The Jordan Downstream
Eco-tourism Rehabilitation Plan
"Jordan Downstream" Rehabilitation Plan

The "Jordan Downstream" Plan deals with the Jordan River as it meanders from the Sea of Galilee to Naharayim, during the zoning and detailed planning stage in the execution of its ecological rehabilitation.

The primary uniqueness of this segment, as opposed to the continued downstream segment towards the Dead Sea, is that both its banks are within the sovereign boundaries of the State of Israel.

The Kinneret Drainage Authority promotes a physical plan for the rehabilitation of the channel itself including the body of water and its banks parallel to the preparation of a statutory zoning plan.

The Jordan Downstream is planned to receive a water allocation of approximately 30 million M$^3$ (fresh and salty water) at a salinity level of up to 1,000 mg/L Chlorine, improved water quality in conjunction with ecological rehabilitation activities that will restore the downstream's historical potential as an humid habitat.
The Zoning Plan and Statutory Advancement

The Drainage Authority is working with relevant entities to promote a statutory zoning plan for the stream.

The plan is presently awaiting submission to the district planning commission.

The plan's components:

- Designation of the entire stream as a national park and nature reserve that will connect to the Yavniel Stream Nature Reserve.
- Adjacent tourism areas in the north
- Arrange a network of roads, trails and campgrounds the length of the stream.
- Apply an ecological emphasis that will restore the stream's natural character that has been disturbed since the 1930s within the framework of engineering activities to establish an electrical generation plant at Naharayim.
The Regional Hiking Trail Network

The Jordan Downstream is tied to a network of Cycling & Hiking Trails.

The Israel National Trail passes through the northern part of the plan and the Kinneret Overlook Trail continues the length of the Jordan Downstream until Naharayim and Route 90 in the south.

A group of cyclists in the Kinneret Fish Ponds

A Kinneret Overlook Trail Marker

The Jordan Downstream
Hiking and Recreational Focal Points

The length of the Jordan Downstream contains a number of interest focal points pertaining to subjects such as archeology, history and nature as well as a variety of tourist attractions including:

• Yardenit Baptismal Center
• Rob-Roy – Kayaks & Canoes
• Alumot Dam – A Nature Recreation Site
• Yavniel Streams – Nature
• Um Juni – History
• Tel Ubeidiya – Archeology
• Menahemia Lookout Point – Nature
• Rutenberg Power Plant – History
The Proposed Ecological Rehabilitation

The Work Process

• A comprehensive ecological survey will be prepared and submitted

• A group comprised of an ecologist, landscape architect, hydrologist and representative of the National Parks & Nature Authority will conduct a number of field tours

• The stream will be divided into a number of characteristic segments and an ecological rehabilitation plan devised for each segment

• A plan will be developed to enhance the structural complexity for the entire stream

• Efforts will be instituted to rehabilitate habitats with the aid of plant growth and forestry control of invasive species

• Monitoring and maintenance will be conducted on a regular basis

A plan to enhance the stream’s structural complexity adjacent to Rob Roy
The Proposed Ecological Rehabilitation - Enhancing the Stream's Structural Complexity

Reduce the banks' gradient (Central Jordan River)

Stabilize bank plant life (Central Jordan River)
The Proposed Ecological Rehabilitation

**Principles and Tools for Rehabilitating the Jordan Downstream**

- Reviving the stream's meandering
- Reduce the banks' gradient
- The channel's meandering
- Create a longitudinal gradient that will enable water flow in the southern portion
- Constrict and expand the stream's cross section to create various flow speeds
- Create an occasional stone infrastructure to encourage the growth of fingerling habitats
- Encourage flood basins by creating a graded bank cross section
- Provide forestry control of invasive and foreign species
- Plant indigenous bank plant life
- Develop a sustainable maintenance interface
The Proposed Ecological Rehabilitation – Dividing into Characteristic Segments

1. Yardenit – Rob–Roy
2. Brackish Water Diversion Carrier – Alumot Dam
3. The Alumot Dam Downstream – Jordan Estuary
3.1 Yavniel Stream Downstream
4. The Meandering Tributaries of Um Juni and Beit Zera North
5. Beit Zera Bridge
6. The Short Channel – Meandering Beit Zera Tributary
7. Meandering Beit Zera Tributary
8. Tel Ubeidiya
9. Meandering Beit Zera South Tributary
10. Power Sub-Station – Moderate Gradient
11. Marlstone Slopes – Moderate Gradient
12. Menahemia – Moderate Gradient
14. Jordan Pools – Midstream – Moderate Gradient
15. Jordan Pools – Downstream– Moderate Gradient
16. The "O" Channel
17. The Jordan Downstream until Naharayim
18. Restoration of the Historic Jordan River Channel
1. Yardenit – Rob – Roy

A man-made channel segment with Eucalyptus trees covering both banks and a low ecological value.

The site serves as a location of baptismal activities and kayaking.

It is proposed to improve the structural complexity by reducing the banks' slope and adding a stone infrastructure to the moderated banks. The proposal also calls for thinning out the Eucalyptus and planting new indigenous bank plant life and trees.

It is also proposed to break a new stream trail that will serve the baptismal activity in the north and regulate the stream’s kayak activity.
2. Brackish Water Diversion Carrier – Alumot Dam

A channeled segment with passage to the Brackish Water Diversion Carrier in the west and the Jordan River in the east.

