



# **Preliminary Study on the Ecological Status of Riparian Zones along Running Waters in a Central European Urban Area (Budapest, Hungary)**

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# WHY DOES IT MATTER?

## BENEFITS OF THE RIPARIAN ZONES

### 1. Ecological buffer

- Pollutants filtration
- Riverbank stabilisation
- Erosion control

### 2. Interface between land and water ecosystems

### 3. Critical Habitat



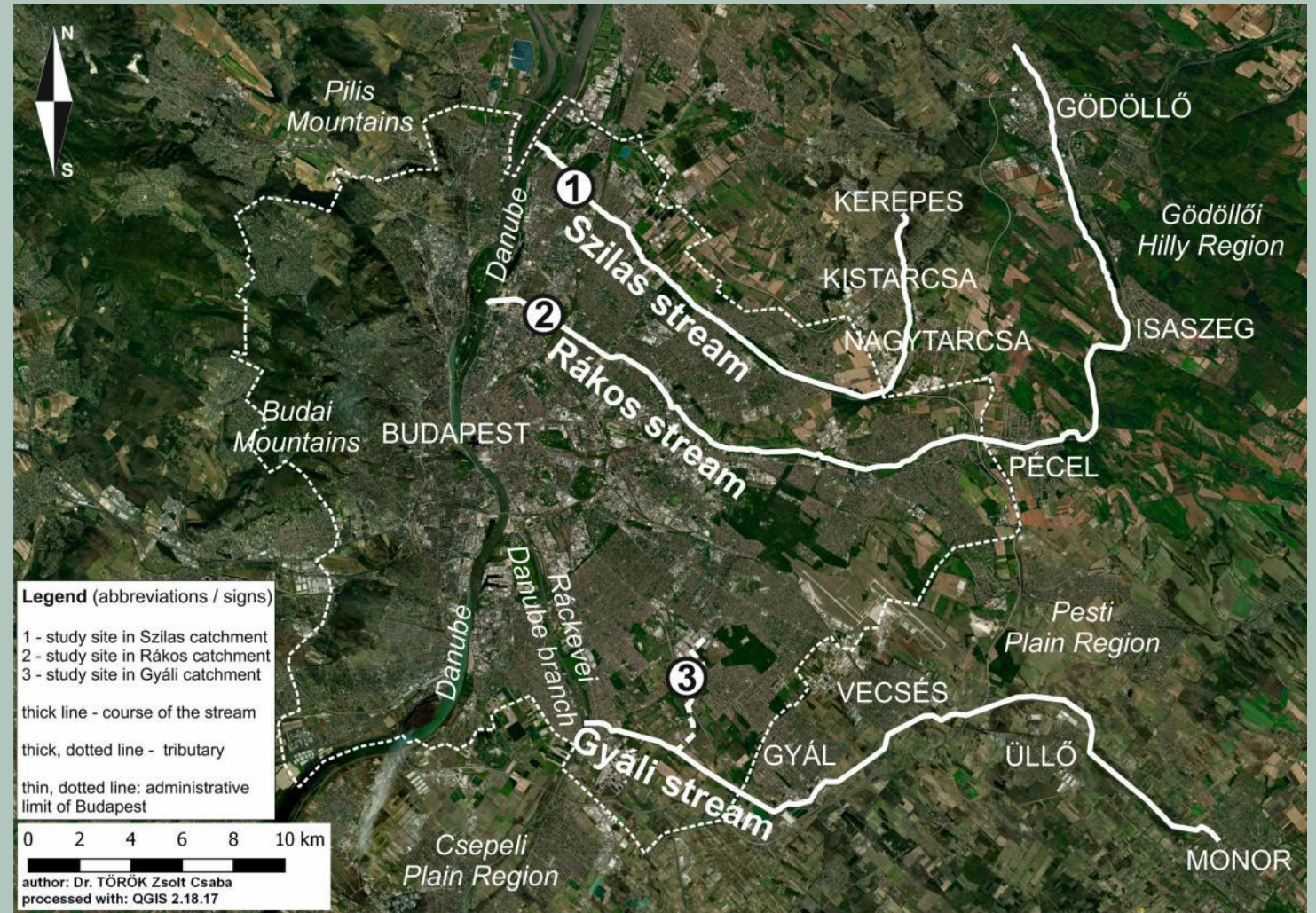
# HOW WAS IT DONE?

