XVIII World Water Congress
International Water Resources Association (IWRA)

Algae accumulation risk zoning in large shallow lakes

using Taihu Lake as an example

Sien Liu

Nanjing Hydraulic Research Institute

XVIII WORLD WATER CONGRESS
Water for All
Harmony between Humans and Nature

第18届 世界水资源大会
水与万物：人与自然和谐共生

XVIII World Water Congress
International Water Resources Association (IWRA)

Content

- Background and Objectives
- Study Area
- Research Methodology
- Results and Conclusions

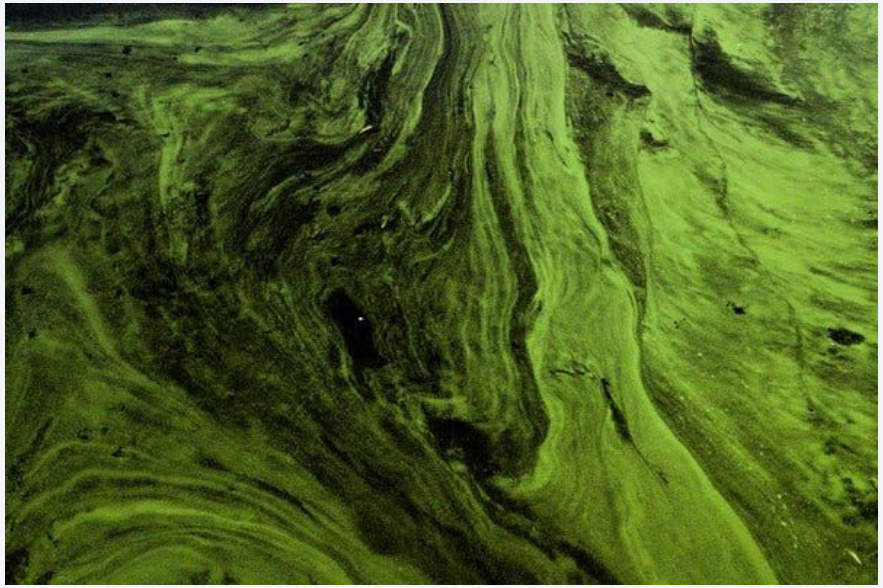
Background and Objectives

XVIII World Water Congress
International Water Resources Association (IWRA)

