

# Valuing Ecosystem Services to Make Better Water Decisions

Kate A Brauman, Ph.D.  
Global Water Initiative

INSTITUTE ON THE  
ENVIRONMENT

UNIVERSITY OF MINNESOTA  
**Driven to Discover<sup>SM</sup>**



AMERICA

AMERICA  
67832135 C  
WASHINGTON, D.C.

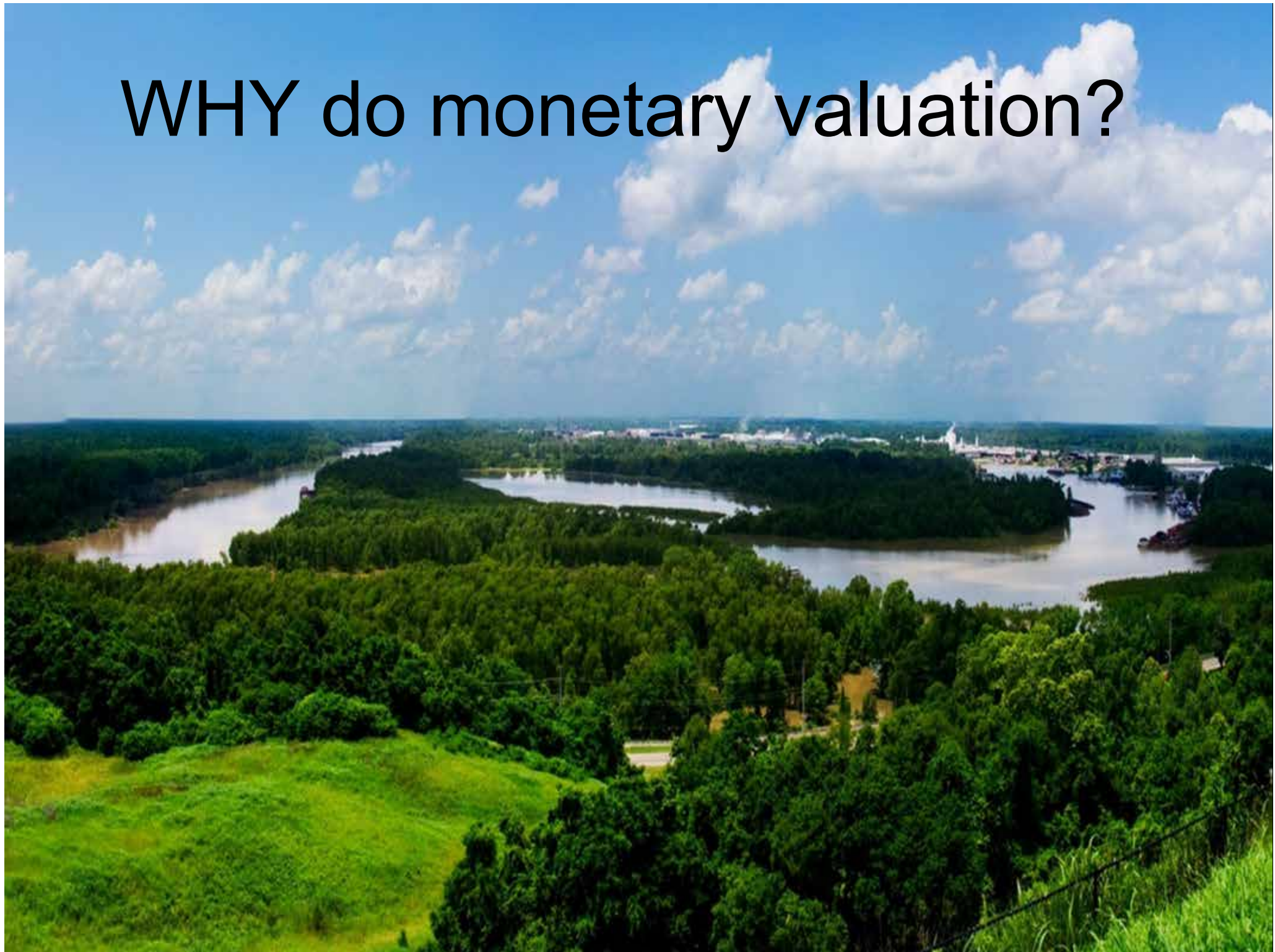
AMERICA  
844591 D  
WASHINGTON, D.C.  
DEPARTMENT OF THE TREASURY  
1789

AMERICA  
179180 G  
WASHINGTON, D.C.  
DEPARTMENT OF THE TREASURY  
1789

WHY do monetary valuation?  
WHAT is monetary valuation?  
HOW do we measure value?



WHY do monetary valuation?



Which lakes should we invest in?



Are we making smart investments  
in lakes?



WHY do monetary valuation?



# WHY do monetary valuation?

- Cost benefit assessment





# WHY do monetary valuation?

- Cost benefit assessment
- Evaluating policies and regulations



# WHY do monetary valuation?


- Cost benefit assessment
- Evaluating policies and regulations
- Strategic use



# WHY do monetary valuation?

- Cost benefit assessment
- Evaluating policies and regulations
- Strategic use
- Prioritizing protection or restoration





# Novel ways of funding lake protection

# New fund aims to protect Mississippi headwaters while they're still clean

The Minnesota Nature Conservancy is launching the \$10 million fund.

By Josephine Marcotty Star Tribune | SEPTEMBER 11, 2015 — 9:33PM



BRIAN PETERSON

The Nature Conservancy is launching an effort to maintain water quality in rivers like the Mississippi, here as dawn breaks at its headwaters in Itasca State Park.

The Minnesota Nature Conservancy is launching a \$10 million fund dedicated to showing that the best way to protect the Mississippi River and the Twin Cities' drinking water is to use nature itself.

The Upper Midwest chapter of the international conservation organization on Friday announced the creation of the private Minnesota Headwaters Fund. Over the next three years it will raise money to pay for targeted protections, such as conservation easements and streambank protections, around the four rivers that are the Mississippi's primary tributaries: the Crow Wing, the Pine, the Sauk and the Rum.

Ecolab Inc., a Minnesota-based water technology company, was the first to donate, with a contribution of \$500,000. The money will be used to keep forested land in its natural state, restore wetlands and flood plains, and protect stream banks.

