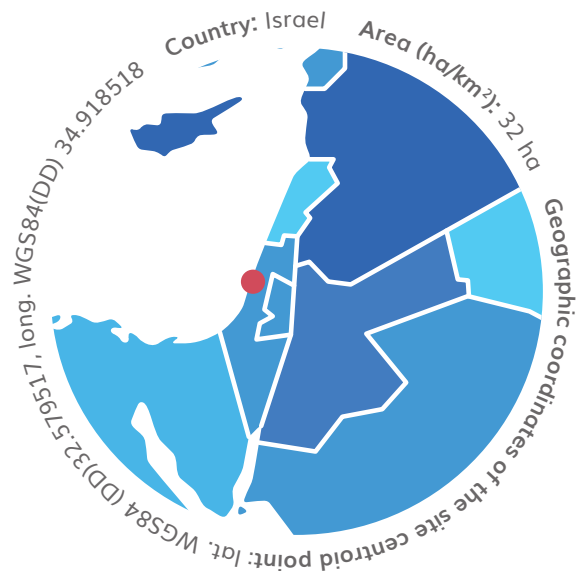


## Nahal Dalia (Difle)

### Pilot Fact Sheet



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### Ecosystem type

Estuary and coastal marsh










### Key habitats

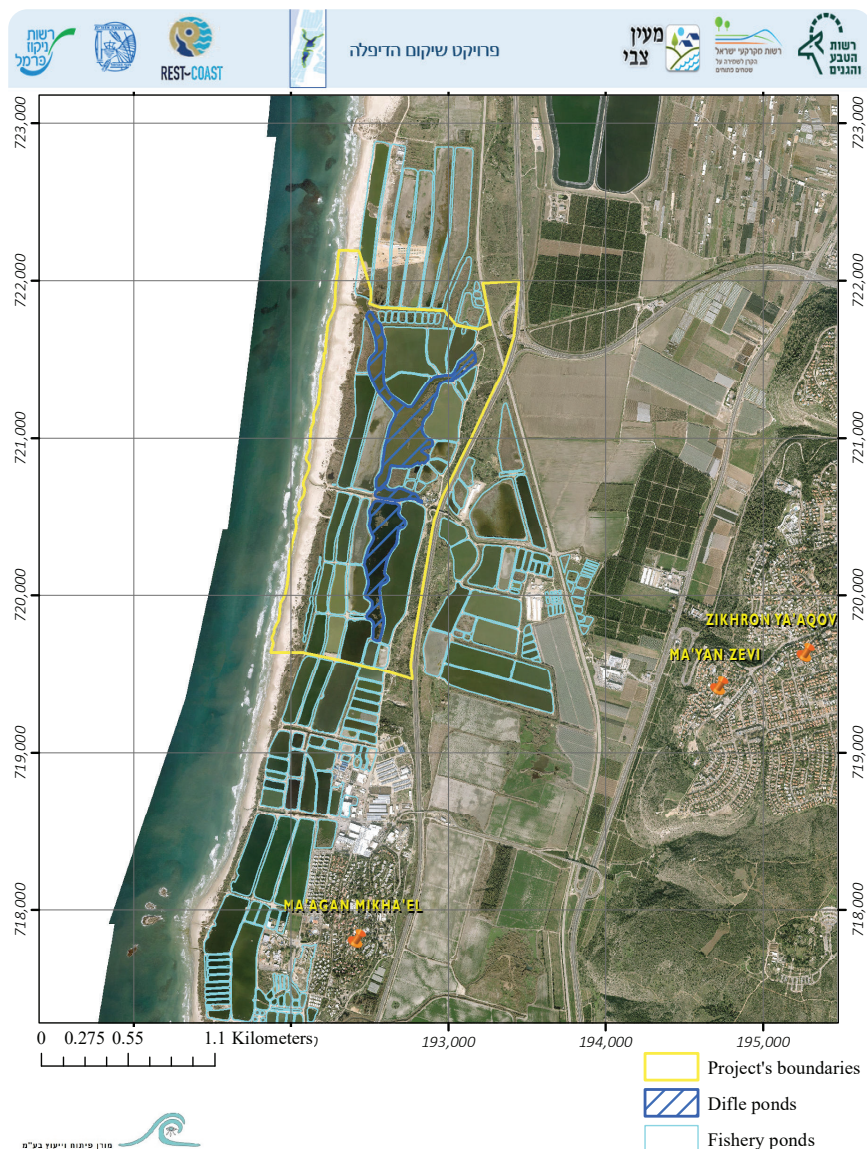
-  Estuary
-  Coastal salt marsh

### Taxonomic groups

-  Submerged and emerged plants
-  Macroinvertebrates
-  Fish
-  Reptiles
-  Mammals
-  Birds (breeding, wintering and migratory waterbirds)

