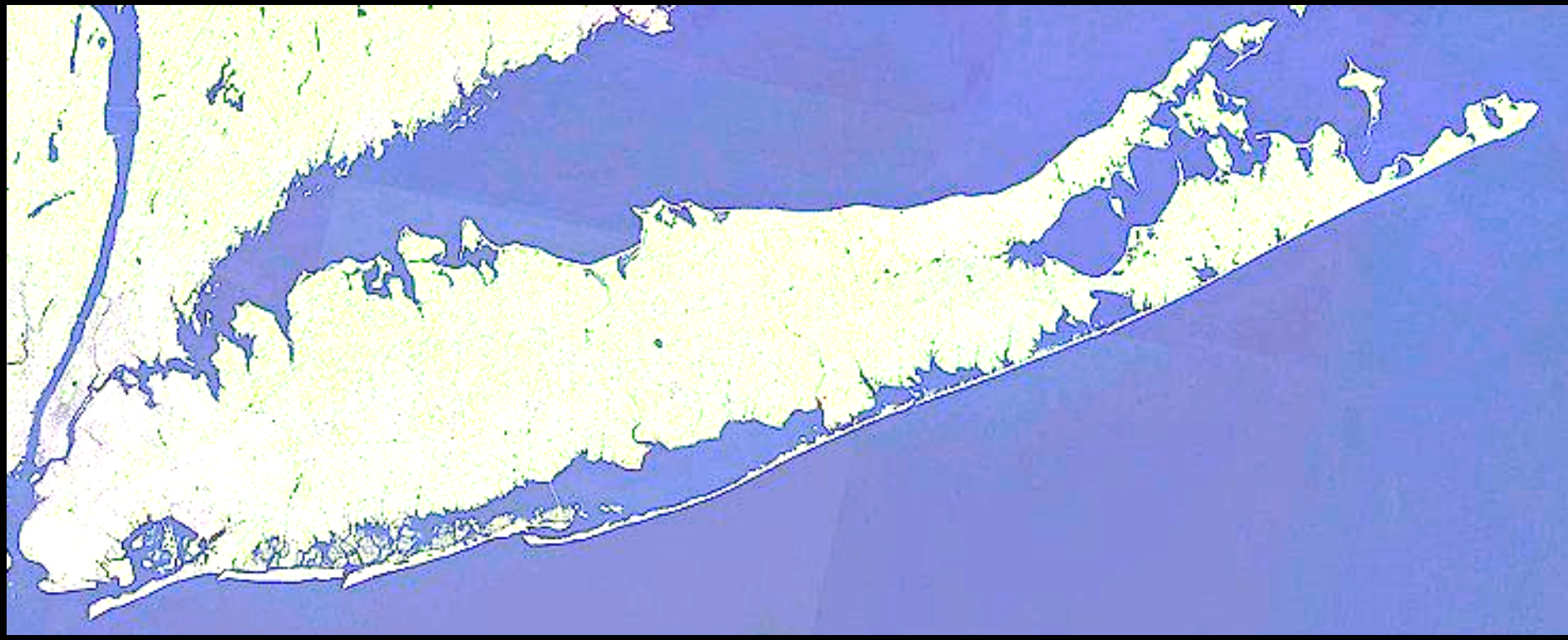
Long Island Water Quality and the Cost of INACTION



