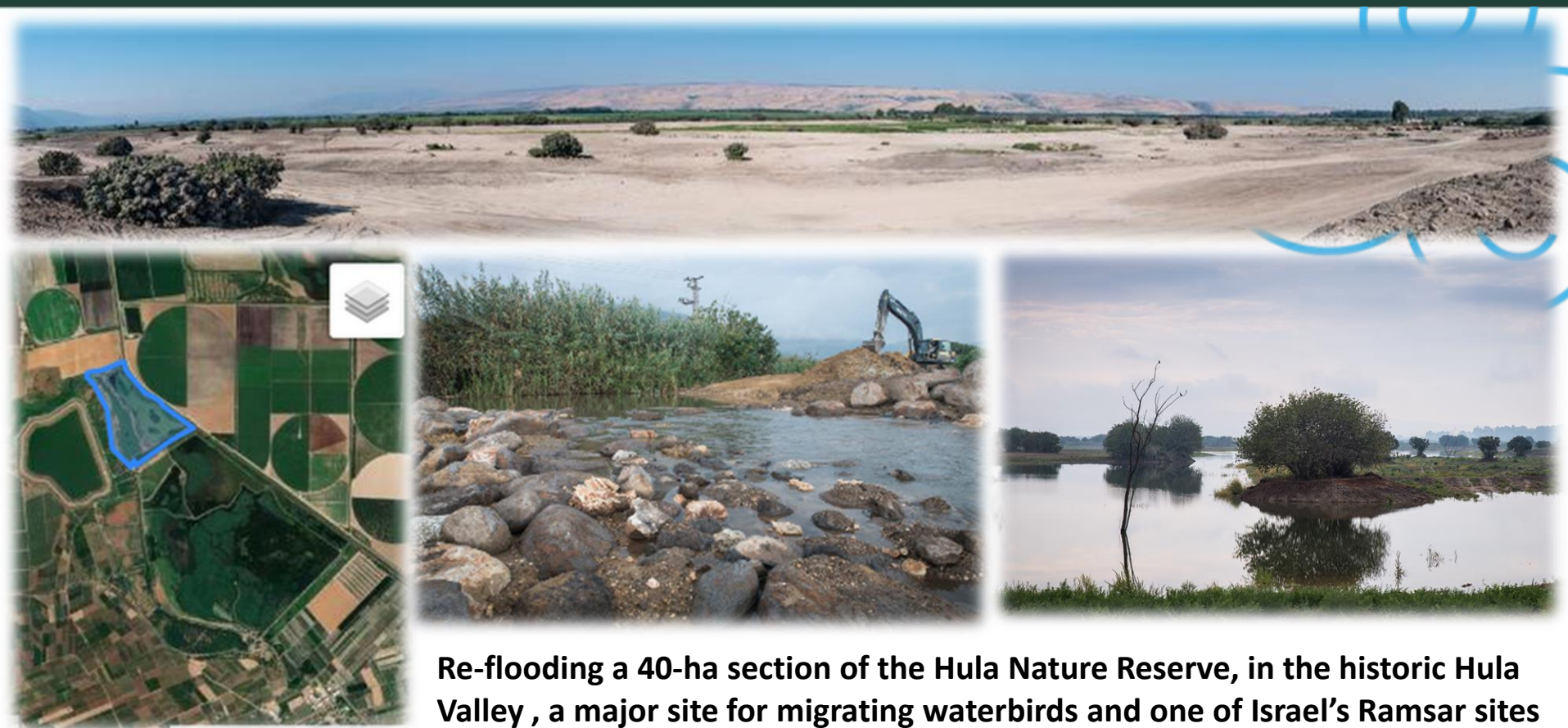


# Aquatic Ecosystems in Israel: Major Threats and Actions for Conservation and Restoration

Dana Milstein and Simon Nemptzov



## Challenges:

- ❖ **Water exploitation.** Nature was considered only as “source for water” (until 2004)
- ❖ **Pollution:** graduate reduction in loads from point source; addressing non-point sources.
- ❖ **invasive species.**
- ❖ **Climate change,** decline in spring discharge and stream flows, mainly in the north district
- ❖ **Cooperative management:** the responsibility is spread among a number of agencies.

## Positive trends:

- ❖ **Increase in cooperation** between different agencies as well as Public Organizations and NGOs
- ❖ **managing water on a river basin scale**
- ❖ **Planning National level**
- ❖ **Long term vision (strategic planning)**

# The INPA's main activities

In 2004, nature was recognized as a legitimate consumer of water (not just a source of supply). Accordingly, activity was begun to **restore natural flow** from sources that were being exploited and to **restore natural habitats**.

