



Christian-Albrechts-Universität zu Kiel



MANAGEMENT OF LAKE DUROWSKIE

Wągrowiec – Poznań July 2015

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Outline

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Current State of Lake Durowskie

- Plays vital role in providing recreational services including fishing, swimming and boating
- Restoration measures have implemented since 2009
 - Physical
 - Chemical
 - Biological
- Important to also manage human usage of the lake

Aims

- Determine sources of damage or deterioration in the lake and surroundings
- Propose management strategies to address current problems.



- Lake survey by kayak
- Trail exploration by foot
- Measurement of eroded footpaths
- Reading previous years' reports, and discussion with other groups



Main Identified Issues were related to:

- Slope and Bank Erosion
- Boat use
- Fishing – destruction of macrophytes
- Littering



Slope and Bank Erosion

- Footpaths
 - Unofficial shortcuts create erosion
- Mountain Biking
 - Circuits close to lake accelerate erosion into lake

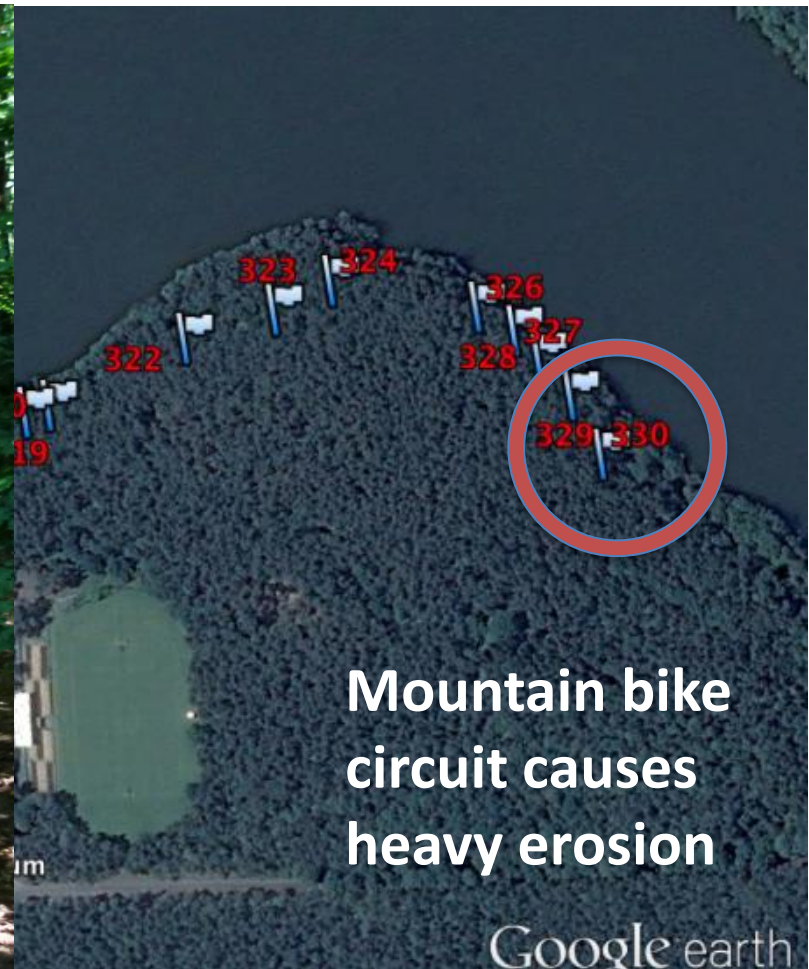


Slope and Bank Erosion: Footpaths

- More unofficial footpaths appear farther from the town center, where there are no stairs



Slope and Bank Erosion: Mountain Biking



Boats

- propeller of motor boats mixes upper layers of the lake: nutrients from deeper layers are brought to upper layers
- Sound pollution disturbs fish, other animals, and visitors to the lake
- Waves generate erosion on the shore.



Boats

- Easy access: cars can put boats directly into the water
- No spatial restrictions: jet skis and motorboats use same space as swimmers



Fishing

- Jetties and fishing spots on the shoreline prevent macrophyte growth
 - Problems with shoreline erosion
 - Reduces habitat for lake species



Littering

- Reduces aesthetic value of area
- Increase pollutants in lake



Proposed Management

Short-term strategies

- Introduce infrastructure and manage access to change usage patterns of lake

Long-term strategies

- Change attitudes and increase sense of ownership and responsibility towards lake through education and cross-boundary cooperation

Erosion Control

- Build more stairs in strategic places.