Liz Smith, environmental economist, PhD

Marine Aggregation, 2014

The Nature Conservancy
Protecting nature. Preserving life.™

Conservation on Long Island

Conservation success → Improve the ecological conditions

Nitrogen Pollution

Harmful Algae 8 (2008) 3–13

Contents lists available at ScienceDirect

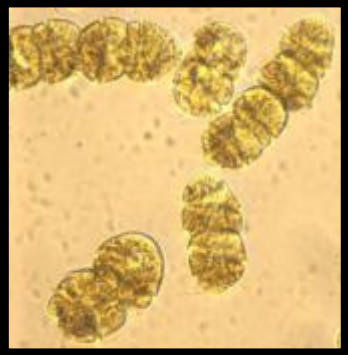
Harmful Algae

journal homepage: www.elsevier.com/locate/hal

Eutrophication and harmful algal blooms: A scientific consensus

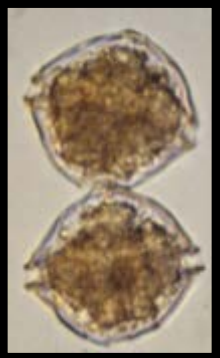
J. Heisler [a,3], P.M. Glibert [b,*], J.M. Burkholder [c], D.M. Anderson [d], W. Cochlan [e], W.C. Dennison [b], Q. Dortch [f], C.J. Gobler [g], C.A. Heil [h,1], E. Humphries [i], A. Lewitus [j,k,2], R. Magnien [l,2],

