

# Water & Watersheds

George Schuler

The Nature Conservancy

January 18, 2023

The Nature  
Conservancy





# Water is Life



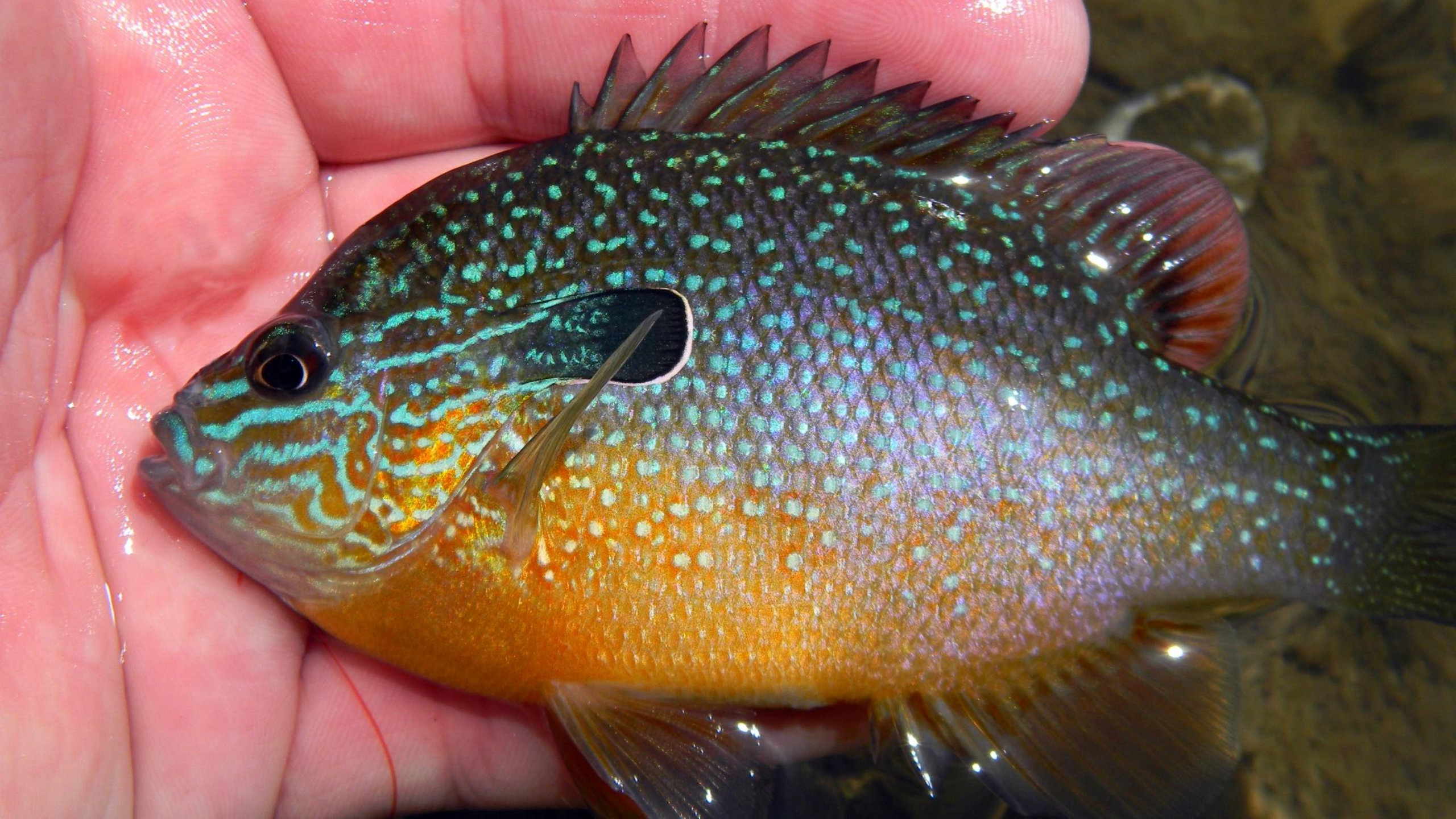




















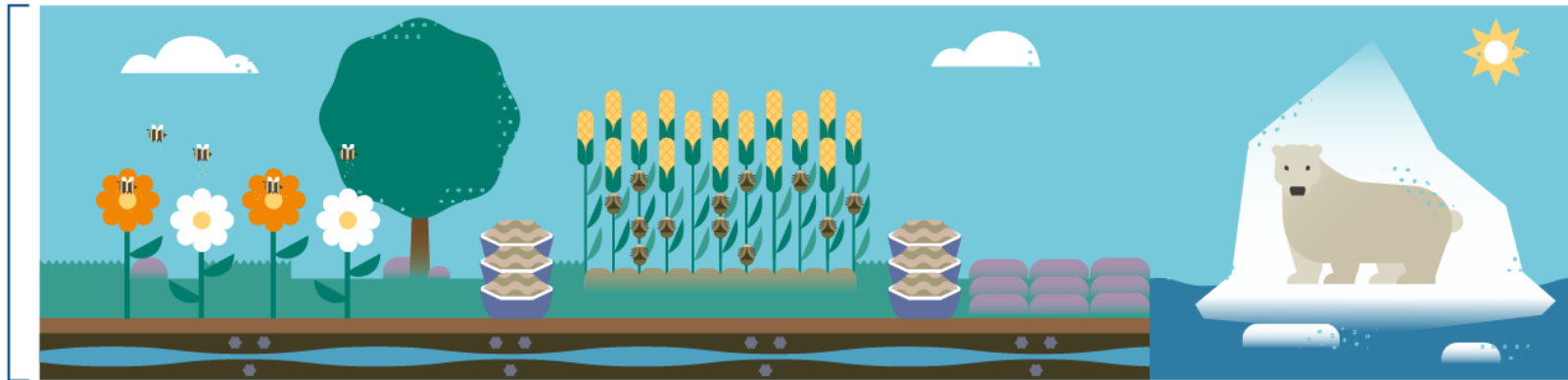


## Provisioning services



- ◆ Crops, soil fertility
- ◆ Livestock
- ◆ Timber
- ◆ Fiber
- ◆ Wild foods (e.g. mushrooms, berries, etc.)
- ◆ Fisheries
- ◆ Genetic resources, medicines
- ◆ Fresh water
- ◆ Clean air

## Regulating services



- ◆ Pollination
- ◆ Temperature regulation
- ◆ Carbon sequestration and storage
- ◆ Pest regulation
- ◆ Erosion regulation
- ◆ Flood regulation
- ◆ Water purification
- ◆ Air purification

