flooding, drought, or pests.



VALUE OF RECREATION AND ECOTOURISM

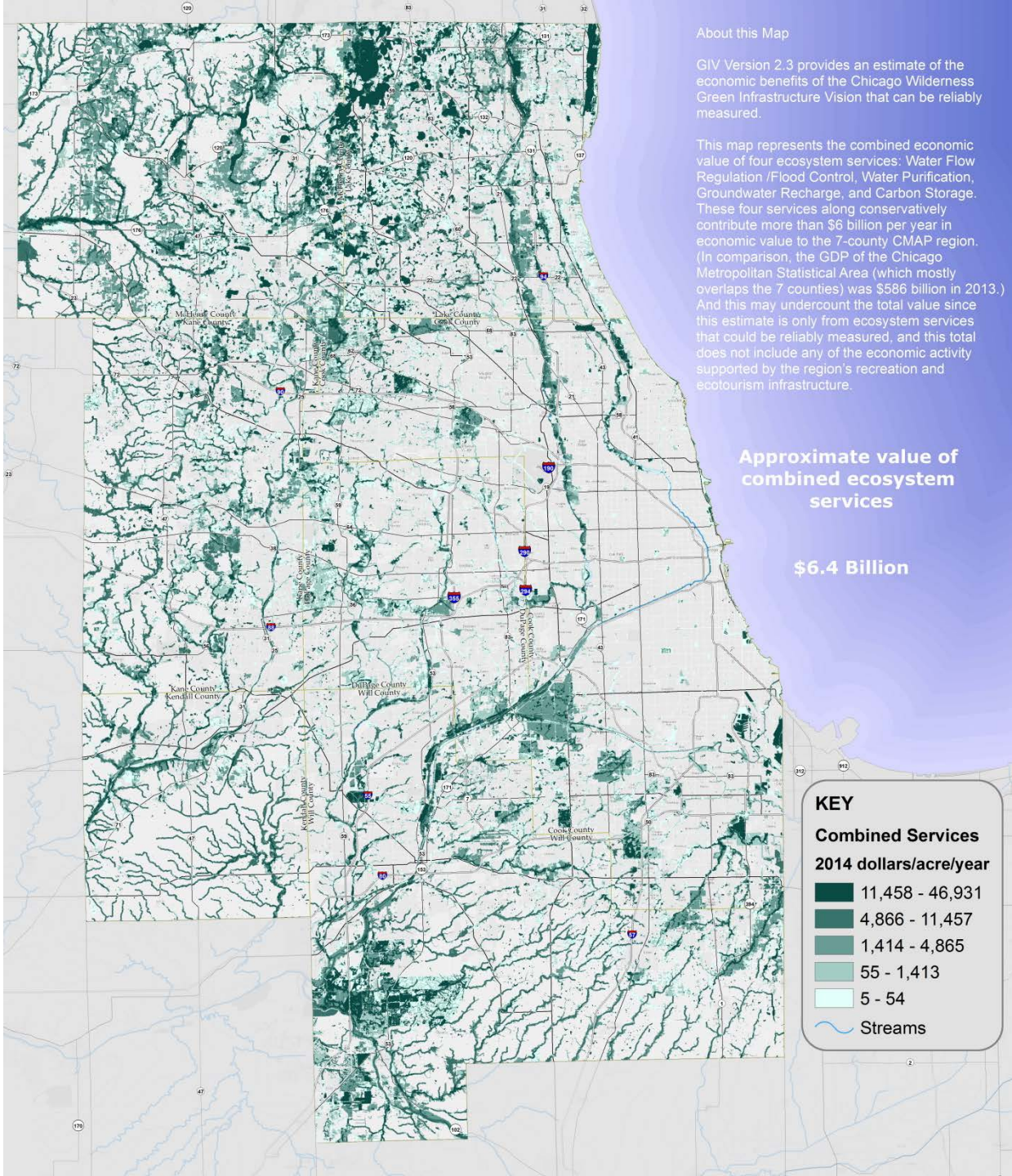
In 2011, Illinois residents and non-residents spent **$3.8 billion per year** on wildlife-associated recreation. They also spent 13.3 million days and $973 million fishing in Illinois (excluding Lake Michigan).



VALUE OF TOTAL ECOSYSTEM SERVICES STUDIED

Natural ecosystems contribute well over **$6.4 billion per year** of economic value to the 7-county CMAP region—although this is an underestimate.

2013 real GRP of the Chicago MSA: $551 billion.



NEXT STEPS

- Incorporate ecosystem service valuation data into local planning projects and land use decisions
- Evaluate potential impact of capital projects and/or inform compensatory wetland mitigation banking
- Inform strategic conservation and restoration investments
- Inform conservation policies for the next long-range regional plan

ECOSYSTEM SERVICE VALUATION STUDY
PRODUCTS AND DATA

- CMAP Data Sharing Hub: https://datahub.cmap.illinois.gov/group/green-infrastructure-vision

- Final Report

- Appendices
  - Literature Review
  - Project Steering Committee List
  - Public Workshop Materials
  - GIS data user's guide

- GIS Data
  - Layer files with valuation grid
  - Core layers