

# 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 an indication of prey digestion. Triggering time, which is the time from prey ingestion to the time the polymer is digested, is largely a function of temperature and other biological variables.

The transmitted data output from the V5D, V7D and V9D predation tags is the time since the tag was triggered. The V3D predation tag instead changes its ID code upon the tag triggering.



## 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 V3D uses both HR and HTI transmission systems providing flexibility for study designs and research objectives. The V5D supports two acoustic transmission systems (HR and traditional PPM).

## Pair With

Predation transmitters are used as a system with:

- » **V3D** - HR3-307 kHz High Residence Receivers
- » **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.

Coding Type	Nominal Delay (sec) for HR	Pulse Width / Period for HTI	V3D Life (Days)	
			95%	50%
HR	5 sec		127	154
HTI		2 ms / 3000 ms	73	87
		2 ms / 6000 ms	116	138
		2 ms / 9000 ms	144	171

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)
V3D	307	4	15.5	0.33	0.16	141
V5D	180	4.3 x 5.7	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.



[www.innovasea.com/fish-tracking](http://www.innovasea.com/fish-tracking)

Predation Tag Patents  
 U.S. Patent No. 9,526,228  
 U.S. Patent No. 9,095,122 B2  
 European Patent No. 3,114,185

China Patent No. 2015 8001 2483.X  
 Canadian Patent No. 2,845,230  
 Japan Patent No. 6590993

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## Tagging Method

Predation tags are intended for internal tagging only.

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

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