Erosion Control

- Indicate stairs with signs



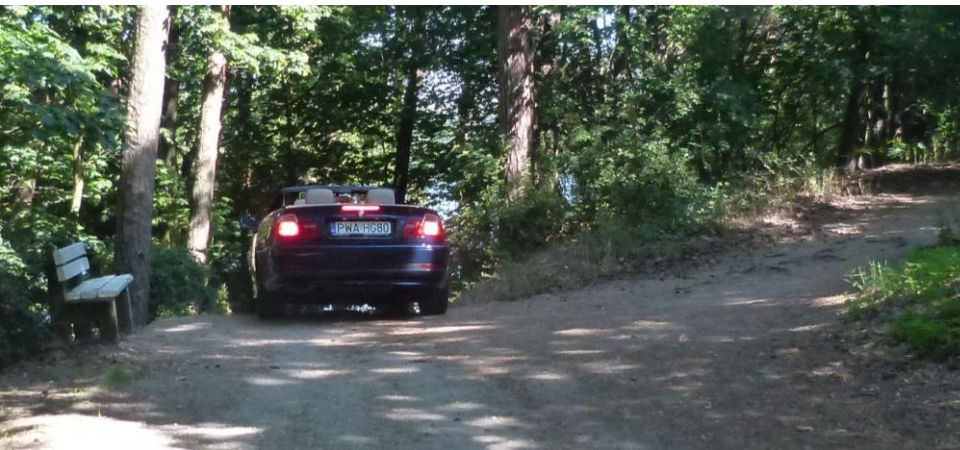
Access Management

– Regulate the use of private boats

- Implement payments to have the right to put the boat in the lake
- Different prices depending on type of boat

– Cars can not stay near the lake

- parking areas



Motor Boats

– Restrict or Limit access

- Division of use on the lake and some restrictions.
- Cannot go near the macrophytes.





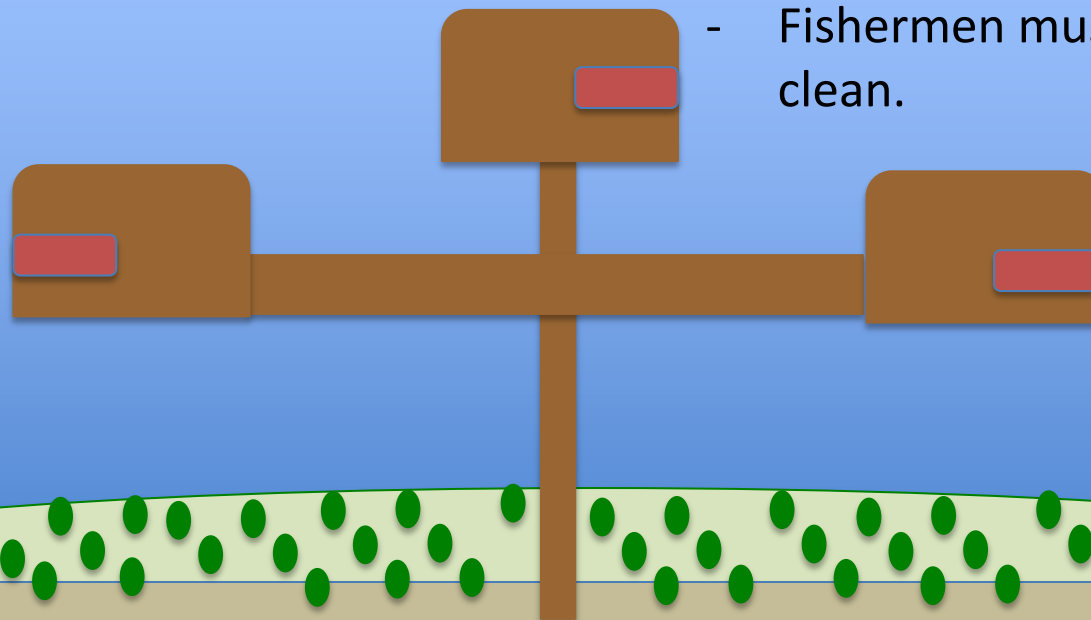
- No motor boats allowed in northern part of lake
- No use of boats in swimming areas
- Swimming areas circuit of buoys.

Fishing

- Reduce number of jetties
 - Implementation of public jetties

Code of Conduct

- Reserve the area ahead of time
- Pay for the hours of use reserved.
- Fishermen must leave the place clean.



