
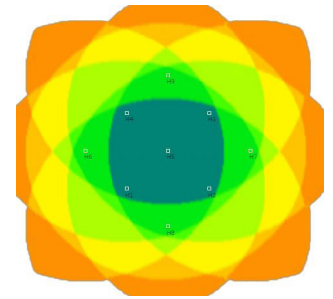




UMAP Acoustic Positioning Software

Technology:  Acoustic

Product:  Software



Hydrophone array dilution of precision mapping

Wireless positioning software for Lotek 76 KHz MAP or 416 KHz JSATS acoustic systems

UMAP acoustic positioning software provides a means for researchers to compute precise and continuous fine scale fish tracks in two or three dimensions based on data collected with Lotek wireless hydrophone systems, models WHS 3250/3050 (MAP acoustic) or WHS 4250 (JSATS acoustic). UMAP puts the researcher in control of all raw data processing and noise filtering, therefore providing a fully transparent process and qualification of results. UMAP software provides precise position estimates for tagged fish located within wireless hydrophone system arrays consisting of from three to up to 256 hydrophones. Applications range from small footprint critical habitat studies to continuous monitoring of entire harbors, lakes and large river systems for species migration timing/behavior, interaction, habitat use, fish passage/guidance efficiency near hydro-electric structures or behavior in response to anthropogenic disturbance.

Features:

Continuous 2D or 3D tracks:

Computed from presence/absence and depth data recorded on multiple wireless autonomous hydrophones (WHS series)

Transparent process:

User controlled, transparent process for processing/filtering raw data

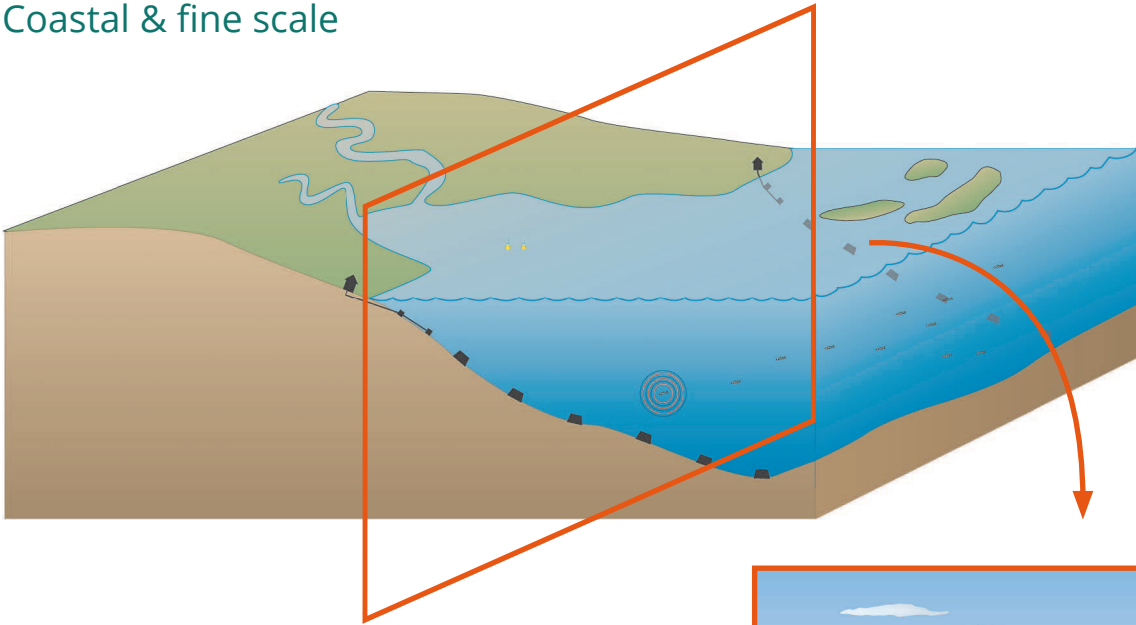
Export file generation:

For import by major GIS packages and Google Earth

Product Applications

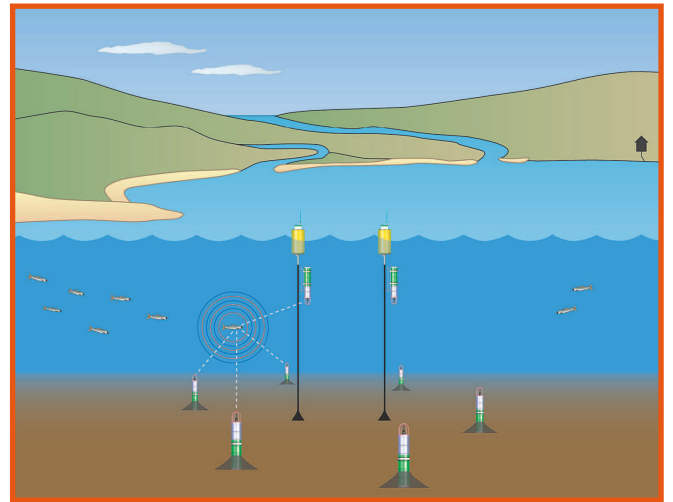
Fine scale species interaction, Critical habitat use, Fish guidance/passage efficiency, Multi-year whole lake/bay/river monitoring, Pollutant uptake studies, Predator/prey studies, Areas of concern remediation efforts

Coastal & fine scale



Fine scale

Through strategic placement of **MAP** acoustic receivers in estuaries and other key areas of interest along coastlines, and equipping marine species of interest with **Dual Mode** transmitters that send signals to **Lotek MAP** receivers, researchers will gain a much deeper understanding of the fine scale movements, behaviours and interactions of marine species. Researchers will be able to relate coastal migration patterns and fine scale behaviour.



In addition to providing fine scale activities of diadromous fish and other important marine species in 2D/3D, Lotek MAP acoustic technology allows detection of transmitters at fast transmission rates (to once per second) in acoustically noisy areas and areas of congregation with the option of providing physiological measurements (temperature, pressure and motion) whenever a tagged individual passes a MAP hydrophone array.

The result? A new understanding, not only of the broad migratory patterns, but also of fine scale movement patterns associated with feeding, spawning, predation and other species/habitat interaction/association.