## 1. FIELD SURVEY

- ✓ Szilas Stream
- ✓ Rákos Stream
- ✓ Gyáli Stream

## 2. DATA ANALYSES:

- ✓ Stream Habitat
- ✓ Aquatic Diversity
- ✓ Riparian Area



# HOW WAS IT DONE?

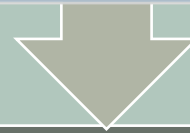
## DATA ANALYSES

### COMPARISON BETWEEN THE THREE STREAMS:

**Szilas Stream**

**Rákos Stream**

**Gyáli Stream**



Identefication of differences and similarities in biodiversity, bank stability, water quality, and vegetation composition.

GRADE	Good	Relatively Good	Proper	Bad
SCORE	75-100	50-75	25-50	0-25

# RESULTS

## STREAM HABITAT

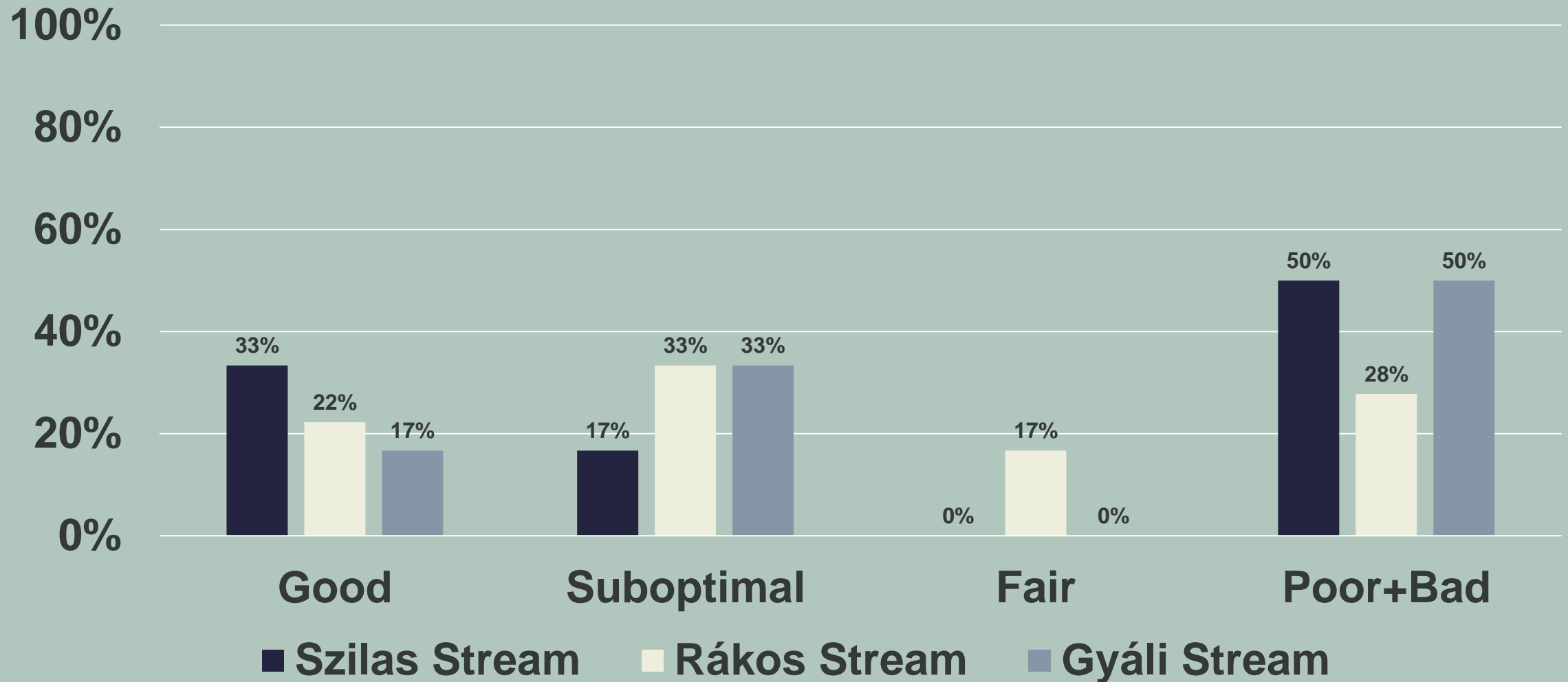
### CHANNEL AND BANK PROPERTIES:

- **Narrow channels (1-2 meters wide).**
- **Average water depth: 35 cm.**
- **Reduced water levels and low flow.**
- **High water transparency with some greenish tint due to algae presence.**

### COMPLICATIONS OF LOW DEPTH & FLOW:

- **High Water Temperature**
- **Reduced Dissolved Oxygen**
- **Increased Sedimentation**
- **Structural Changes**

# STREAM HABITAT



# AQUATIC DIVERSITY



Algae is present in all three streams.



Emergent plants found in Rákos and Gyáli streams.

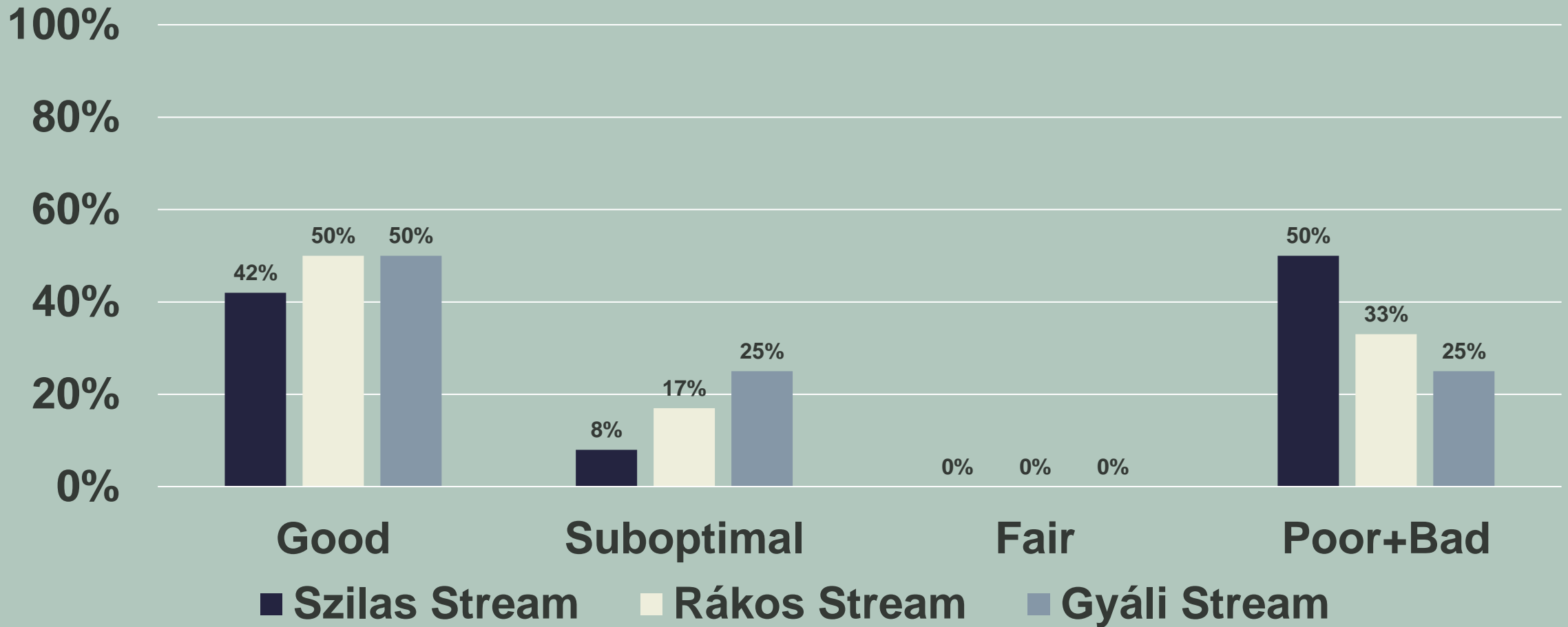


Free-floating, submerged, and rooted floating plants are absent.