Enhanced nutrient loading → more intense &/or toxic HABs

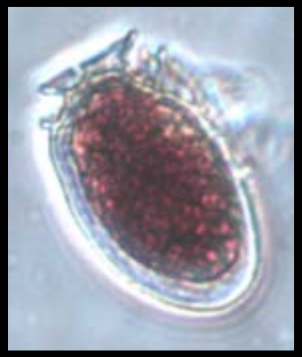


Cochlodinium

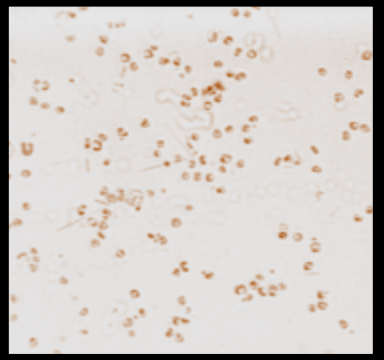
Ulva



Alexandrium

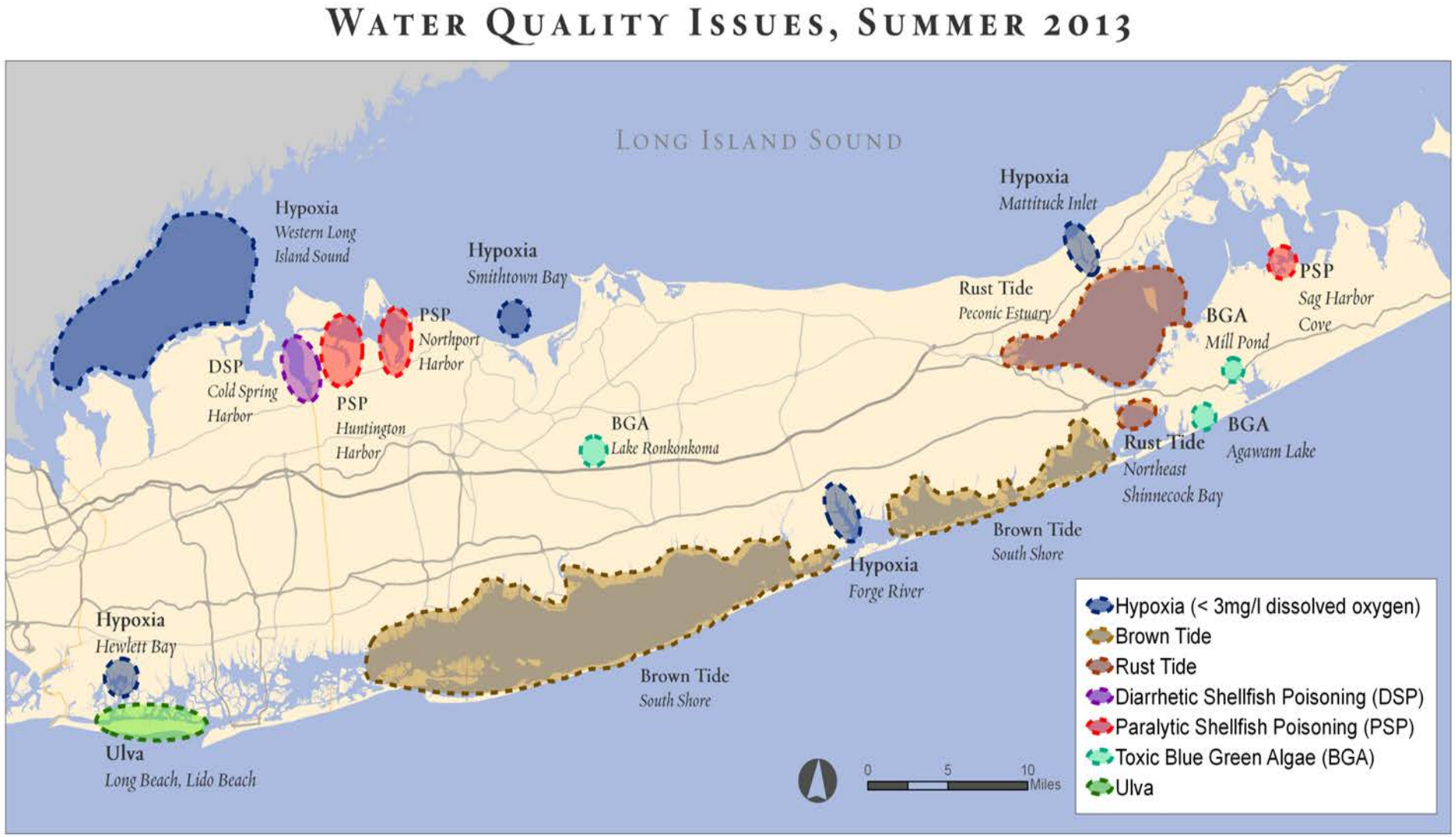


Dinophysi

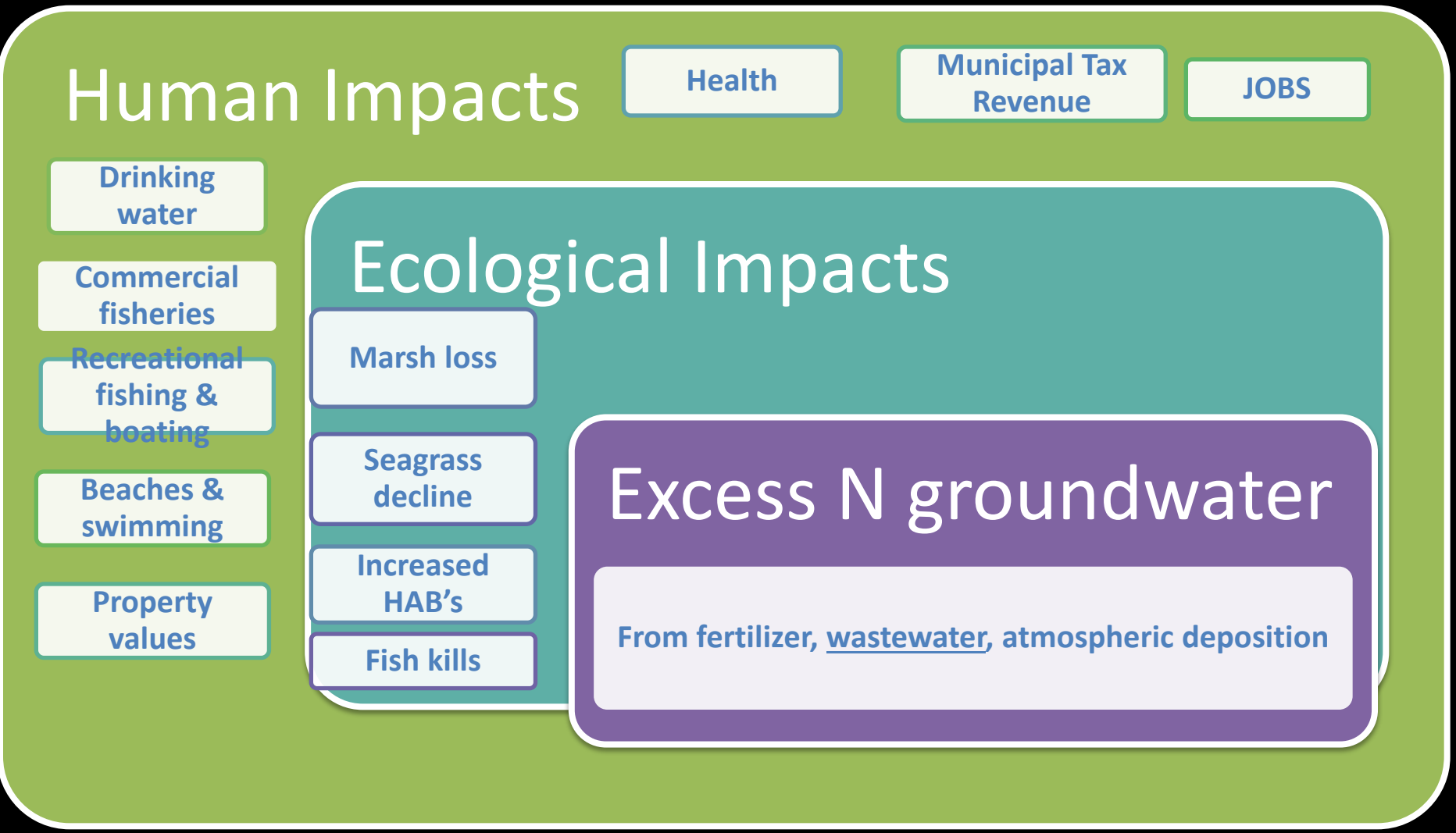


Brown tide

Harmful algal blooms across Long Island



Impact Map


Human Impacts
Health
Municipal Tax Revenue
JOBS
Drinking water
Commercial fisheries
Recreational fishing & boating
Beaches & swimming
Property values
Ecological Impacts
Marsh loss
Seagrass decline
Increased HAB's
Fish kills
Excess N groundwater
From fertilizer, wastewater, atmospheric deposition

Focus Groups & Polling Reveals…

- LI Residents have some concern but there's a disconnect when it comes to their drinking water, wastewater and recreational waters
- However, the majority (>50%) think 'LI waters' have deteriorated over the last 10 years and will continue to decline.
- Most Long Island voters (68-78%) think that improving water quality would have a **positive impact** on quality of life, public health, tourism, and housing values
- There is broad support (85%) around the idea of new standard to reduce levels of nitrogen pollution in Long Island waters once the problem is introduced
- Overall, people are willing to put their money where their mouth is

High price tag…no problem?

- Three quarters of the respondents support $3B investment to meet a new standard

Responses to financing and incentives

- Charging a small fee to property owners, in proportion to the value of their property **40%**
- Increasing the sales tax by one quarter of one percent **51%**
- Placing a fee on water bills, higher for those that use more water and lower for those that use less **69%**

