

Discussion notes on “Environmental Contamination of Aquatic Resources: Implications on Health”

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Overview

- The lecture provided a thorough overview of the exposure pathway, from the source of the toxin to the exposed population and local examples (e.g. Laguna de Bay, Bulacan River system)
- Environmental Issues
 - Contamination
 - Bioaccumulation & Biomagnification
 - POPs
- Detrimental effects on the population
- Preventive Strategies

Preventive Strategies

Strengthening of agreements and national environmental laws

- Philippine environmental laws are some of the most well-crafted in the world
- Implementation problems hound us, and thus allow the unabated contamination of our aquatic ecosystems
- Strengthen the already existing environmental monitoring being conducted to keep us in the know on past and current water quality conditions

Implement environmental and biological monitoring

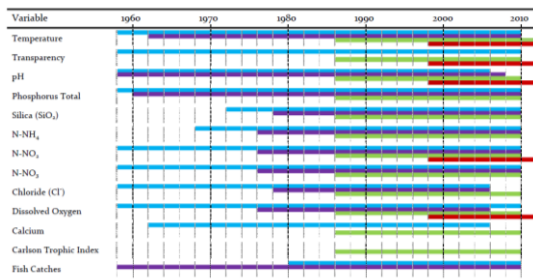
Challenges to Philippine Lakes

- Lack of scientific knowledge
- Over-development of littoral zones
- Irresponsible, intensive aquaculture
- Excessive nutrient and pollution levels
 - Fish kills
- Invasive species
 - Biodiversity loss

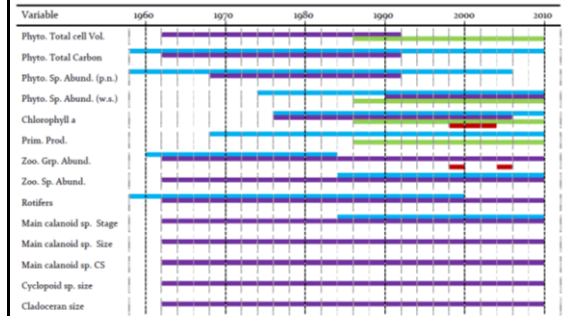


Legaspi et al., 2015

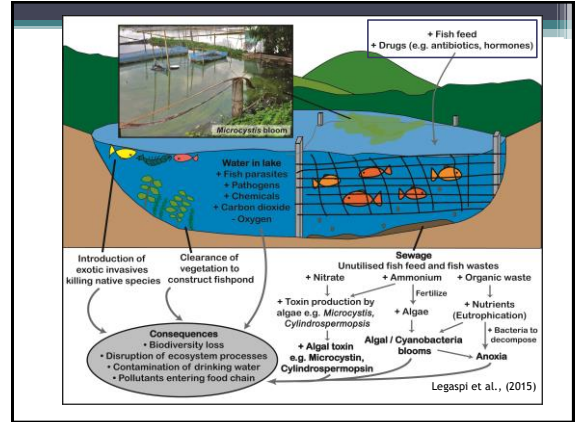
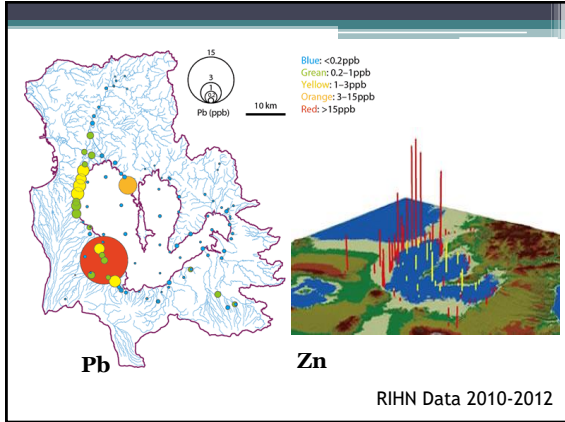
Table DI-4 Available data recorded monthly for each of the studied freshwater bodies: Lake Geneva (blue), Lake Biwa (purple), Fetusi Reservoir (green), Lake Taal (red). Data from Lake Biwa include only SPFRS data (except fish catch).