## Cultural services



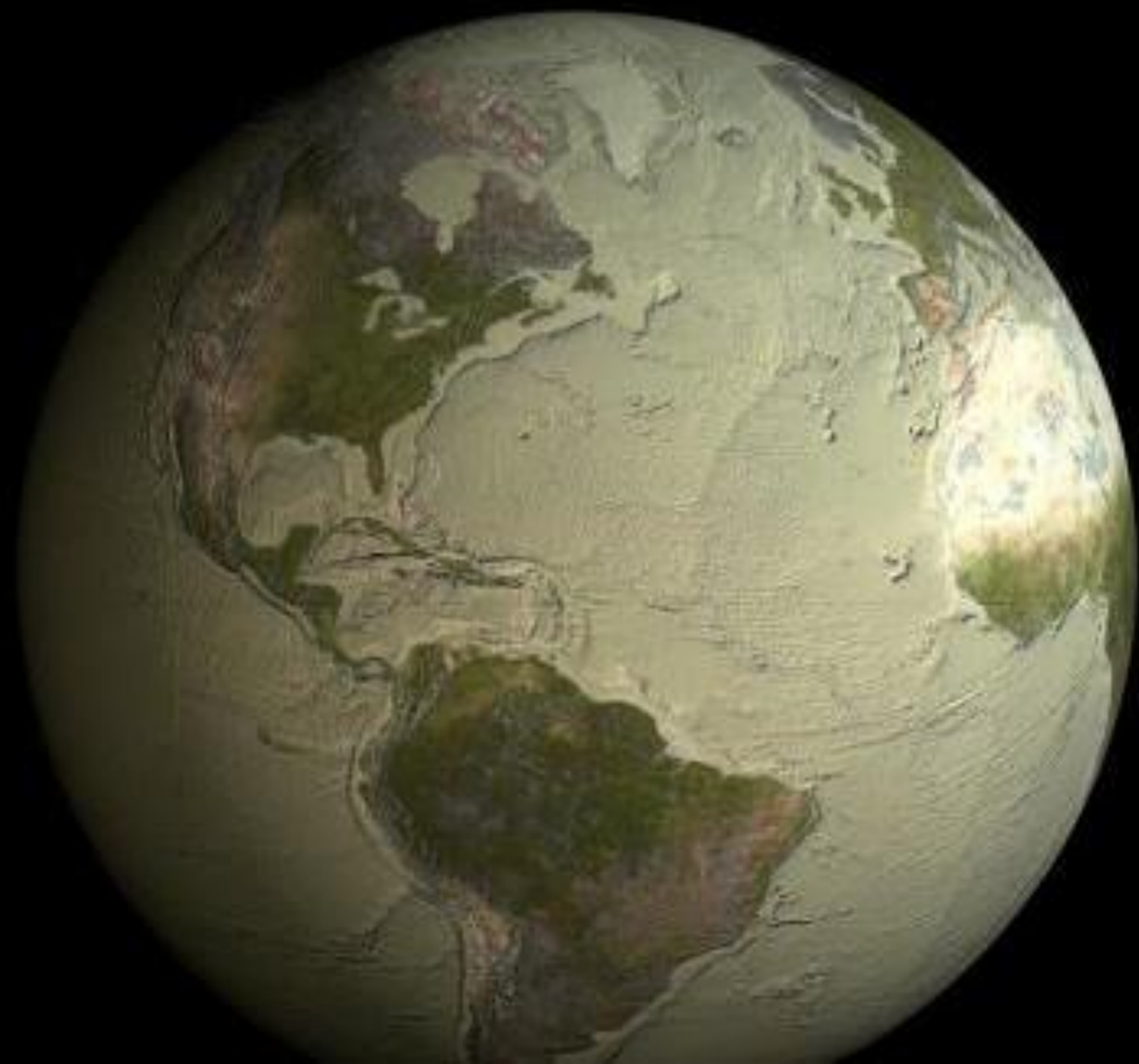
- ◆ Recreation (e.g. swimming, hiking, skiing etc.)
- ◆ Aesthetic (e.g. sceneries)
- ◆ Cultural identity