The area of the Jordan enjoys active kayaking and recreational vacation activities shaded by the Eucalyptus trees and has a low ecological value.

It is recommended to fill the route of the Diversion Carrier and improve the structural complexity of the Jordan River.

It is recommended to thin out the Eucalyptus and plant new indigenous bank plant life and trees. It is proposed to prepare the area for recreational vacation activity by filling in the Diversion Carrier channel up to the Alumot Dam, recreational activity will be expanded to the eastern bank of the Jordan as well in the area of the dam, including facilities for overnight camping (restrooms, etc.)

In the area of the planned Alumot Dam it is proposed that the historic channel serve as a 'fish ladder'.
3. The Alumot Dam Downstream
The segment begins at the meandering of the Jordan Downstream. The longitudinal gradient will be increased by 2.5%. The segment has high ecological value.

3.1 Yavniel Stream Downstream
A channeled segment adjacent to the Beitaniya Waste Treatment Plant. The site has high ecological value because of the stream's fresh water flow. It is proposed to expand the stream belt southward to create an ecological barrier between the treatment plant and the stream. It is further proposed to improve the stream's structural complexity by adding suitable plant life to the streams. It is recommended to conserve the ancient aqueduct that crosses the stream.
4. The Meanderings Tributaries of Um Juni and Beit Zera North

The 2 meandering tributaries digging in along the marlstone cliffs have high ecological value.

It is proposed to revive the meandering tributaries with a facility that will enable basic flow in the tributary and flood flow in the main stream. Enhanced planting adapted to the expected change in the water's salinity will be executed.

5. Beit Zera Bridge

The Beit Zera Dam regulates the water flow in the Beit Zera tributary. There are two bridges about the channel. Landscape improvements for the adjacent facilities and ensuring a basic flow for the Beit Zera tributary is required.
6. **The Short Channel – Meandering Beit Zera Tributary**

The channel shortens the meandering with steep and high bank walls.

Landscaping and ecological rehabilitation are required for the segment.

7. **Meandering Beit Zera Tributary**

This is a wide meandering tributary along the marlstone cliffs that has high ecological value.

It is further necessary to conserve and enhance tree plantings and bank plant life that will be adapted to the change in water salinity after the cessation of the flow of sewage and brackish waters.
8. Tel Ubeidiya
A deep, wide, steep and meandering channel with a very high ecological value.

This segment requires forestry care for the Eucalyptus trees, combating invasive species and enhanced structural complexity for the channel. It is also necessary to enhance the tree and plant life so that it will be suitable to the water's salinity.

It is recommended to construct a modest overlook adjacent to the archeological site of Tel Ubeidiya.

9. The Southern Meandering Beit Zera Tributary
A small meandering tributary to the south of the tel that is regularly flooded and has a very high ecological value.

It is necessary to ensure a basic flow in the tributary.
10. Power Sub-Station – Moderate Gradient

A wide flowing channel with a negligible slope. There is a narrow strip of bank plant life the length of the channel. Moderate ecological value.

The segment requires an improvement of its structural complexity and an enhanced ability to create habitats in the channel.

11. Marlstone Slopes – Moderate Gradient

A high and wide flowing channel with a negligible slope. The segment requires an improvement of its structural complexity and an enhanced ability to create habitats in the channel.
12. Menahemia – Moderate Gradient
A wide and very shallow channel with level mudbanks. Moderate ecological value.
The segment requires an improvement of its structural complexity and an enhanced ability to create habitats in the channel.

A wide and very shallow channel with level mudbanks with a separating belt from the east, flow is negligible. High ecological value.
The segment requires an improvement of its structural complexity and an enhanced ability to create habitats in the channel.
14. Jordan Pools – Midstream – Moderate Gradient

Lake Menahemia, the segment where the Jordan River was deepened and widened to make a reservoir for the hydroelectric plant. The channel has a negligible flow. Very high ecological value.

It is necessary to examine the creation of a longitudinal gradient for creation minimal water flow, conserve habitats and create islands in the lake.

Protect the flood basin from west of the channel.

15. Jordan Pools – Downstream – Moderate Gradient

Southern Lake Menahemia, a wide and deep segment that ends at the "0" Channel. The channel contains a number of islands and highly developed thicket. The channel has a negligible flow. Very high ecological value.

It is necessary to examine the creation of a longitudinal gradient for creation minimal water flow, create pools with ripple breakers between one pool to the next.
16. The "0" Channel
This is a concrete channel that regulated the water into the hydroelectric plant. The channel is an ecological break–off channel that runs the length of the Jordan River.

With the planned lowering of the water level in the Jordan Pool a pump will be constructed to supply water to the "0" Channel in order to preserve its history and tourism.

17. The Jordan Downstream until Naharayim
A wide, deep, steep and meandering channel. At its end there is a man–made channel.

The segment requires the construction of habitats in the channel according to changes in the Jordan River water quality.

18. Restoration of the Historic Jordan River Channel
This plan calls of the restoration of the historic Jordan River Channel that existed prior to the construction of the Naharayim power generation facility. It is recommended to drill horizontally beneath the road to Menahemia and Route 90 that will enable water flow in the channel, thereby contributing to the longitudinal gradient in the Jordan Pools in order to create a water flow.