FASCICLE data (2011)



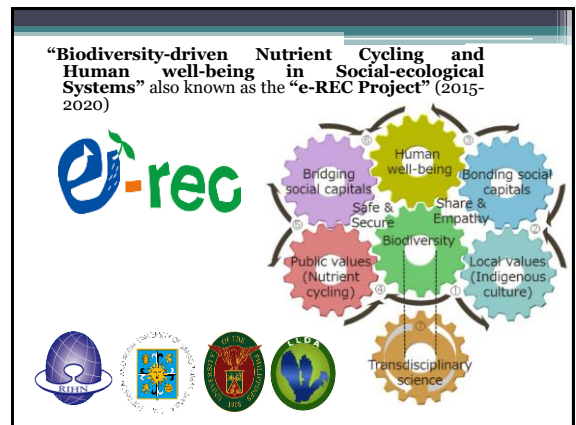
FASCICLE data (2011)

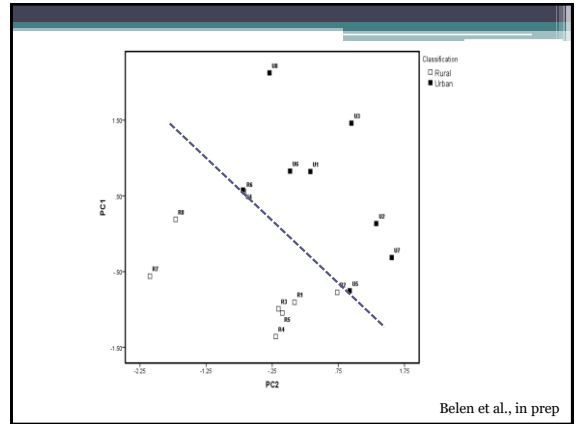
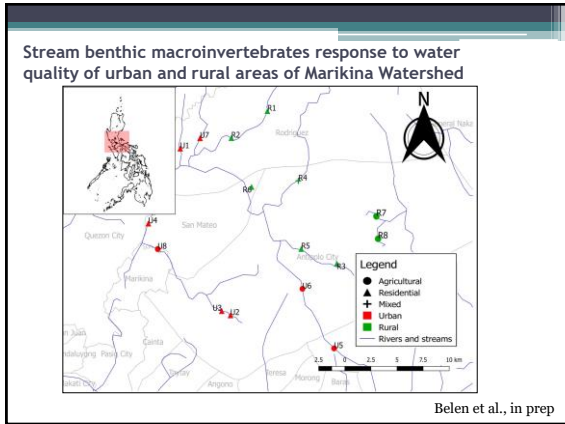


Making the most of what we have:
An Example of successful
utilization of monitoring data

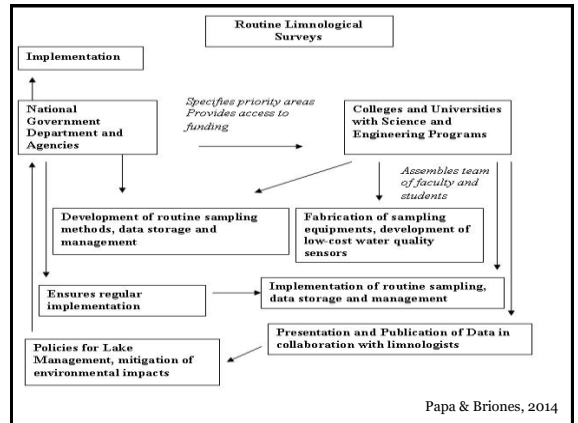
Linking Aquatic Biodiversity
and Social Systems

A healthy Aquatic
Environment translates
to a Health Community





Suggestion to address the gaps in water quality monitoring schemes



Utilizing Zooplankton as Bioindicators for Aquatic Health / Understanding their role in human health

Current and Future* Projects

Toxicity evaluation of selected nanoparticles in the freshwater calanoid copepod *Arctodiaptomus dorsalis*

Au Ag ZnO

Fish and eventually, Humans

The Vblankton project: assessing the ecological relationships between *Vibrio cholerae* and freshwater zooplankton in the Philippines



Role of Zooplankton Diversity in *Vibrio cholerae* Population Dynamics and in the Incidence of Cholera in the Bangladesh Sundarbans⁷

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