# Water is Unique

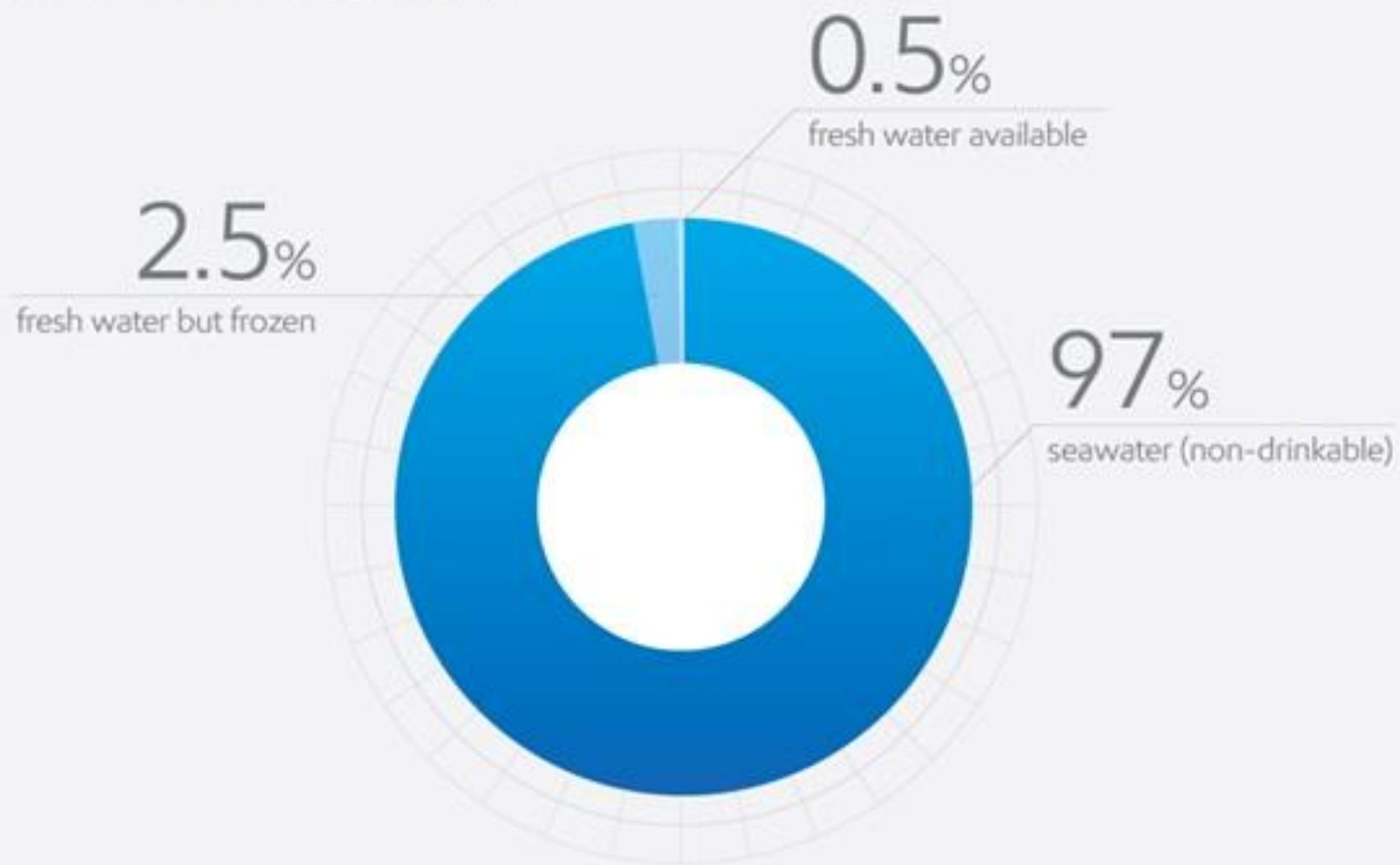




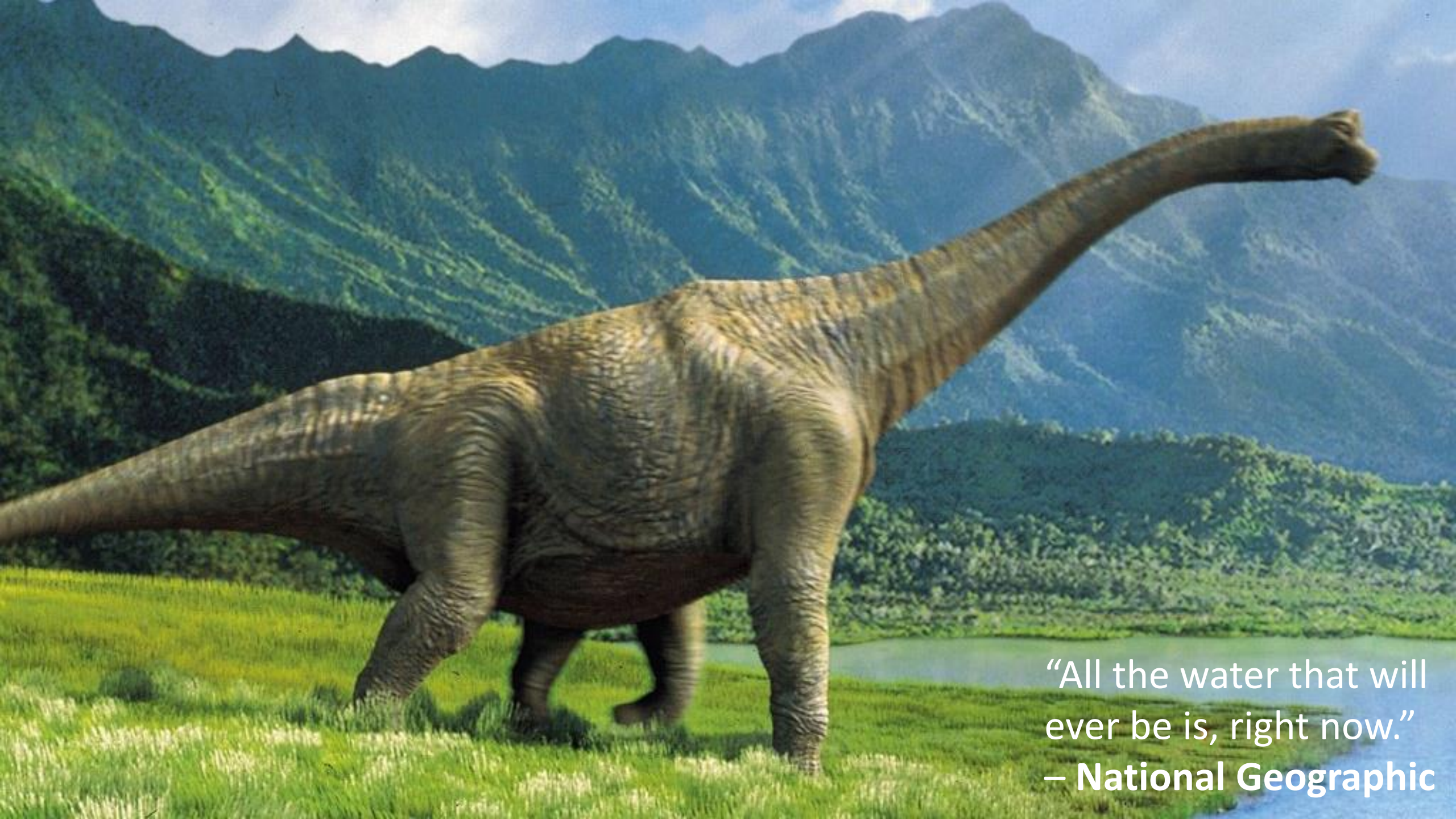




## Distribution of the world's water



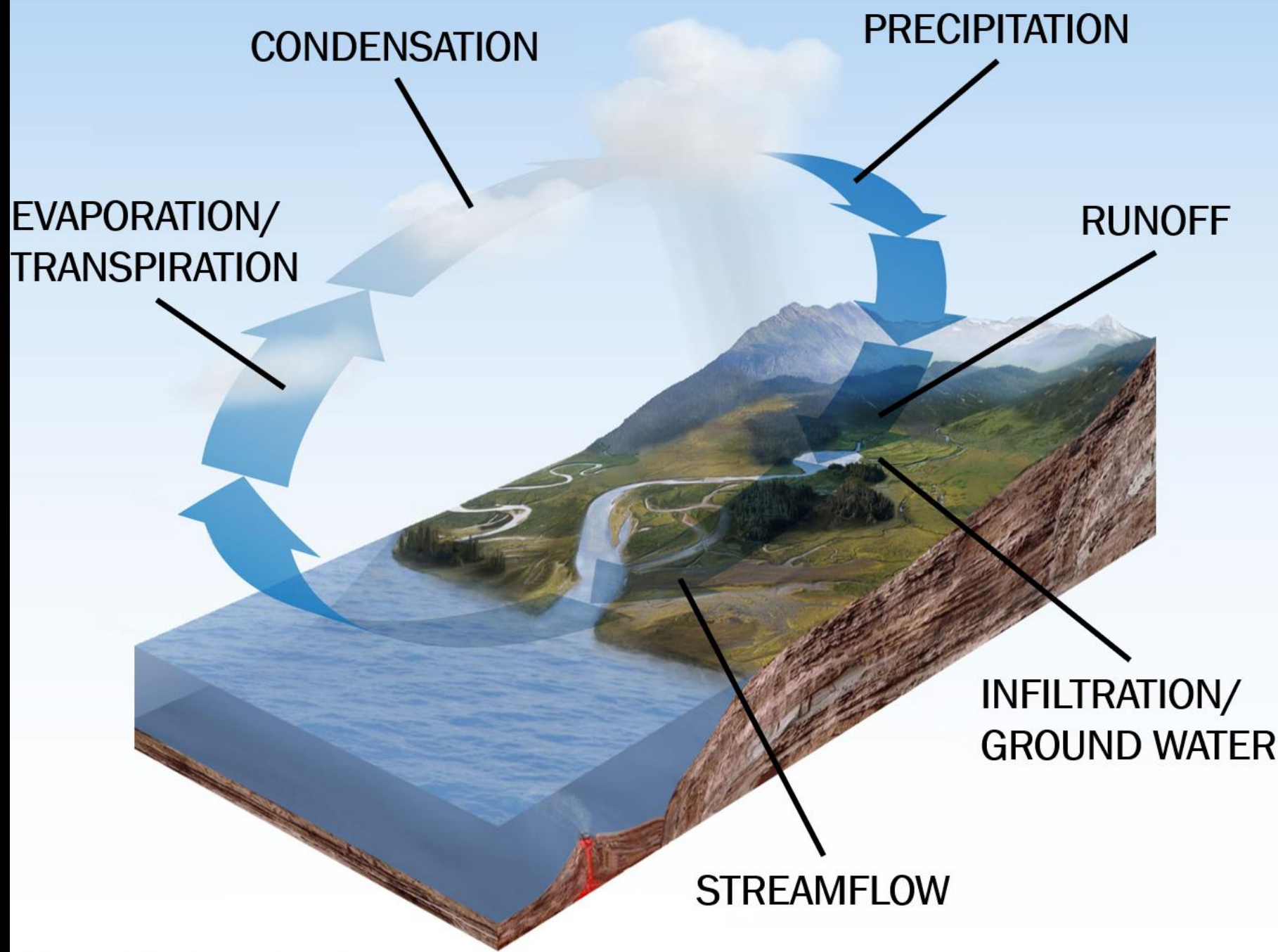