Large Shallow Lakes

Multi social-economic functions in highly developed and populated area

Eutrophication problems and algae blooms



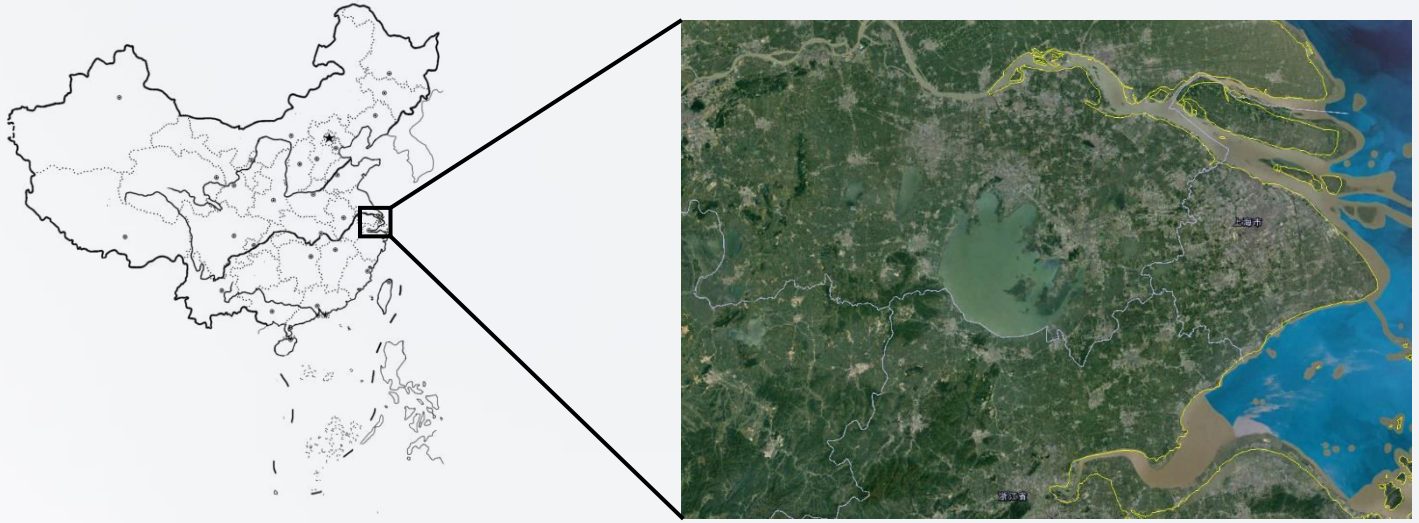
Lake Okeechobee

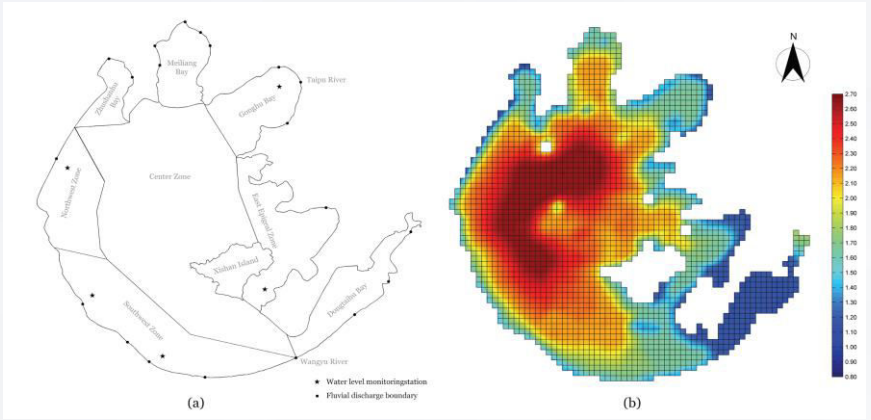
Taihu Lake

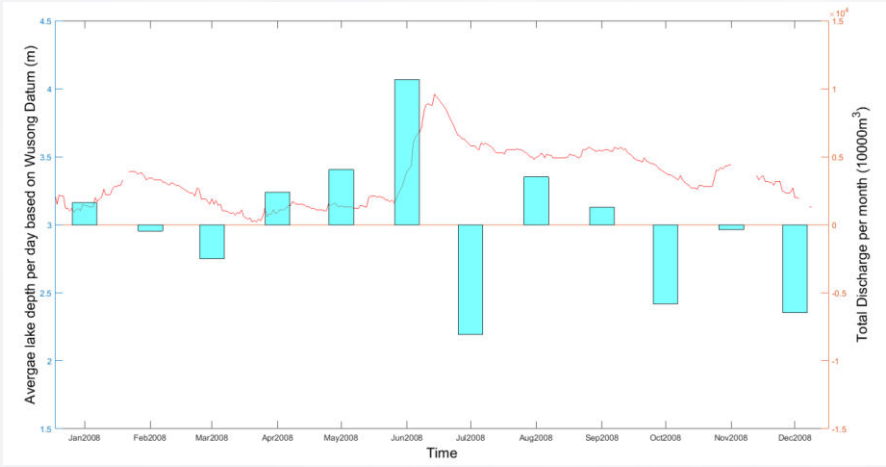
Study Area

Taihu Lake

- 3rd largest shallow lake in China
- Surface area of 2338km^2 with average depth of 1.9m
- With 8 sub-basins





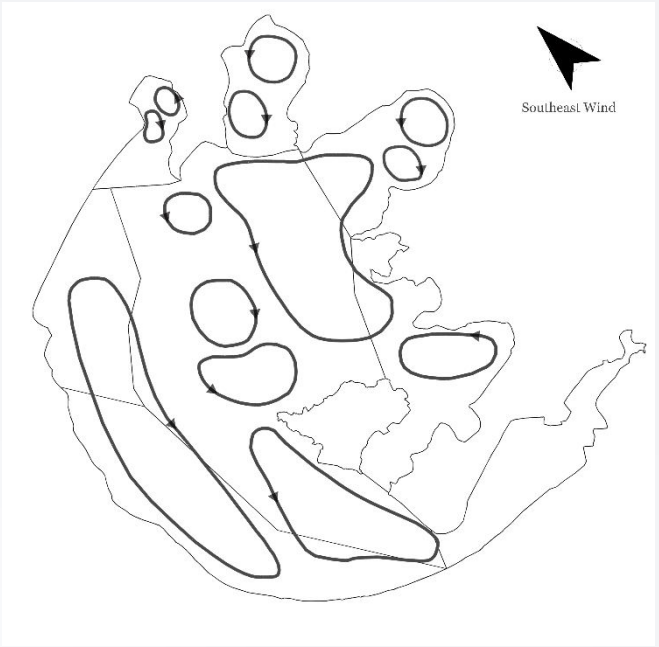


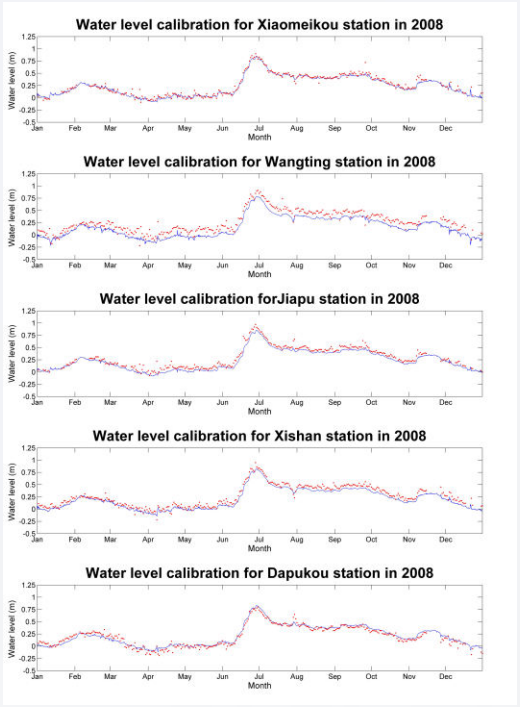
Taihu Lake

Consideration of wind-induced hydrodynamics using a well-calibrated 3-dimensional Delft3D model

Obtaining phytoplankton biomass data through satellite images

Incorporating algae biomass and lake geometry





Results and conclusions

Taihu Lake

Distribution map of algal accumulation hotspots in the littoral zones of Lake Taihu

Identification and analysis of high-risk areas

Results and conclusions

XVIII World Water Congress
International Water Resources Association (IWRA)

Conclusion

- Importance of algal bloom risk assessment
- Effectiveness of the proposed methodology
- Limitations and shortcomings of the study
- Future research directions

Thank you