TEXT SIZE

18

696

EMAIL

PRINT

MORE

protect stream banks... restore wetlands and flood plains... with a contribution of \$500,000. The money will be used to keep forested land in its natural state, restore wetlands and flood plains, and protect stream banks.

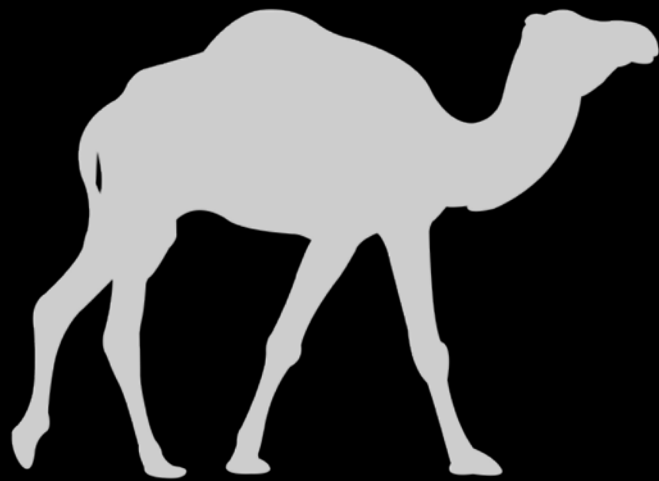


WHY do monetary valuation?  
WHAT is monetary valuation?  
HOW do we measure value?



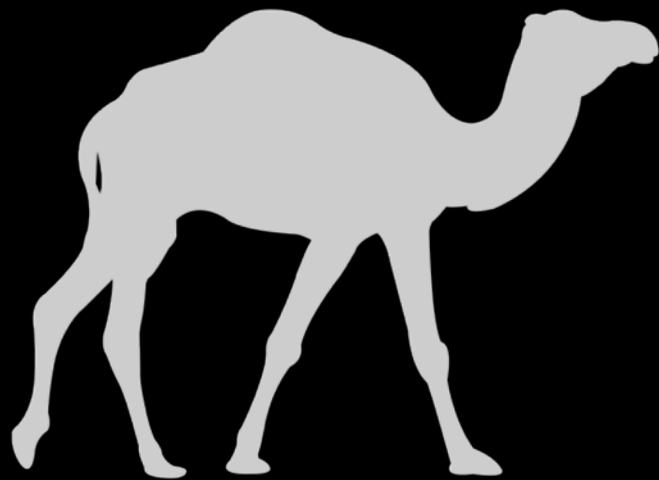
WHAT is monetary valuation?

WHAT is monetary valuation?

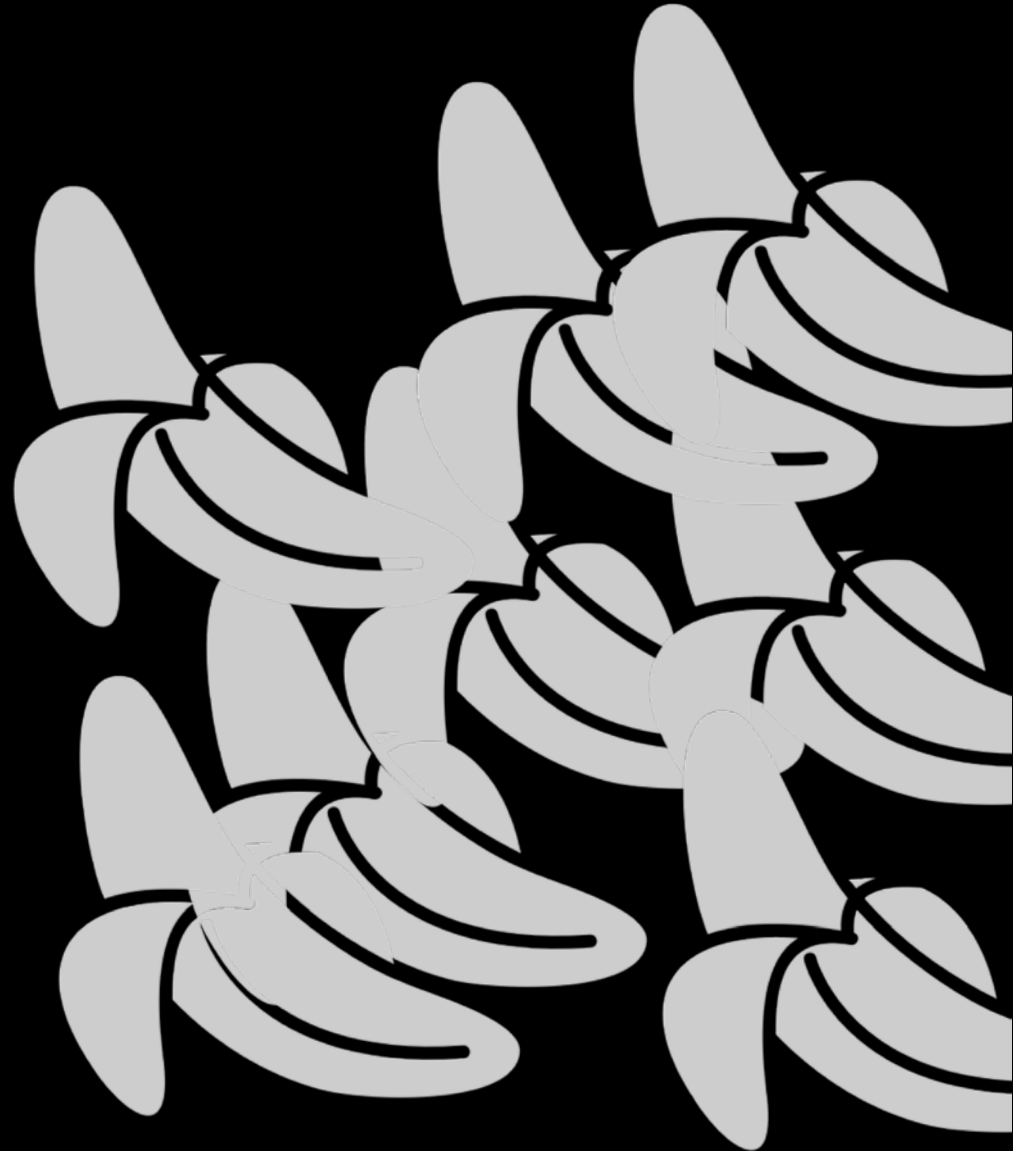
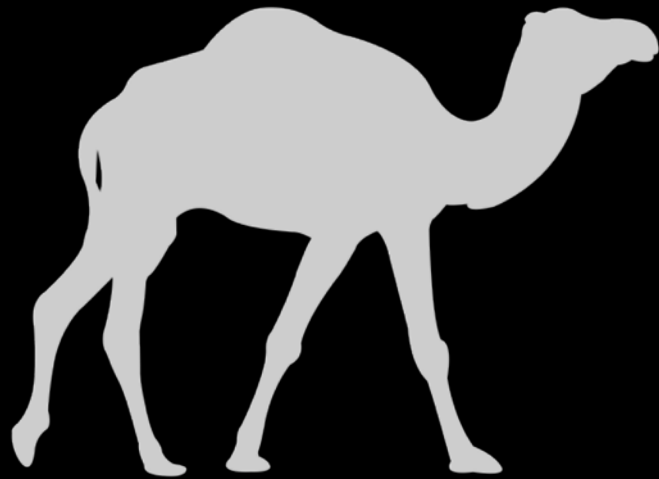