“All the water that will ever be is, right now.”  
– National Geographic



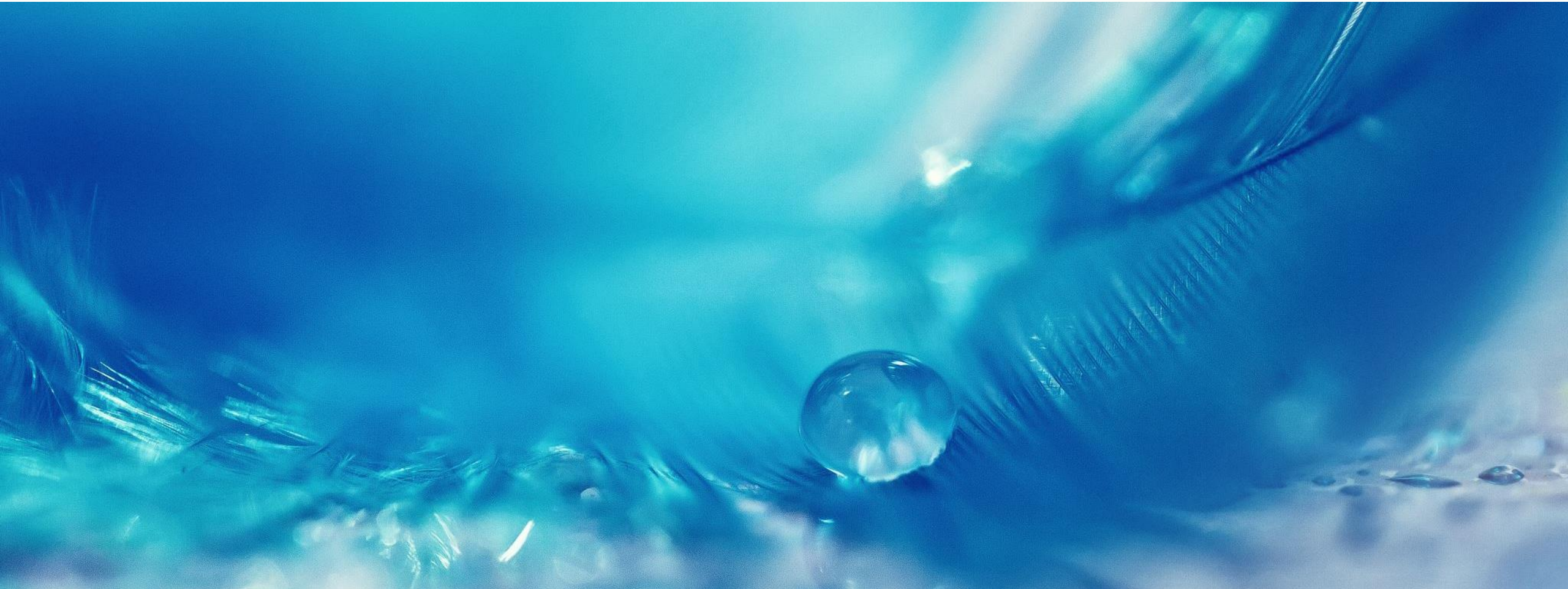
“The water that you touch is the last of what has passed and the first of that which comes.”  
— Leonardo da Vinci