### Key species

-  Ferruginous duck *Aythya nyroca*
-  Marbled duck *Marmaronetta angustirostris*
-  African softshell turtle *Trionyx triunguis*
-  European eel *Anguilla anguilla*
-  Flathead grey mullet *Mugil cephalus*
-  Iridescent toothcarp *Aphanius mento*
-  Jungle cat *Felis chaus*
-  Eurasian watermillfoil *Myriophyllum spicatum*
-  Slender seagrass *Cymodocea nodosa*



### Organisation responsible for the pilot

Israel Nature and Park Authority (INPA)

## Pressures, threats and issues

Since the 1980's Nahal Dalia's Biodiversity has been vastly degraded. Many species, such as the *Unio terminalis delicatus* and *Myriophyllum spicatum*, have gone extinct from their habitat. The main causes for biodiversity loss are the water regime alterations and river to sea connectivity due to the stream dams; followed by water pollution by fishery effluents discharged into the nature reserve.

**Factors beyond site level with an impact on the pilot:**

- The Governmental water authority encourages water utilities to increase water production (through abstraction and desalinization) in the region. Intensified groundwater abstraction in the area leads to reduced water level and salinization and thus negatively impacts the area's natural habitat.
- The governmental "Water Quality Reform in Fisheries" fails to consider the Nahal Dalia nature reserve as a protected area and ignored its ecologic needs.

## Expected impact of the project

**Potential NbS building blocks and Ecosystem services delivered by the pilot site ecosystems:**

### The NbS building blocks are

- Dam removal and restoration of waterflows
- Geomorphologic restoration
- Fishpond effluents treatment and reduced water abstraction
- Macrophytes and sea grass rejuvenation to promote carbon sequestering and natural water purification.

### Ecosystem services delivered by the pilot site ecosystems

- Provisioning services:** fresh water for irrigation and fisheries
- Supporting services:** improved water quality, increased biodiversity through habitat restoration, nutrient cycling, carbon sequestration, water purification

- Cultural services:** tourism, recreation, outdoor activity, inspiration, science and education.



European eel *Anguilla anguilla*



Iridescent toothcarp *Aphanius mento*

## Conservation and restoration goals

- Conservation of biodiversity
- Restoration of key habitats
- Improvement of water quality and increased quantity

## What are the major risks that the project will need to address?

**Major risks the project will need to address:**

- Flooding
- Pollution by fishponds
- Exceeded pumping of the springs

## Stakeholders

### Key decision makers

- Israel National Park Authority (INPA)
- Fishery landowners (Ma'ayan Tzvi)
- Hof Ha'Carmel Municipality
- Local water association
- Local drainage authority



Softshell turtle *Trionyx triunguis*



The estuary and fishing ponds



Ferruginous duck *Aythya nyroca*



Marbled duck *Marmaronetta angustirostris*



Jungle cat *Felis chaus*

## Relevant policy settings

- Nature's right for water principle is recognised in primary legislation
- Fishery reform postulates that fisheries must treat their effluents, and discharge only during a three months period (National regulations)
- Declaration for private producers to sell water to national water company: Producers can sell water to national water company and develop more production tools (Declaration and monetary incentives)
- Nature reserves and national parks law (Primary legislation)

## Land/sea/etland and natural resource users

- Fishery operators (Dag'On)
- Local water association
- Governmental Water authority
- Recreational Fishing Park
- Beach visitors and swimmers
- Birdwatchers
- Hikers/tourists
- Gas pipe infrastructure utility






## Landowners

- INPA (National resource)
- Ma'ayan Tzvi (fishery landowners)
- Hof Carmel Local municipal authority
- National Roads Company of Israel
- Israel Railways




Earth-dam breaching during floods

### Organisations with land management and natural resource management responsibilities



-  Israel National Park Authority (INPA)
-  Water authority
-  Local water association
-  Regional municipality Hof Ha'Carmel (responsibility for the beach)
-  Local drainage authority






### Local businesses with direct impact/dependence on the site

-  Fishing Park (touristic)
-  Dag'On (commercial fishery)





## Key variables of relevance to REST-COAST

### Biodiversity surveys: species community composition, numbers and population dynamics






-  Microalgae
-  Flora

-  Macroinvertebrates
-  Fish
-  Softshell turtles
-  Mammals
-  Birds (breeding, wintering and migratory waterbirds)

### Geophysical and hydrological surveys

-  Geochemical
-  Thermal
-  Bathymetry
-  Water quality (conductivity, salinity, major ions, dissolved nutrients, pH, dissolved O<sub>2</sub>, water table level)

### Relevant socio-economic and financial aspects

-  Local residents
-  Rural and urban residents
-  Stakeholders' revenue
-  Market prices
-  Travel costs