## Importance of Aquatic Plants:

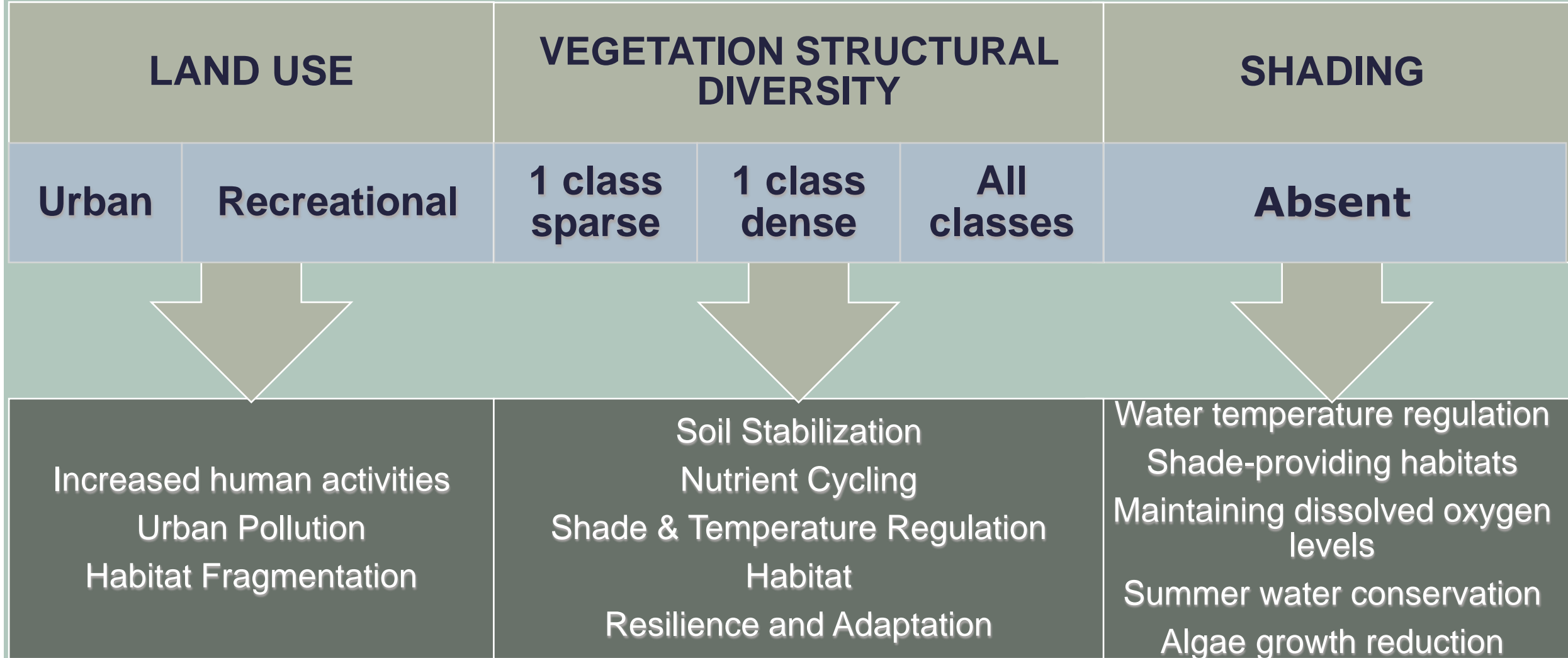
- Absorption of excess nutrients
- Aquatic Habitat
- Sediment stabilisation
- Maintenance of proper oxygen levels
- Erosion protection