Fishing

- Can rent electric boats.
 - not generate huge harm on the environment
 - allows fisherman to change location
 - more freedom and options
 - Avoid destruction of macrophyte belt.
- boats will be property of the city of Wagrowiec.



Long term Management Strategies

Education

- Provide information

Involve the Community

- Summer Camps and School Projects
- “Lake Day”

Cross-boundary Cooperation

- Collaborate with Kobylec to improve the quality of both Lake Durowskie and Lake Kobyleckie



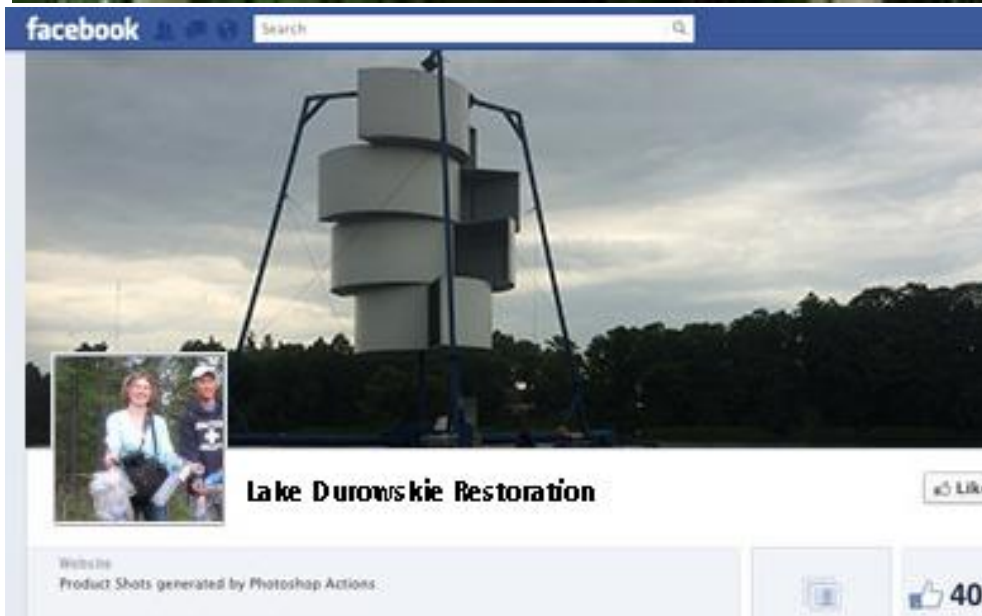
Education

- Informational signs
 - Educational
 - Erosion prevention
 - Signs promoting responsible and low-impact use of the area



Social Media

- Facebook page or website specifically about restoration activities



Involve the Community

- Summer Camps and Activities for children
 - bird watching
 - nature walks
 - kayak tours
 - trash collecting
- School Science Projects
 - Short monitoring projects
 - Science fair



Involve the Community

- “Lake Day” and other events
 - Music in the park by lake
 - Competitions
 - Swim/kayak competitions
 - Trash collection
 - Science fair projects
 - Ice creams & snacks from local vendors
 - bicycle tours between Wagrowiec and Kobylec
- Education
 - educational stalls
 - flyers about lake
 - maps with bike routes

The  and  present:

Love

June 9th
SUN 11AM-4PM

OUR LAKE DAY

Come play in the
car-free streets and parks
surrounding Lake Merritt
—transformed through Measure DD!

OAKLAVIA BY THE LAKE
WALK, BIKE, STROLL, DANCE THE LAKE

**LAKE MERRITT
BOULEVARD
GRAND OPENING**
(formerly 12th Street)
2pm Dedication Ceremony
Hosted by the Measure DD
Community Coalition

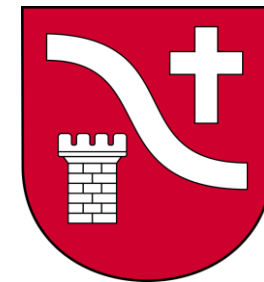
LAKE DAY

Cross-Boundary Cooperation

- Collaboration between the communities of Wagrowiec and Kobylec to improve the quality of both Durowskie and Kobyleckie Lakes