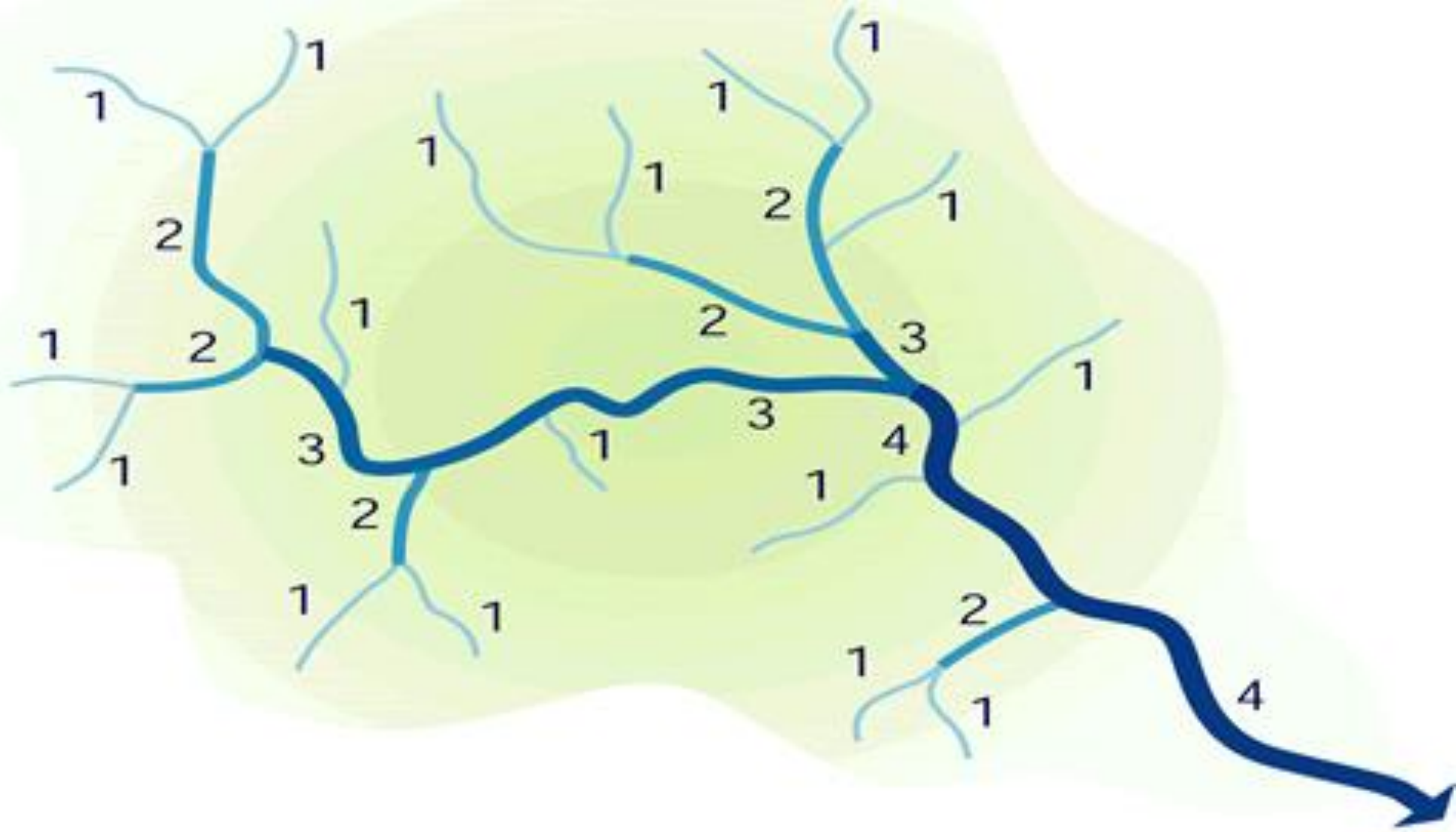
**The Water Cycle**



# Water is a System

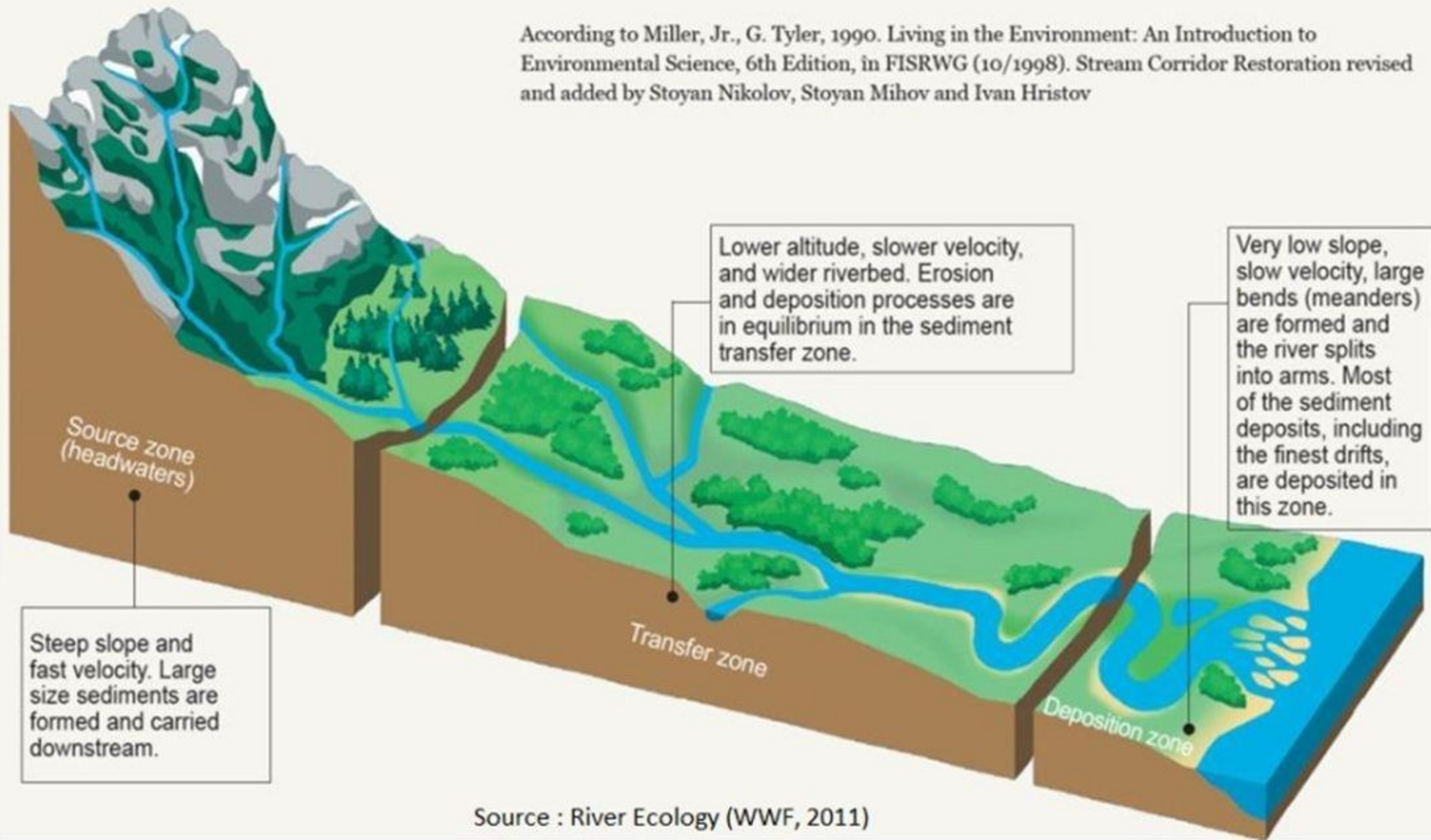






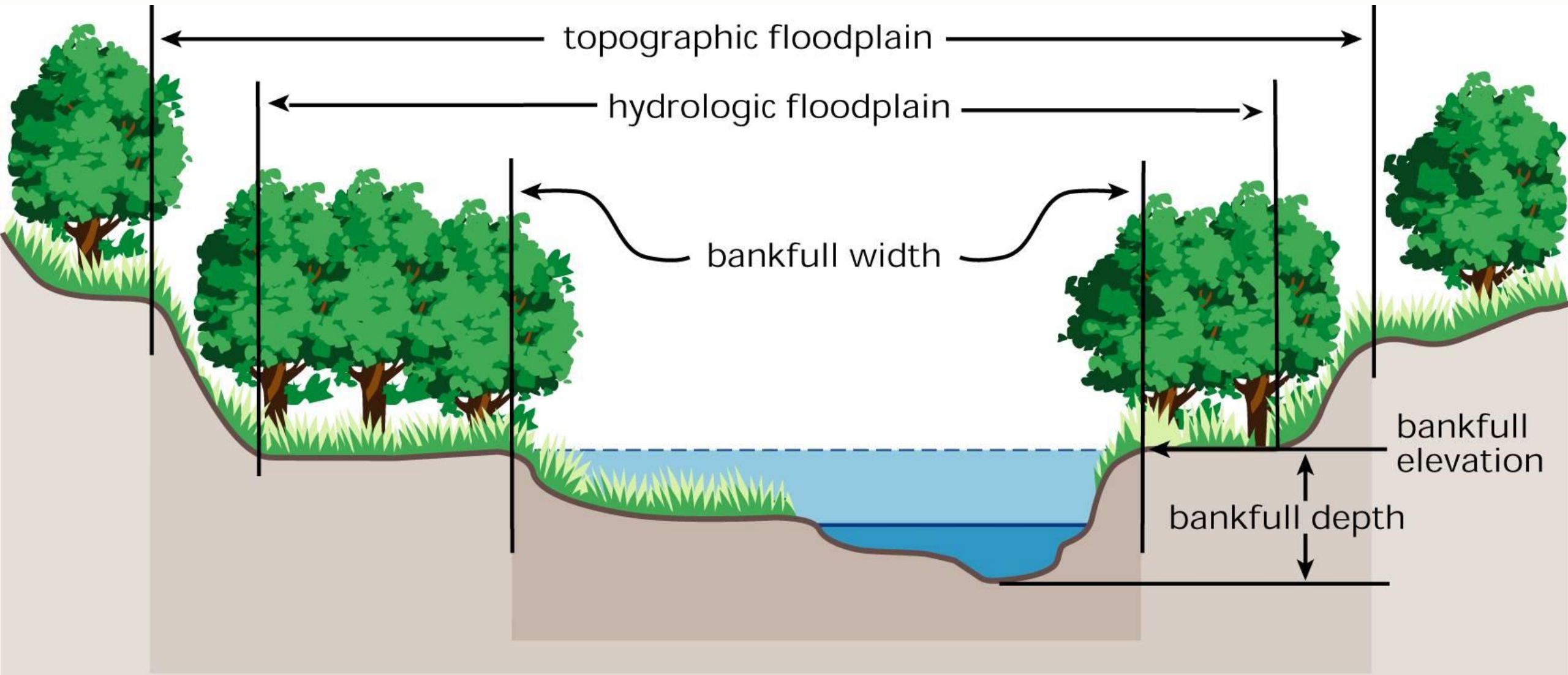


According to Miller, Jr., G. Tyler, 1990. Living in the Environment: An