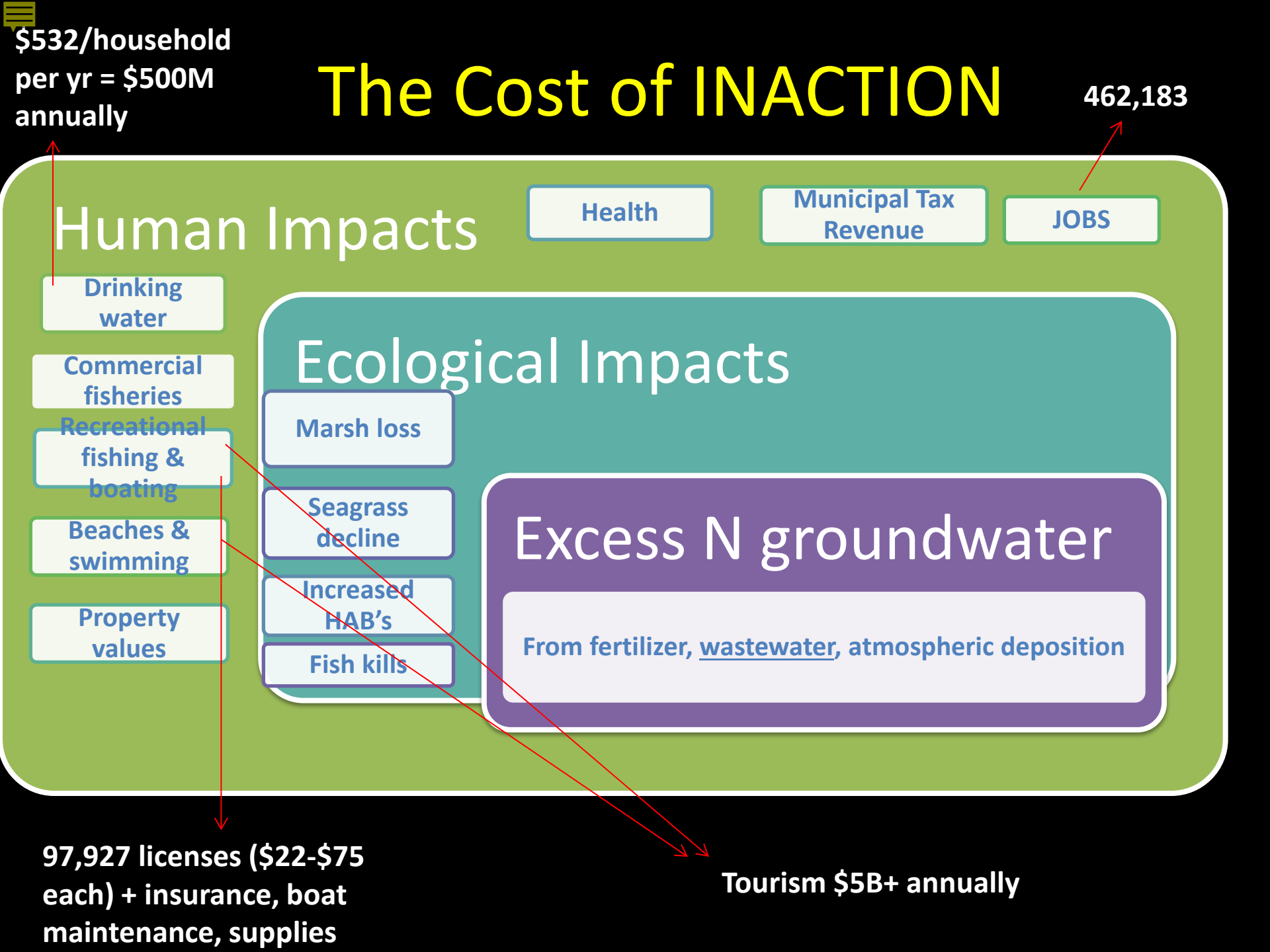
Aggregate WTP

To understand the impact of the WTP results we can look at it in aggregate

- $17.20/month * 12 → **$206.40** WTP per household/per year
- $206.40/year * 950,446 households → **$196,172,054** WTP across all LI households/per year
- $196,172,054 * 10 → **$1,961,720,544** WTP across all LI households with 10 years of payments (assumes no interest, inflation, rate of return or population growth)

In summary, if each household were WTP $17.20/month for the next ten years the investment would exceed $2B with just a modest interest rate

*Household #'s based on LI census data


$532/household per yr = $500M annually
The Cost of INACTION
462,183
Human Impacts
Health
Municipal Tax Revenue
JOBS
Drinking water
Commercial fisheries
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97,927 licenses ($22-$75 each) + insurance, boat maintenance, supplies
Tourism $5B+ annually

Where we are…

- Gather and integrate key stakeholder values into our conservation work
- Integrate environmental benefits into decision making, given the time/money constraints
- Think about incentives and how to finance changes that impact water quality (to achieve ultimate conservation priorities)