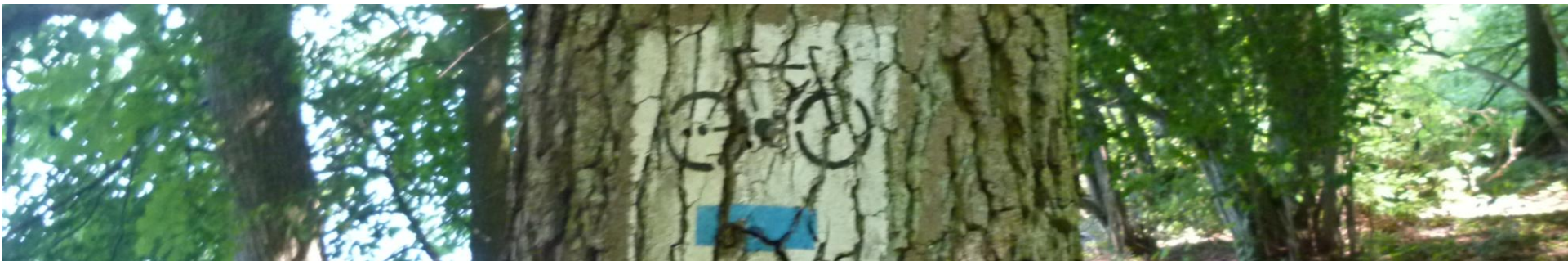
Why?

- current pressure on Lake Durowskie
 - inflow of nutrients from upstream
 - reduced aesthetic value --> reduced economic propensity for Durowskie community
- economic & aesthetic benefits for both communities



How?

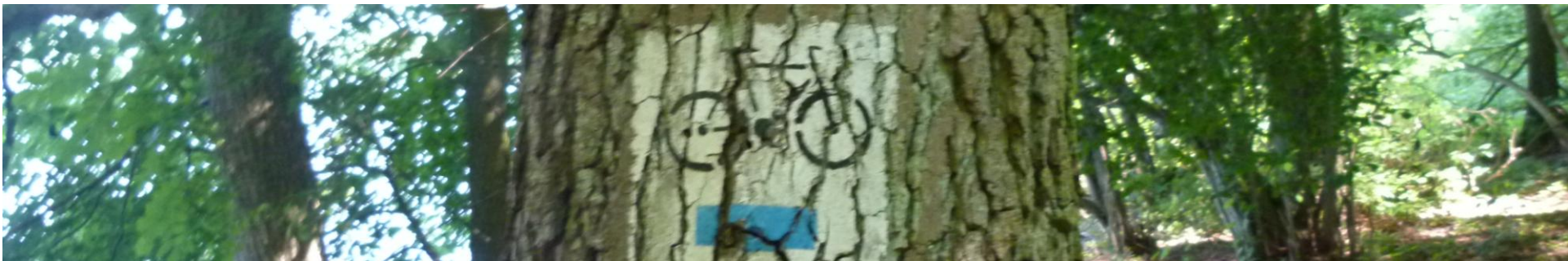
- Exchange information
 - Meetings with influential members of both communities
 - encourage scientific co-operation
 - Share restoration techniques & management practices
- economic support/invigoration of Lake Kobyleckie
 - install mountain bike circuit in Kobyleckie district.
 - encouraging more mountain bikers to go to municipality of Kobyleckie
>> more visitors, more spending, more economic revenue
 - more parking at Kobyleckie lake
 - offer signs directing people to Kobyleckie parking
 - Improve bike paths between Durowskie and Kobyleckie



Cross-Boundary Cooperation

Expectations/Outcomes

- Communities working together to improve quality of both lakes
 - Reduce pressure of over-use on Lake Durowskie
 - Reduce cost of maintenance, restoration and erosion control of Lake Durowskie
- Increased economic benefits & recreational services & provisions for both communities
- More business opportunities for the Kobyleckie community



Recommendations

- Improve infrastructure that encourages people to use the lake in less destructive ways
 - Stairways, signage, and parking to reduce hillslope erosion
 - Fees to reduce destructive boat use
 - Jetties to reduce bank erosion and macrophyte destruction
- Increase education and involve community
 - Promotes increased sense of ownership and responsibility
- Cross-boundary cooperation between Wagrowiec and Kobylec
 - control erosion on Lake Durowskie and reduce nutrient input from upstream

Conclusions

- Initially infrastructure and regulation can reduce damage to the lake
- In the long term, education and cross-boundary cooperation change attitudes and increase sense of responsibility
- To improve management of the lake and ensure best practice usage, both short- and long-term management strategies must be implemented



Thank you