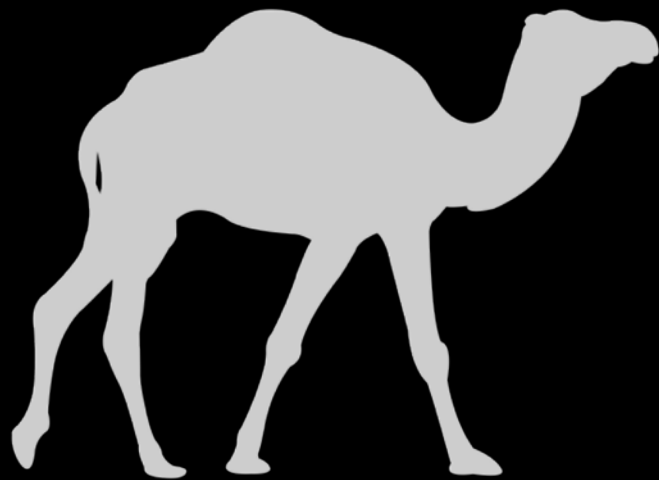
# WHAT is monetary valuation?



WHAT is monetary valuation?



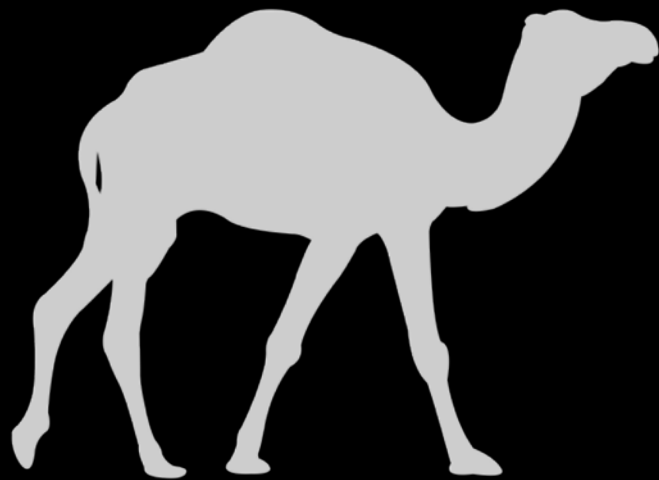
# WHAT is monetary valuation?



