The NEPTUN device generates a heterogeneous electric field in a water environment where the current intensity distribution can be adjusted to site-specific hydro-technical parameters.

The heterogeneous electric field is produced by a set of electrodes with negative and positive polarization.

www.fishwaysglobal.com

POTENTIAL USES
1. Water Intake Protection
2. Fish Barrier/Guidance
3. Fish Trapping/Counting
4. Marine Mammal Control
5. Fish Predation Control
6. Beach Protection
7. Security
8. Aquaculture

UNIQUE DESIGN ATTRIBUTES
1. Non-linear distribution of the electric field
2. Intensity of the electric field:
   a. Positive electrodes-close to zero
   b. Negative electrodes-maximum
3. Adjustable DC pulse parameters:
   a. Amplitude
   b. Pulse duration
   c. Intervals between the pulses
   d. Number of pulses in a packet
**NEPTUN Technology**

**Principle of Operation: Electric-gradient Method**

The efficiency of the method is amplified by the natural reaction of fish to an electric field, whereby, the fish will actively swim away from the negative polarization to the positive.

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**NEPTUN Off...**

**NEPTUN On for 20 minutes**

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**KEY BENEFITS**

1. “Dynamic” electric field designed to divert, not stun fish
2. Random alternating electric field prevents acclimation
3. Vertical control of electric field with virtually no depth limitation
4. Electric field does not disperse into the ground
5. Size flexibility and easy installation
6. Durable and resistant to icing and debris
7. Low energy consumption (solar panels may be practical)
8. Low operating and maintenance costs
9. Remote control
10. Limited effect on navigation

**TYPES OF INSTALLATIONS**

- Symmetrical Barriers
- Single Barriers
- Water Intake
- Guidance to Fish Passes, Counters and Traps

Example of the Electronic Fish Protection Screens Application or Hydropower Station with Fish Pass
The sets of electrodes are powered by the control and electrical supply system that generates rectangular pulses. The characteristics of these impulses such as voltage, amplitude, duration, and intervals between pulses, are all set from the touch-screen, based on the hydro-technical parameters and fish species for a given site.

**COMPANY PROFILE:** Fishways develops and promotes new technologies to better understand and protect natural resources in harmony with the needs of the community-at-large. The products and services provided by Fishways include the design and installation of fish barriers and guidance systems, as well as environmental impact assessments and feasibility studies, and physical habitat simulation models.