# AQUATIC DIVERSITY

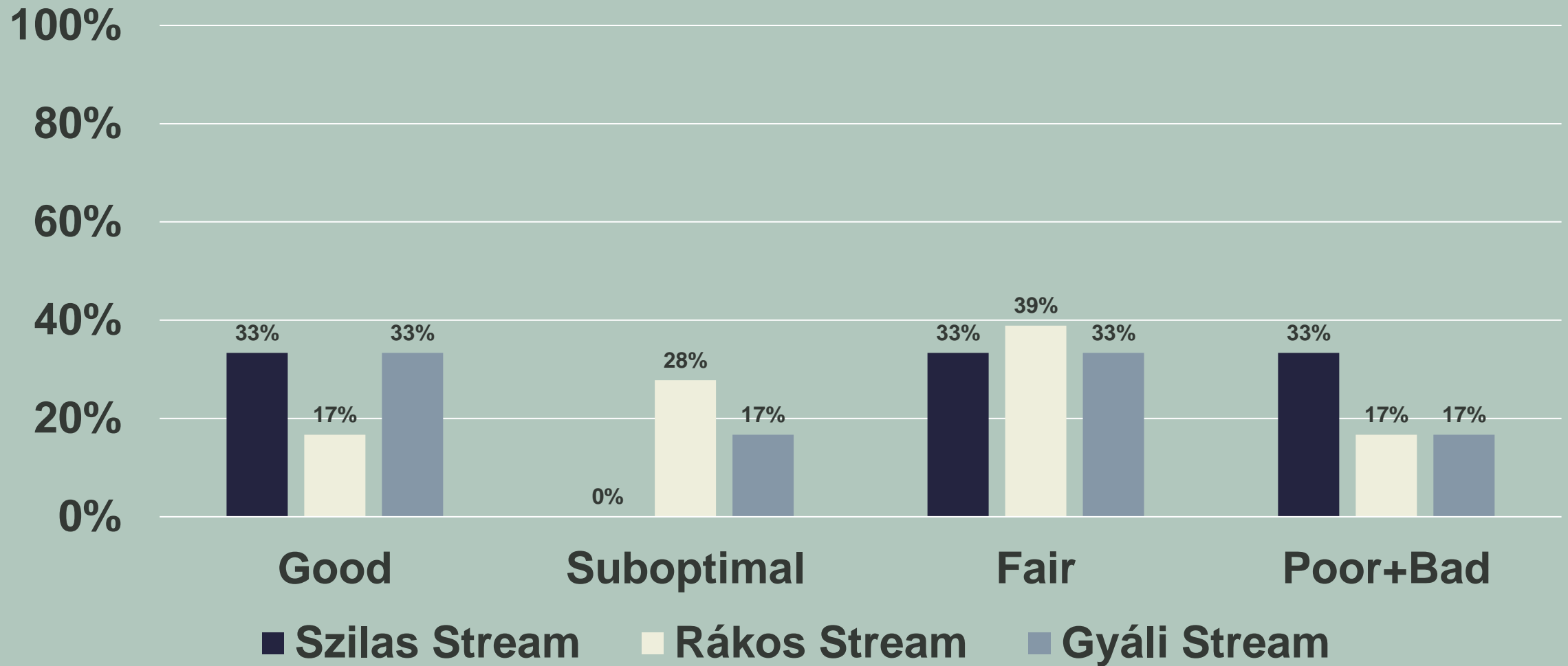




# RIPARIAN AREA



# RIPARIAN AREA



# CONCLUSIONS



**Szilas Stream**

**PROPER**



**Rákos Stream**

**RELATIVELY  
GOOD**