# WHAT is monetary valuation?

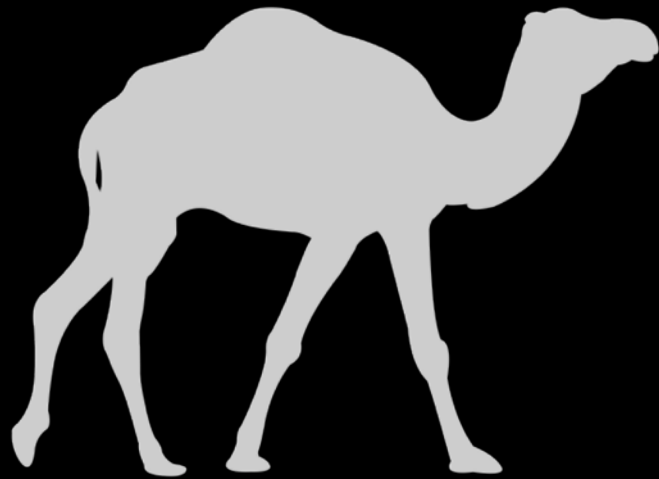


# WHAT is monetary valuation?



# WHAT is monetary valuation?

\$ \$ \$



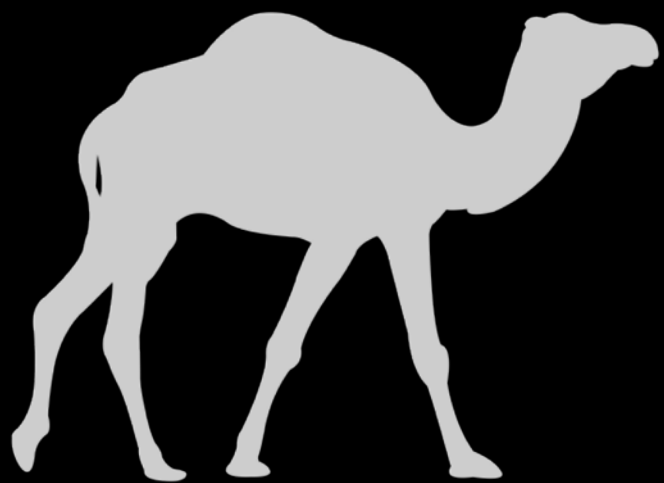
\$



Valuation is not value

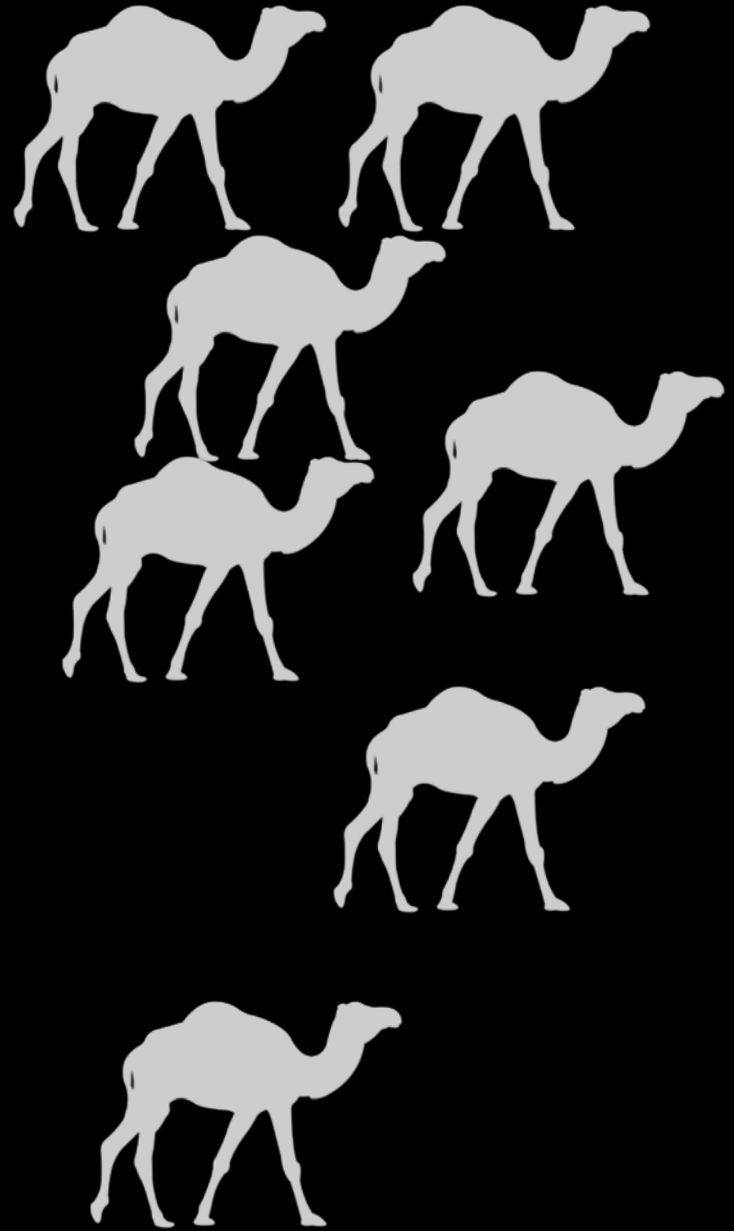
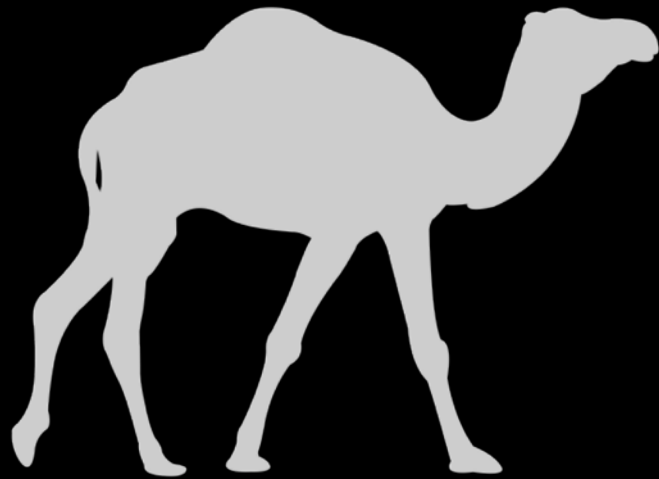


\$ \$ \$





\$ \$ \$



WHY do monetary valuation?  
WHAT is monetary valuation?  
HOW do we measure value?