The INPA is responsible for implementation.



Nahal Kziv



# The INPA's main activities

## Restoration of aquatic ecosystems



Restoration of the stream course and fish ponds of Naaman stream near the Ein Afek Nature Reserve (a Ramsar site)

# The INPA's main activities

## Control of invasive and over-abundant species

Managing the Lake Kinneret (Sea of Galilee) with a high water-level fluctuations enabled the takeover of Tamarisk trees along the shore resulted in massive loss of biodiversity.

Pictured is **vegetation restoration management** between the Jordan River, the Sea of Galilee and the Zachi Stream



# The INPA's main activities

**Conserving biodiversity with an emphasis on protected and rare species**

Updating the List of Protected Species (2020): Adding 13 freshwater fish Species

- In situ conservation of endangered species
- Long-term nationwide monitoring of selected species: freshwater fish, soft-shell turtles, sea turtles, otters, amphibians.



## Stream Types of Israel

- Short Report and Profiles -



Final ver. July 2020

Rivers of Israel (Figure 1).



2020

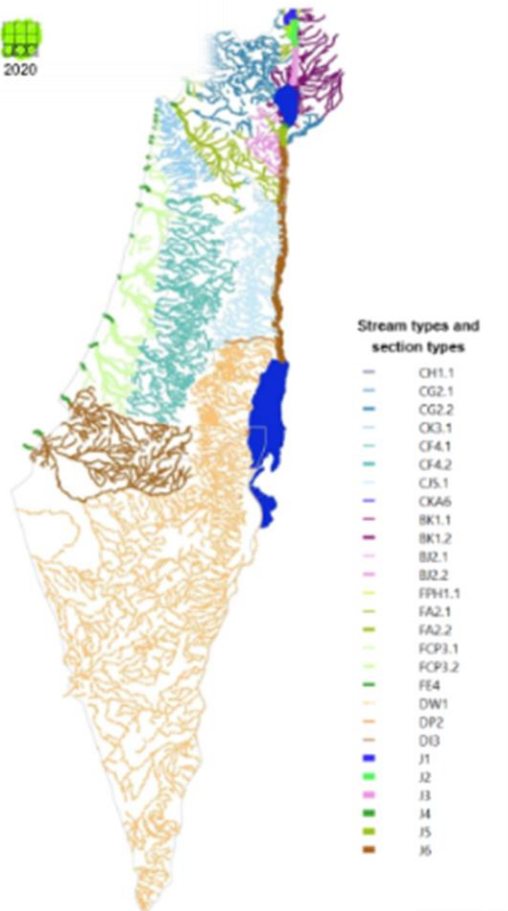


Figure 1: Stream type map of Israel.

# Additional national activity

## Israel National Center for Aquatic Ecology

- Established in 2015 to implement long-term nationwide monitoring of streams (assessment of stream ecological status/health)

- EU WFD Methodology

In addition:

- Expanding taxonomic knowledge on local species
- Initiate collaboration in Israel and abroad
- Conduct research in applied ecology
- Collection, management and accessibility of biological knowledge
- Advise stakeholders and decision-makers



## Rivers and Basins Information center

Established to address the need for consolidating knowledge, mapping gaps and creating a common language for stakeholders, professional community and decision-makers

### Primary focus:

- Flood risk management
- River Restoration
- Maintaining land and water resources
- Maintaining biological diversity
- Sustainable development of land, water, and agricultural resources

### activities:

Providing stakeholders with ongoing access to multidisciplinary knowledge (ecology, hydrology, planning, resource management, engineering, drainage, economics, public participation, etc.)



## worse maritime pollution in decades

**170 km of Israeli coastline  
polluted with tar, possibly  
from an oil tanker**



**Thousands of  
volunteers joined  
major cleaning efforts**



**A dead sea  
turtle covered  
in tar**

## **2021: national strategic plan for the maintenance of biodiversity**

\* defines targets for aquatic ecosystem statutory protection and ecological restoration, species conservation etc.

## **2021: Israel's Streams under Climate Change: effects and recommendation for action.**

\* collect and integrate data about climate change scenario's, human activity in light of climate change in order to assess the impact on streams and rivers.

\* short-term (- 20 years) and long-term (50 years) goals

- \* recommendation should include actions for mitigation , adaptation, resistance, resilience

\* Creating a toolbox for decision makers, governmental agencies and other stakeholders