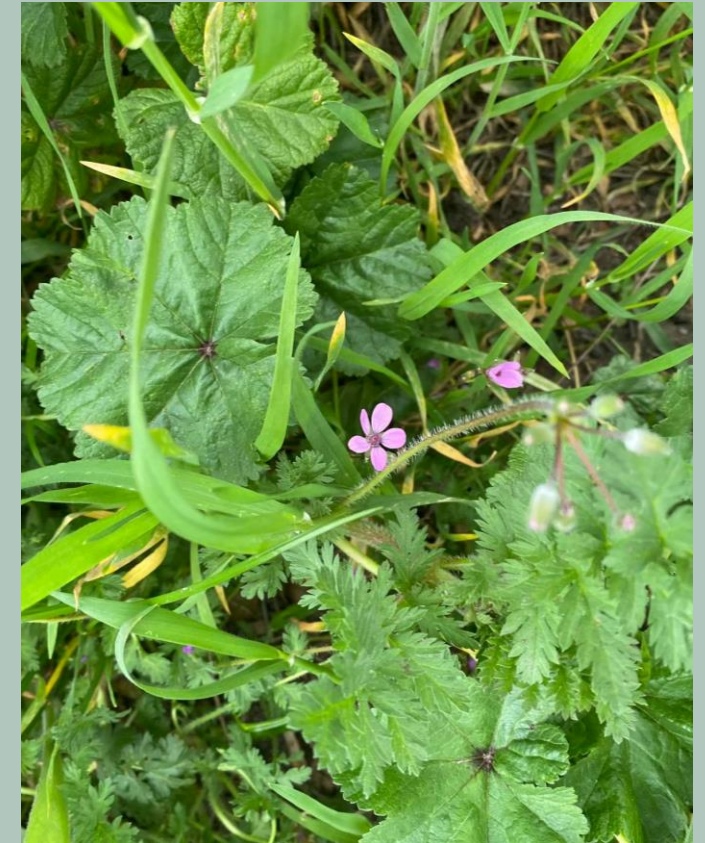


**Gyáli Stream**

**RELATIVELY  
GOOD**

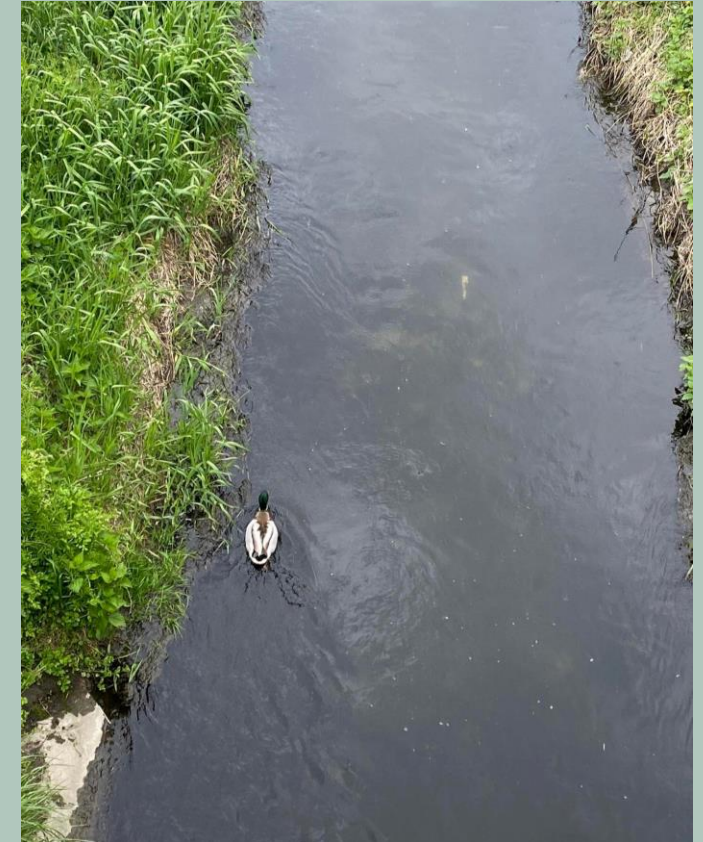
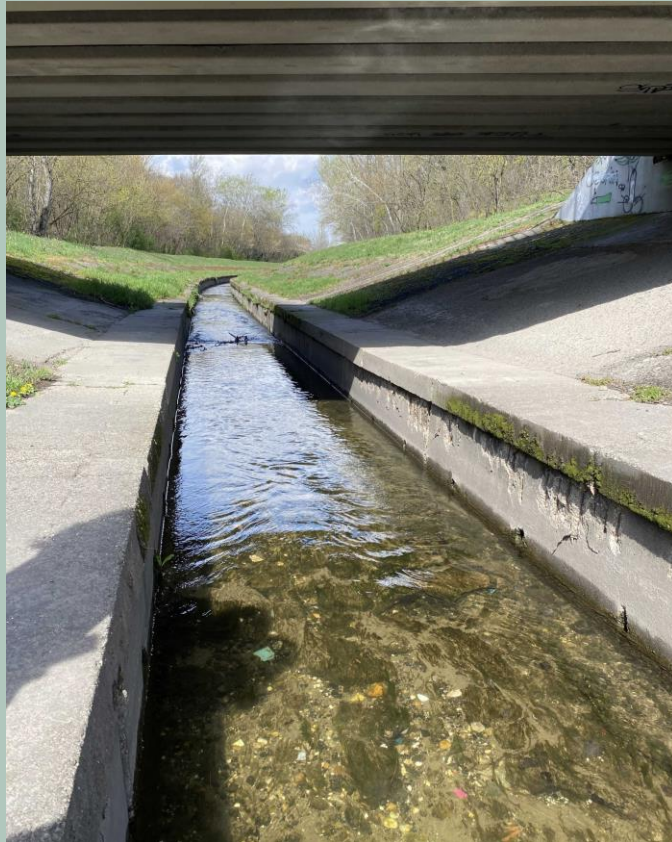
# WHAT CAN BE DONE?