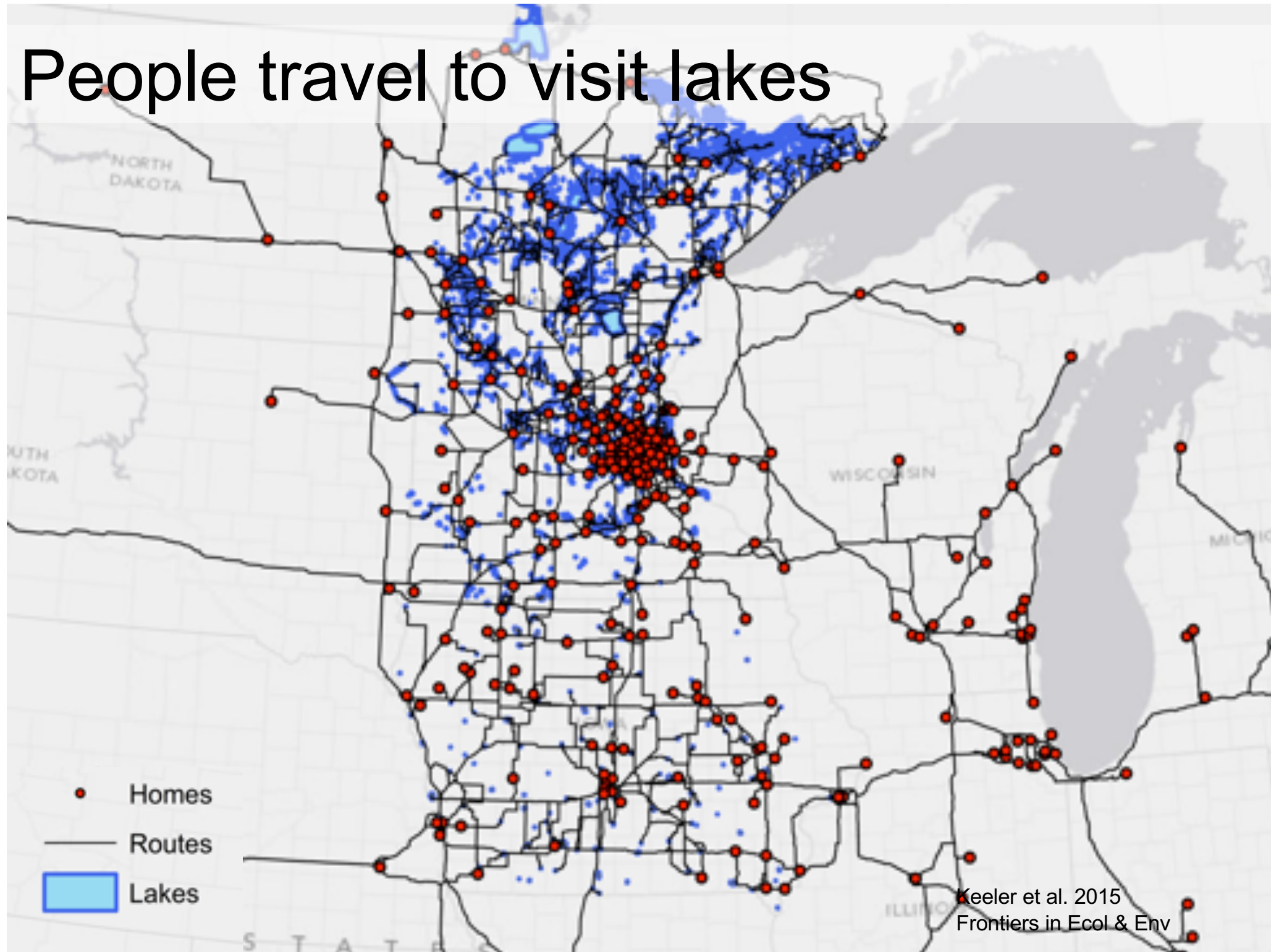




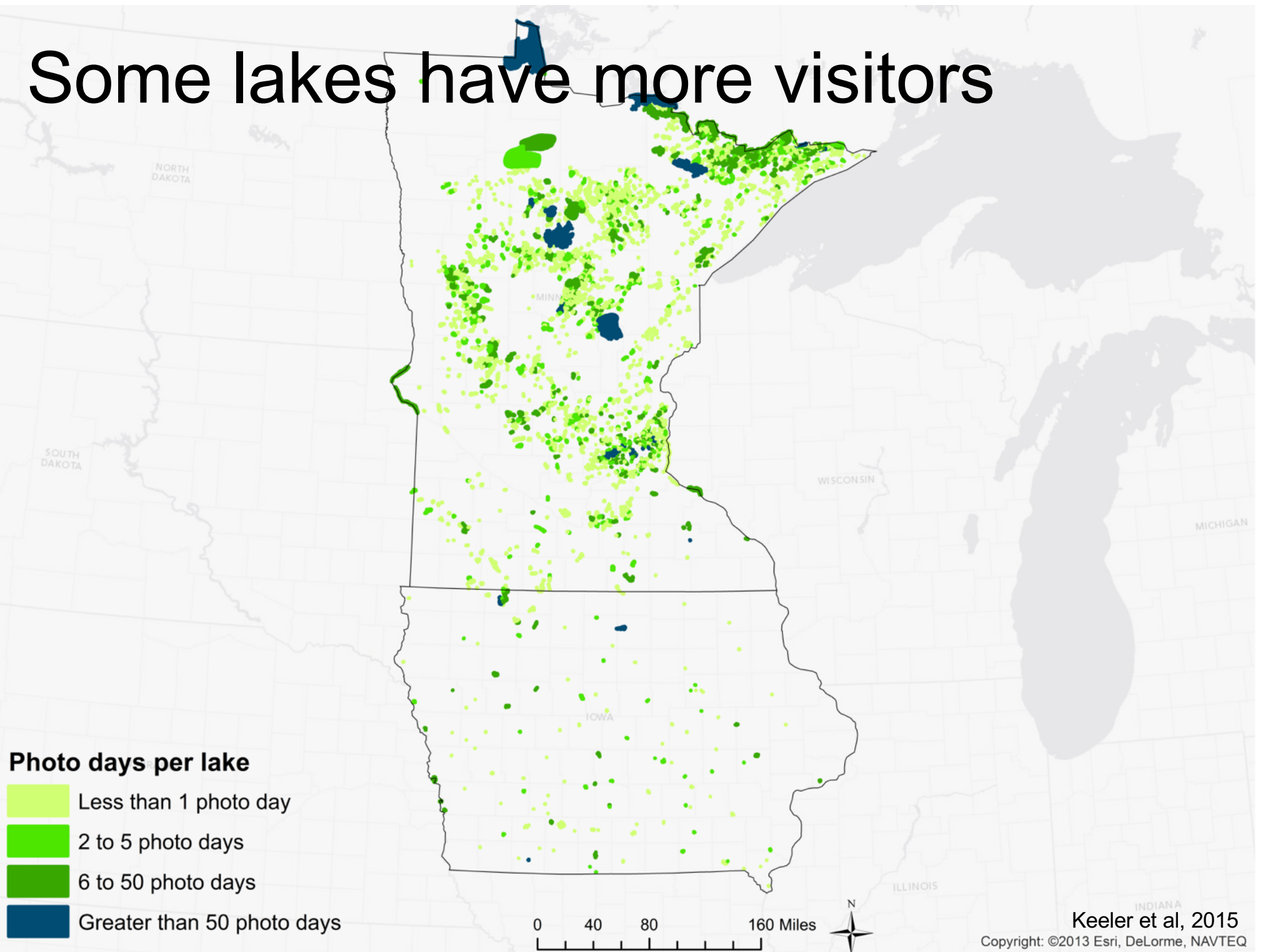
# Well contamination is expensive



# People travel to visit lakes



# Some lakes have more visitors



# Cleaner lakes have more visitors

## Lake clarity

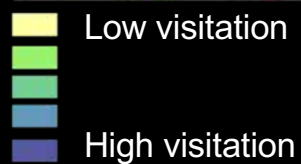
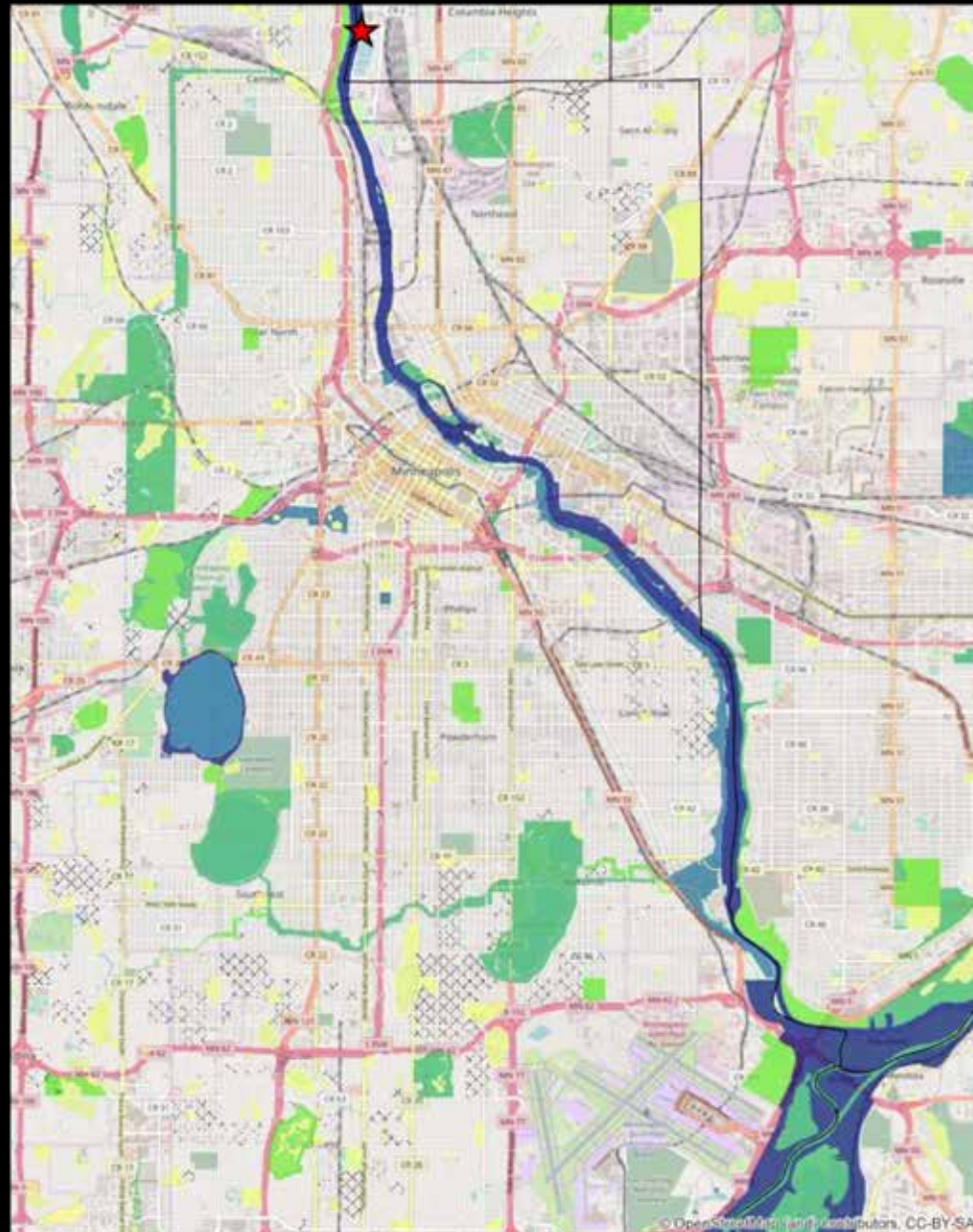


0 40 80 160 Miles





People in cities  
visit clean water,  
too



We don't value  
everything the  
same way

We don't value everything the same way

- We highly value avoiding events that are out of our control



GERARD BUTLER JIM STURGESS ABBIE CORNISH WITH ED HARRIS AND ANDY GARCIA

**GEOSTORM**



We don't value everything the same way