Introduction to Environmental Science, 6th Edition, in FISRWG (10/1998). Stream Corridor Restoration revised and added by Stoyan Nikolov, Stoyan Mihov and Ivan Hristov



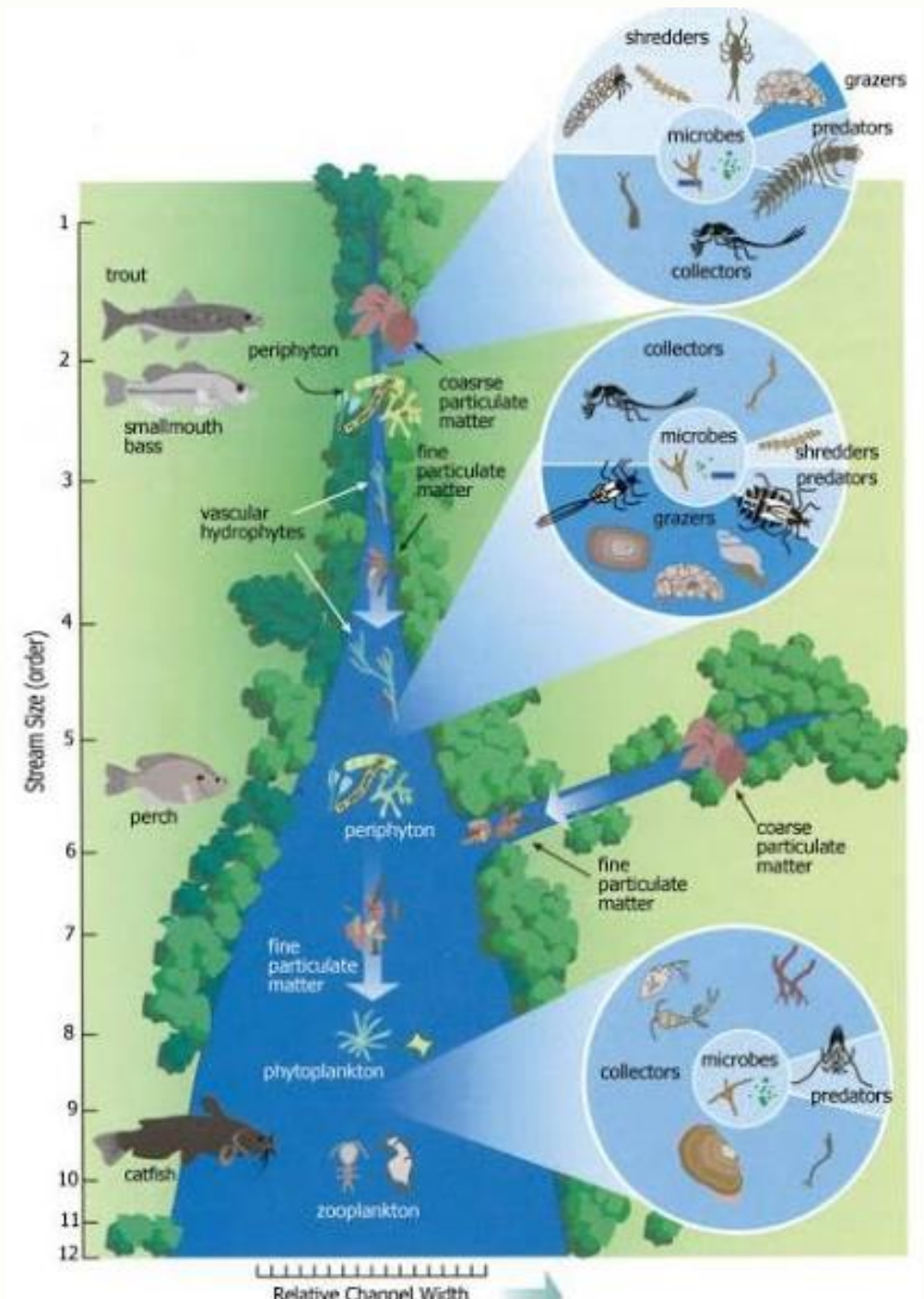
Source : River Ecology (WWF, 2011)