**PROMOTE** native vegetation to enhance riparian health



# WHAT CAN BE DONE?

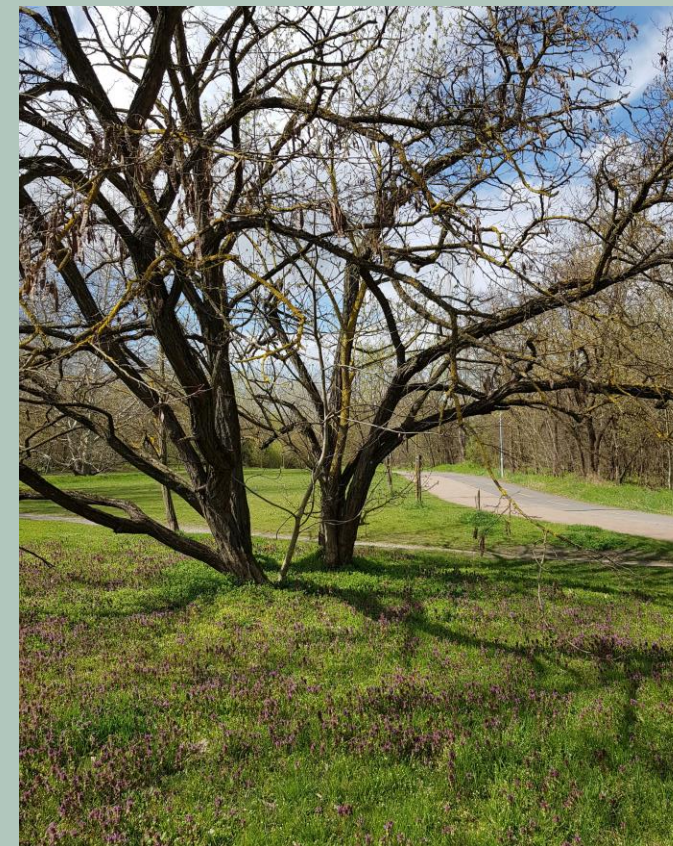
**PRIORITISE** restoration efforts in degraded riparian areas



# WHAT CAN BE DONE?

**EXPAND**

**riparian vegetation** buffers for improved water protection



# WHAT CAN BE DONE?

**MINIMIZE**

**disturbances** in sensitive riparian habitats





# THANK YOU FOR YOUR ATTENTION!

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