- We highly value avoiding events that are out of our control

- We under-value unlikely events



People are much more reluctant to give something up than to not get it at all



People may feel uncomfortable with monetary values for things that they think of as a right

“We” are not uniform, and we don’t all have the same values



Photo: Brian Peterson, Star Tribune

“We” are not uniform, and we  
don’t all have the same values

Some voices have been  
consistently sidelined

Photo: Brian Peterson, Star Tribune

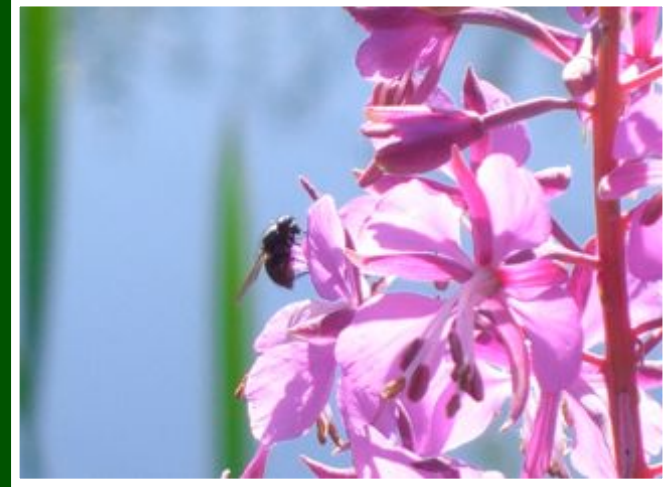




We need to make sure  
we include the value of  
the right things, even if  
they're hard to  
measure



