

Predation Transmitters

Are you still tracking what you think you're tracking? Predation sensors reliably detect if your tagged fish has been eaten.

Predation tags permit exploration of novel questions and important research while increasing the certainty with which researchers can interpret their telemetry results.

The predation tag provides a direct measure of digestion wherein stomach acids digest a polymer which is a superior technique to using indirect measures of activity such as acceleration. Triggering time, referred to as the time from prey ingestion to the time of the polymer being digested, is largely a function of temperature and typically ranges between 3 and 5 hours.

The transmitted data output from predation tags is the time since the predation event occurred.



Use Cases

- » Validate mark recapture survival models
- » Separate predation mortality from natural mortality
- » Investigate impacts of invasive predators on native species
- » Study trophic energy transfer on reefs
- » Understand predator-prey behavior such as:
 - » Dominance
 - » Prey selection
 - » Genetic characteristics
 - » Water quality impacts on predation success

Temperature Sensor Option

For research requiring temperature information, the V7D and V9D can be equipped with temperature sensors. The tag will transmit the ambient temperature up to the predation event and the temperature measured at the time of predation will then be transmitted for the remainder of the tag's life.

| Temperature Sensors (V7D, V9D) | | |
|--------------------------------|----------|------------|
| Range | Accuracy | Resolution |
| -5 to 35 °C | ±0.5 °C | 0.15 °C |
| -4 to 20 °C | ±0.5 °C | 0.1 °C |
| 0 to 40 °C | ±0.5 °C | 0.15 °C |
| 10 to 40 °C | ±0.5 °C | 0.12 °C |

Transmission Systems

The V5D supports two acoustic transmission systems (HR and traditional PPM).

Pair With

Predation transmitters are used as a system with:

- » **V5D** - VR2W-180 kHz, HR2-180 kHz High Residence Receivers, VR4-UWM Underwater Modem
- » **V7D/DT, V9D/DT** - VR2W-69 kHz, VR2AR-69 kHz, VR2Tx-69 kHz, VR4-UWM Underwater Modem



Battery Life

Predation tags have many programming options (power, transmission interval, transmission scheme) that determine battery life. The tables provide some typical examples. Please contact us to discuss the appropriate programming settings and desired battery life for your study.

| V7D and V9D Life (Days) | | | | |
|-------------------------|--------|--------|--------|--------|
| Delay (seconds) | V7D-2L | V7D-2H | V9D-2L | V9D-2H |
| 60 | 100 | 35 | 413 | 157 |
| 120 | 170 | 64 | 718 | 190 |
| 180 | 226 | 91 | 912 | 413 |

| Coding Type | Nominal Delay (sec) | V5D Life (Days) | |
|-------------|---------------------|-----------------|-----|
| | | 95% | 50% |
| HR | 5 | 54 | 61 |
| PPM | 30 | 72 | 82 |
| HR/PPM | 5/30 | 36 | 41 |

Shelf life will affect tag life and therefore tags should be deployed within a reasonable amount of time from purchase. Please contact your Sales Representative to determine the time frame within which your tags should be deployed.

PRODUCT SPECIFICATIONS

| Tag Model | Frequency (kHz) | Diameter (mm) | Length (mm) | Weight in Air (g) | Weight in Water (g) | Power Output (dB re 1 uPa @ 1m) |
|-----------|-----------------|---------------|-------------|-------------------|---------------------|---------------------------------|
| V5D | 180 | 5.7 X 5.66 | 12.7 | 0.64 | 0.38 | 141 |
| V7D/DT* | 69 | 7 | 22 | 1.7 | 0.8 | 137 / 141 |
| V9D/DT* | 69 | 9 | 31.5 | 5.0 | 3.0 | 146 / 151 |

* D - Predation, DT - Predation/Temperature

Ready to Get Started? Contact us today.

About Innovasea

Innovasea designs the world's most technologically advanced aquatic solutions for fish tracking and builds them to withstand the toughest conditions. It's all driven by a commitment to make our ocean and freshwater ecosystems sustainable for future generations. Today. Tomorrow. For life.