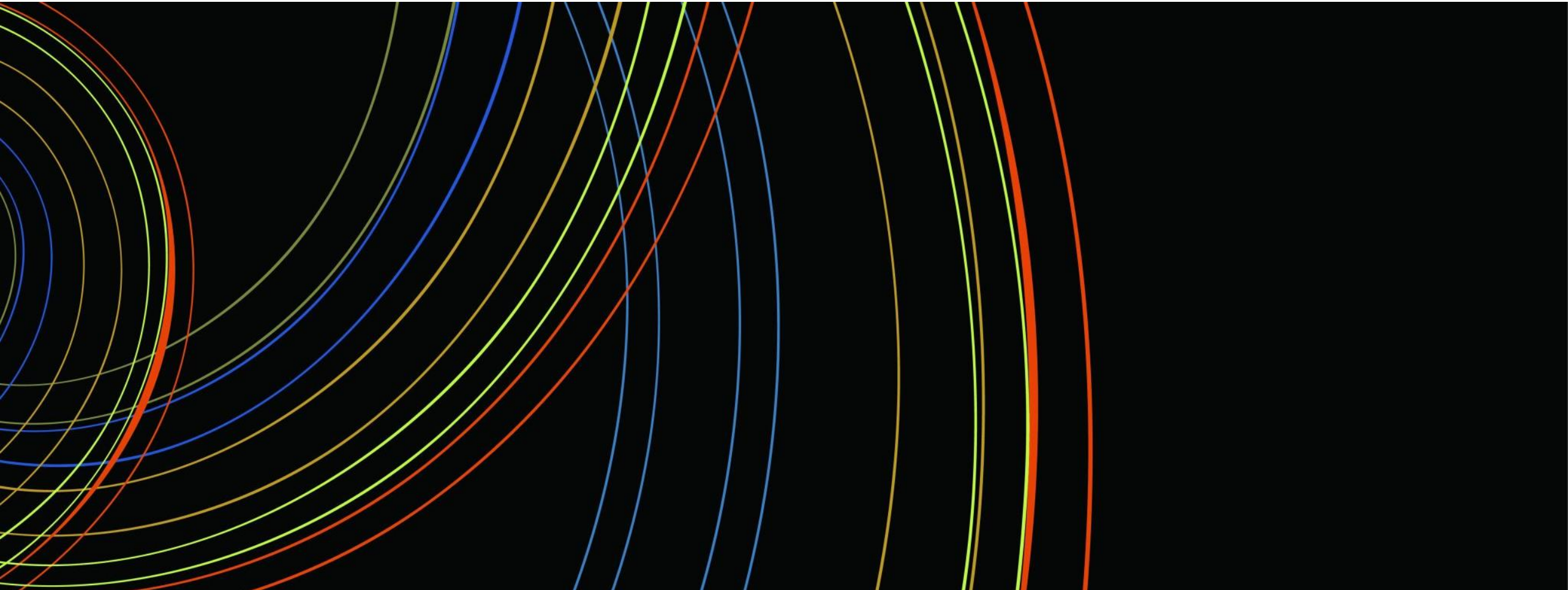


The entire river system continuously integrates physical gradients and geology as the river flows from headwaters to mouth.