# Ecosystem Services



# Ecosystem Services

Ecosystem Services  
are the benefits  
people receive from  
the environment



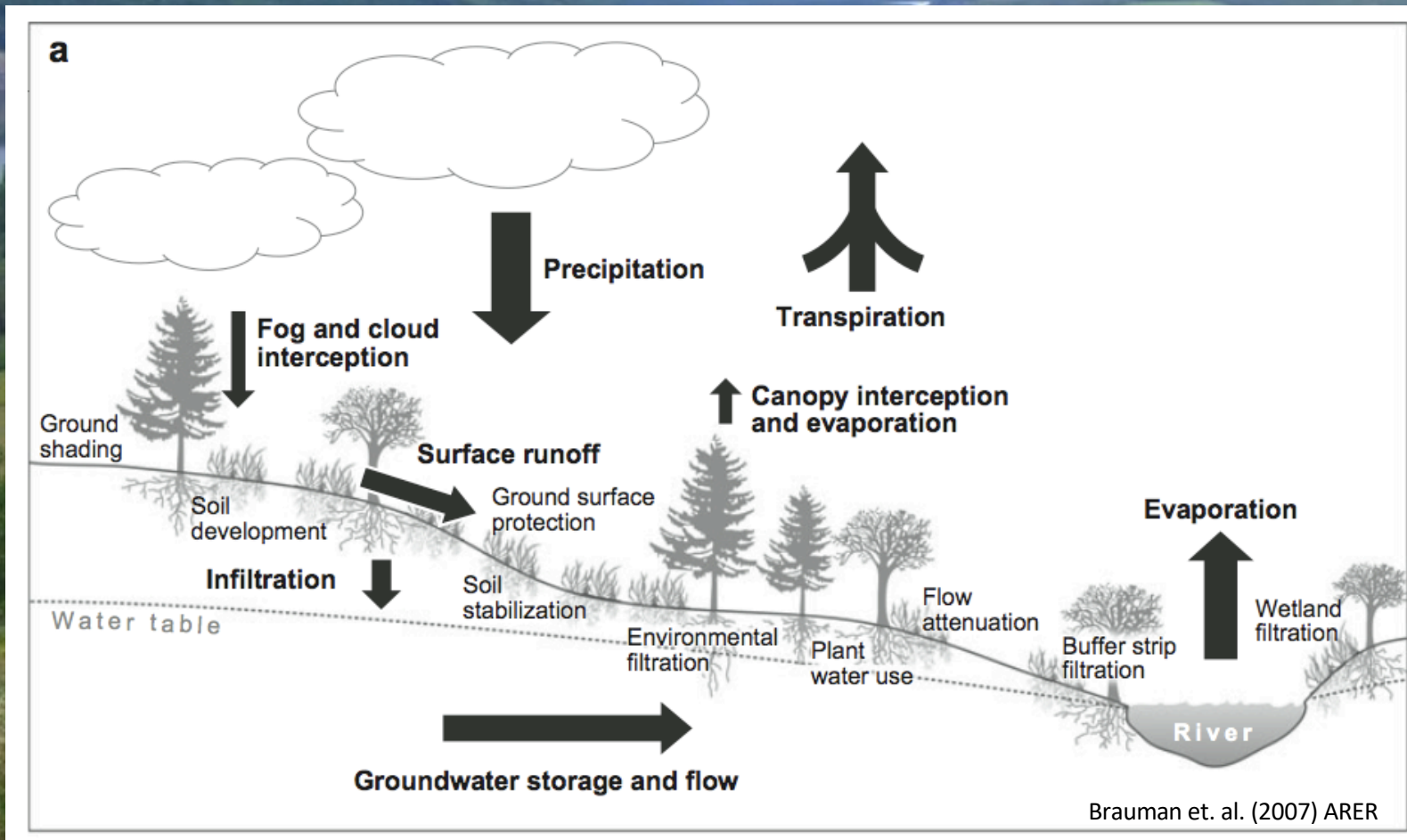
# Ecosystem Services

Ecosystem Services  
are the benefits  
people receive from  
the environment

Nature's  
Contributions to  
People

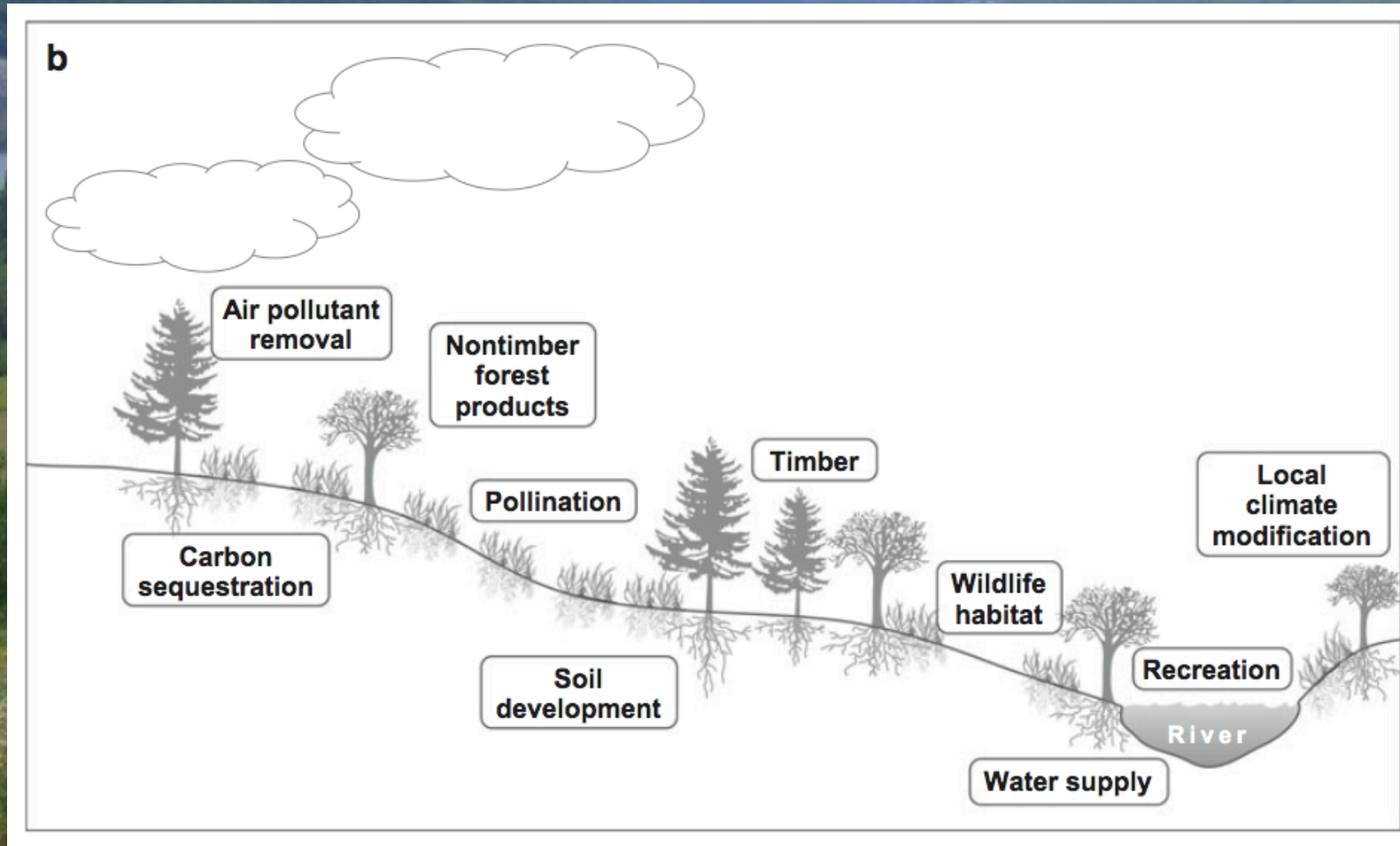


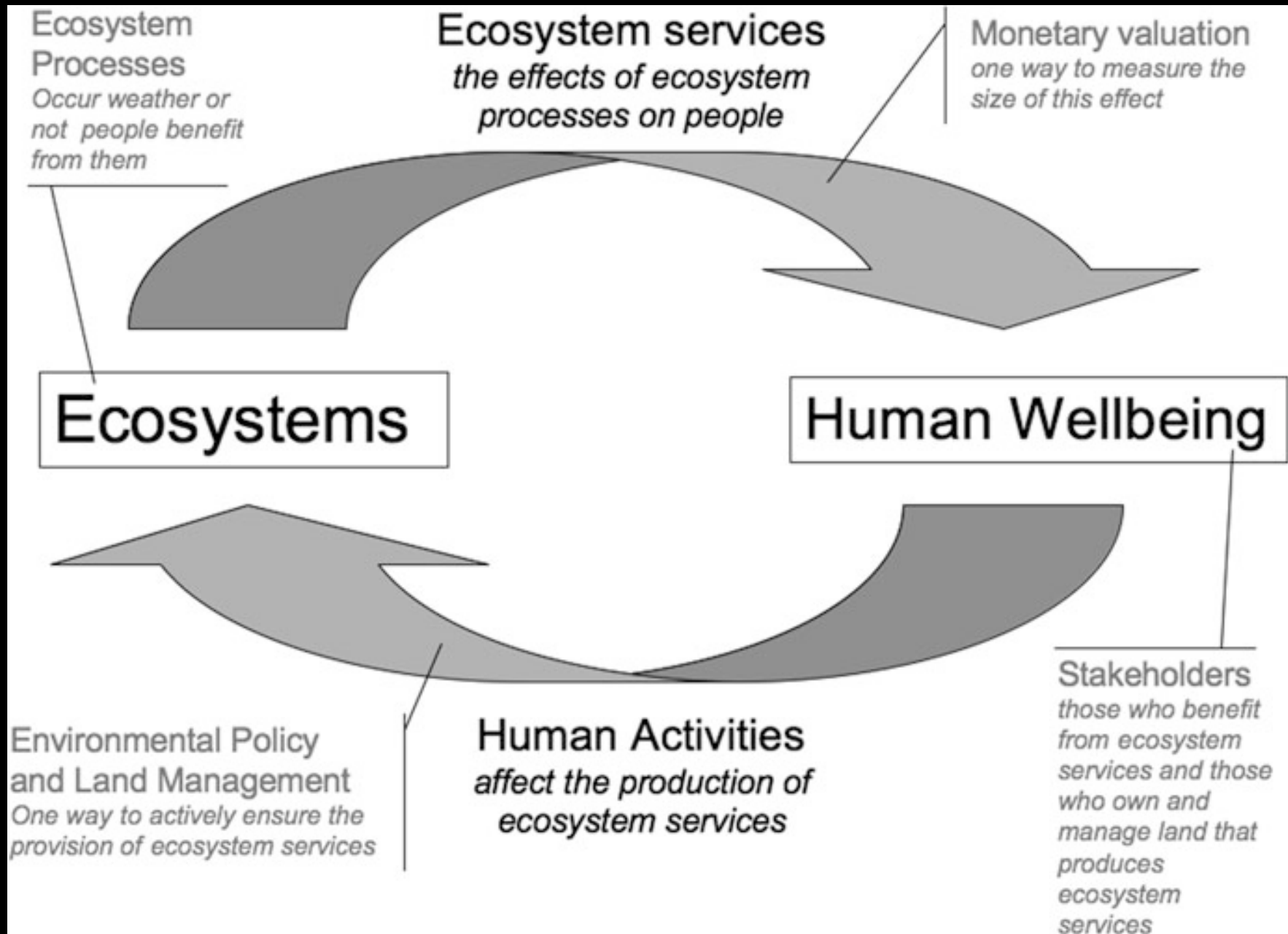
# Ecohydrologic Processes



# Desired Outcomes

## Watershed Ecosystem Services





WHY do monetary valuation?  
WHAT is monetary valuation?  
HOW do we measure value?



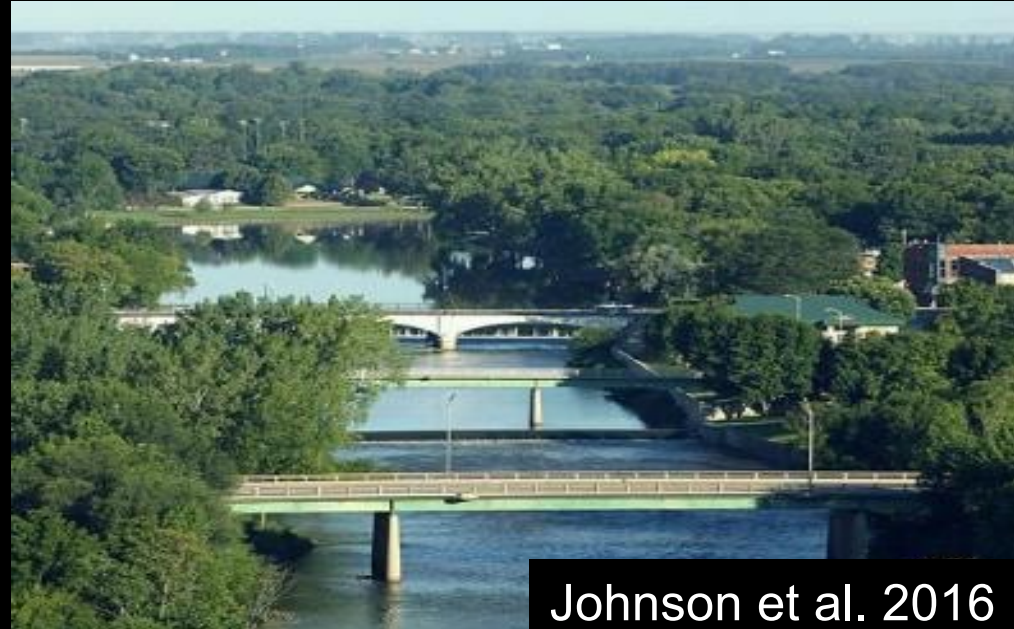


# Valuing Conservation and Agricultural BMPs





A land conservation payment of \$1,300 yields public benefits of \$1,700 to \$6,400



Johnson et al. 2016

Caring is a value, even when it's hard  
to put a number on it





**kbrauman@umn.edu**  
 **@katebrauman**

INSTITUTE ON THE  
**ENVIRONMENT**

UNIVERSITY OF MINNESOTA  
**Driven to Discover™**