# Water is Challenging



















BREWERY  
**OMMEGANG**  
BELGIAN-STYLE ALES



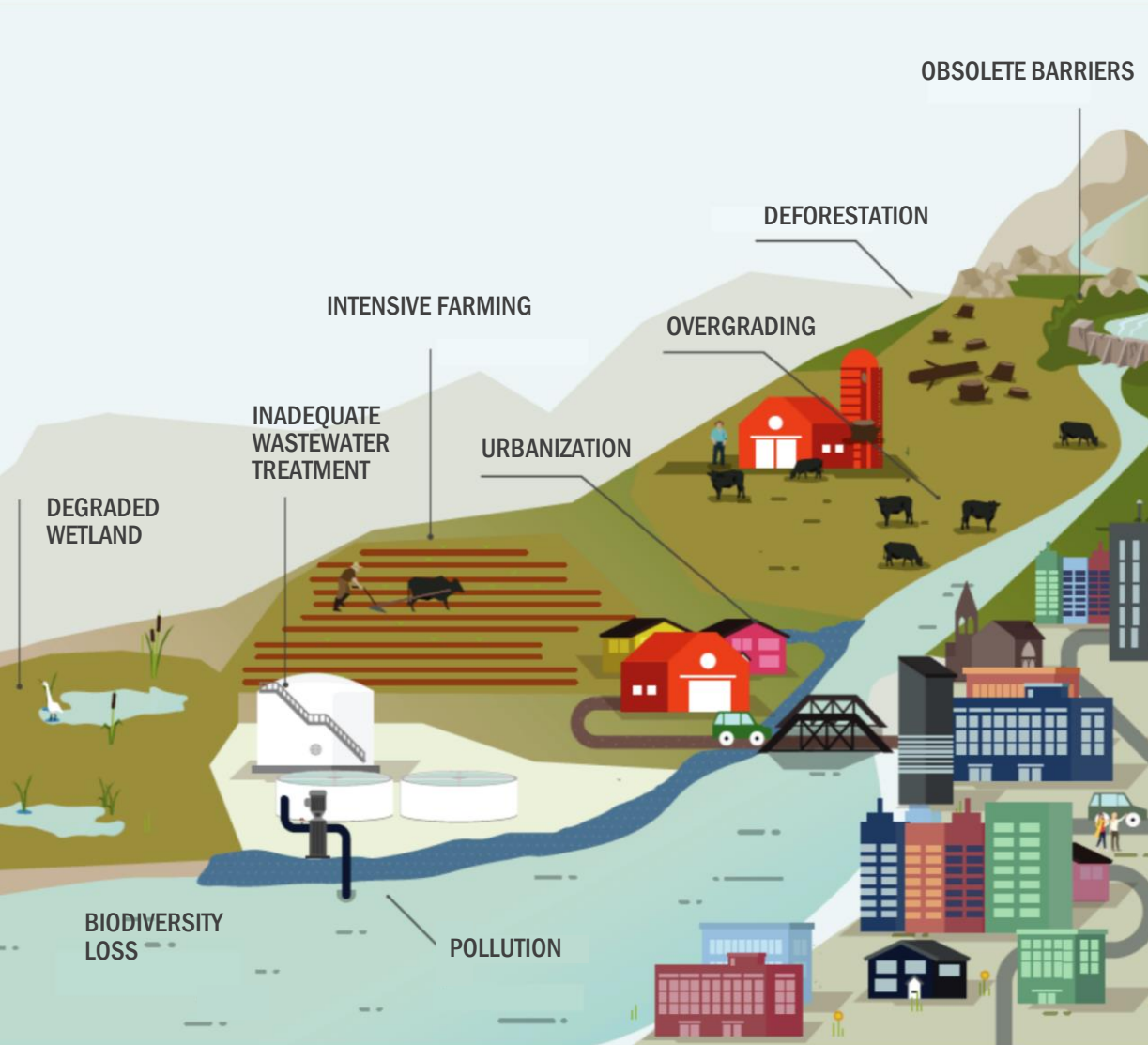








# The Challenges



# What We Strive For



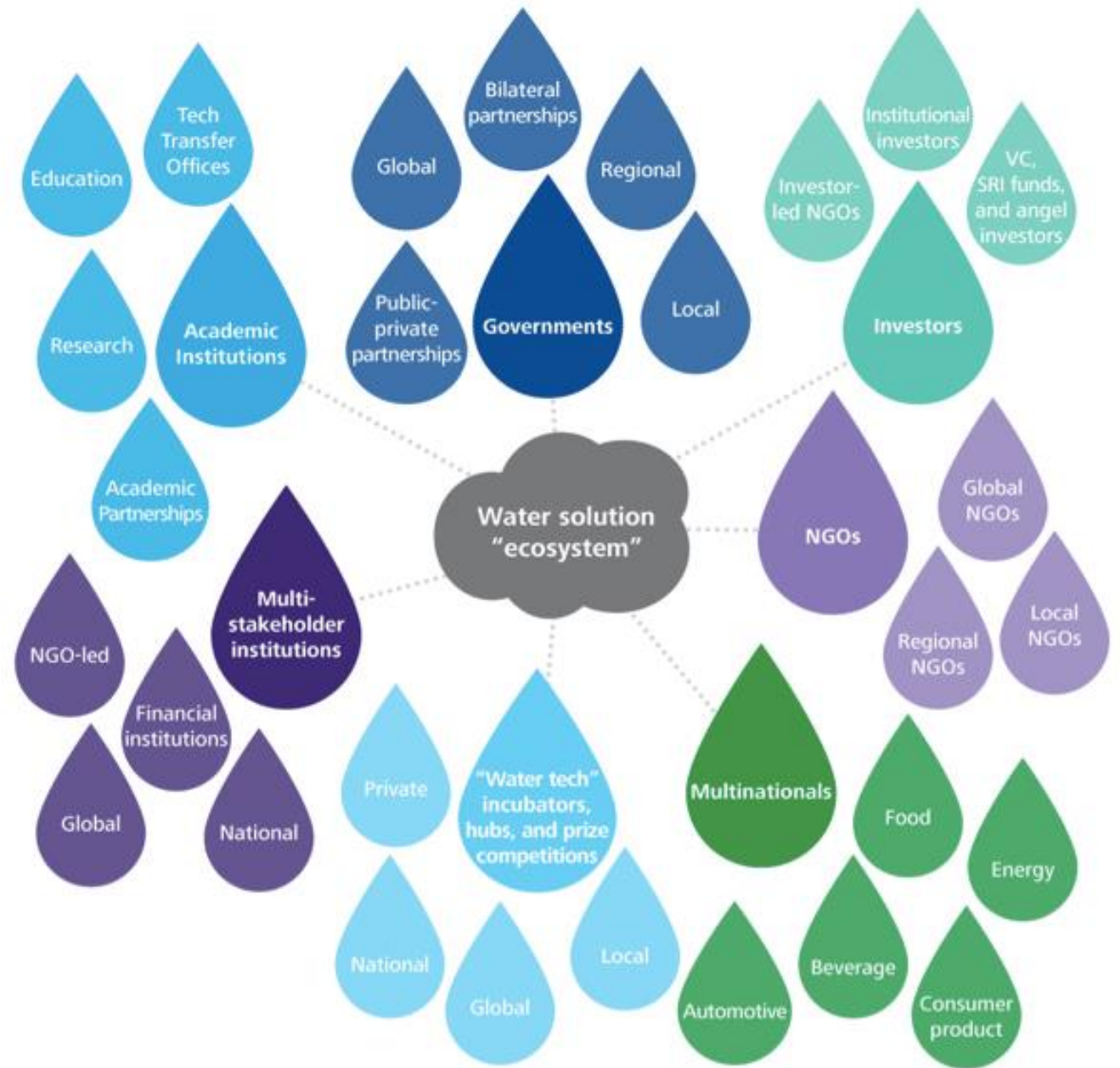


# People

Equally complex are the human settings for water.

A plethora of silos associated with governances, policies, regulations representing the interests of local, state, indigenous, and federal stakeholders.

Figure 1. The ecosystem surrounding water as a wicked problem

















# Water Has Consequences









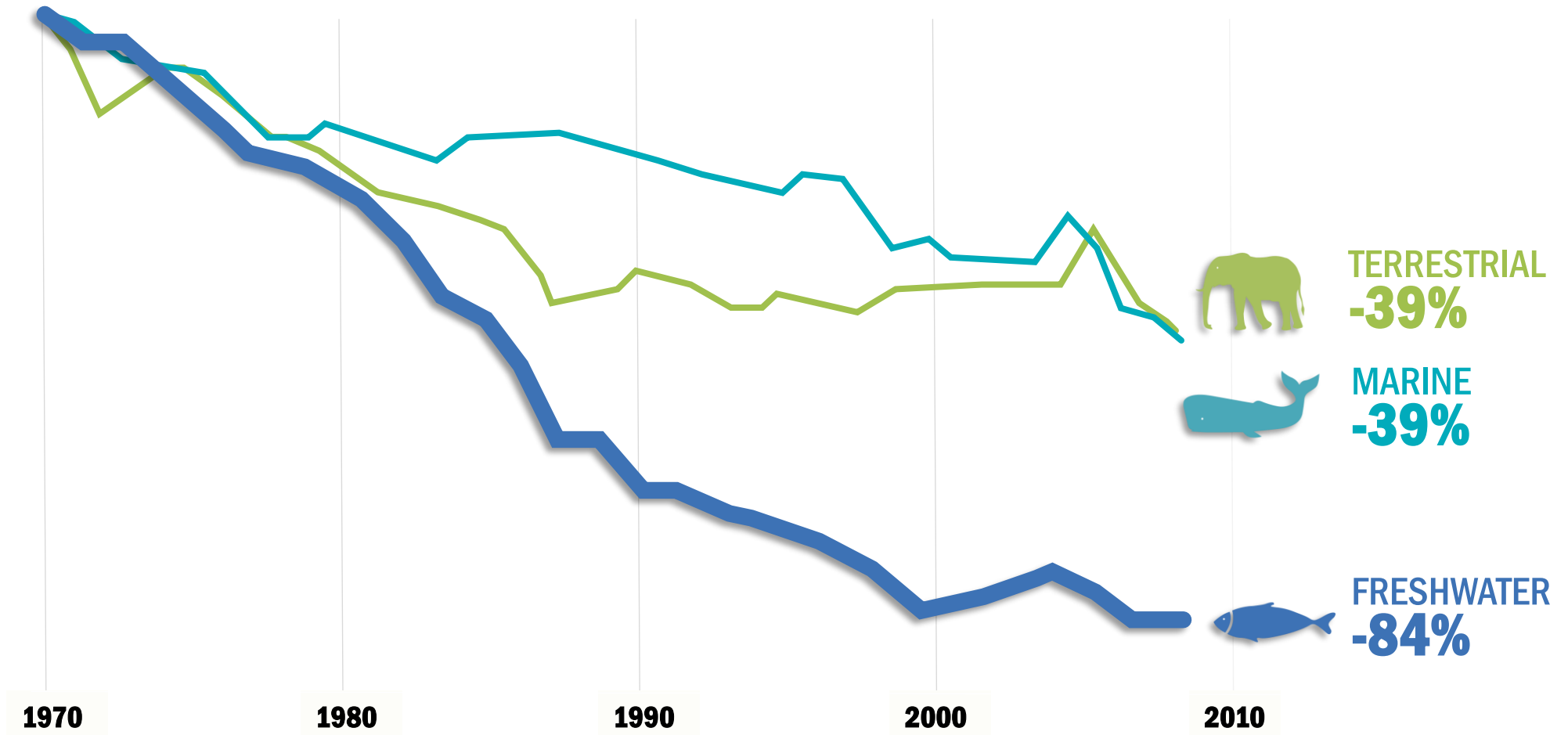








# Consequences



Freshwater Species Decline: 1970-2010



# New York's



**80%**

Waterbodies do not meet standards for nitrogen and phosphorous.

**9/10**

Natural disasters are water related

**20%\***

In an average year, water bodies do not have sufficient water for people and nature at key times of the year.



# The Challenges



# What We Strive For







**Thank You!**