

Course Outline & Registration: **USING ACOUSTIC TAGS TO TRACK FISH**



The 2-day short course *Using Acoustic Tags to Track Fish* addresses all aspects of tracking fish movement in three dimensions with sub-meter position resolution. The course focuses on using HTI's *Model 290/291/295 Acoustic Tag Tracking Systems*.

A basic background and/or experience in using acoustic tags is assumed, although HTI scientists are available to elaborate on these topics as needed. The course includes hands-on operation of *Model 290/291 Systems* and *AcousticTag/MarkTag* software. Examples from past acoustic tag evaluations are used, and attendees have an opportunity to talk to the biologists and engineers who conduct tag studies for HTI's Consulting Division. An instruction manual is provided, along with reports and papers from case studies.

HTI's acclaimed acoustic short courses have been presented worldwide for over 19 years. Past HTI acoustic short courses have been attended by biologists, engineers, managers, and technicians from fisheries agencies, consulting firms, power producers, and regulatory agencies. A team of four HTI *Senior Scientists* will conduct the course, each with 25 years experience using and teaching fisheries acoustics.

COURSE OUTLINE

- 1.0 Introduction
 - 1.1 History of Hydroacoustics
 - 1.2 History of Electronic Tags for Fish
 - 1.3 About This Course

- 2.0 General Acoustics
 - 2.1 Classic Acoustics
 - 2.2 Types of Equipment Available
 - 2.3 Type of Data Available
 - 2.4 Pros and Cons of Using Acoustic Tags

- 3.0 Introduction to the *Model 290/291 Acoustic Tag Tracking System*
 - 3.1 Computer
 - 3.2 Hydrophones and Cables
 - 3.3 Acoustic Tag Receiver
 - 3.4 Acoustic Tags

- 4.0 Introduction to the *Model 295 Acoustic Tag Data Logger*

- 5.0 System Deployment
 - 5.1 Area of Coverage
 - 5.2 Optimal Hydrophone Geometry
 - 5.3 Hydrophone Mounts
 - 5.4 System Calibration and Gain Settings
 - 5.5 Finding Hydrophones (the "ping around")

- 6.0 Acoustic Tags
 - 6.1 General Specifications
 - 6.2 Individual ID
 - 6.3 Pros and Cons of Different Tag Parameter Settings
 - 6.4 Encoded Signals
 - 6.5 Tag Life
 - 6.6 Programming Acoustic Tags

- 7.0 System Testing
- 8.0 Satellite Connection and Data Transfer
- 9.0 Data Collection with *AcousticTag* Software
- 10.0 Marking Tag Tracks with *MarkTag* Software
- 12.0 3D Tracking with *AcousticTag* Software
- 13.0 Using Plotting Software for Data Display

REGISTRATION FORM

I wish to attend HTI’s 2-day short course ***USING ACOUSTIC TAGS TO TRACK FISH.***

Check items appropriately below:

- Please reserve one space for me in the **October 15-16, 2009** course in Seattle, WA USA.
- Please reserve one space for me in the **October 24-25, 2009** course in Lyon, France.
- Please reserve one space for me in the **February 4-5, 2010** course in Seattle, WA USA.
- I will be paying the tuition by government purchase order. (HTI cannot accept credit cards.)
- I will be paying the tuition by check. (HTI cannot accept credit cards.)
- Tell me how I could have an acoustic tag short course brought to my location.
- I cannot attend at this time, but please keep me in mind for future acoustic tag short courses.

Tuition for the 2-day short courses in Seattle is US \$300 and includes lunches and the instruction manual. Tuition for the coursework in Lyon, France is EUR €200 and includes snack breaks and the instruction manual. Attendance is limited, and is available on a first-come first-served basis. To reserve space, contact Caroline Mercado at (206) 633-3383 or cmercado@HTIsonar.com, and either email or fax to (206) 633-5912 the form below. A detailed outline and schedule for the workshop will be forwarded to registrants.

Name: _____

Organization: _____

Address: _____

E-mail: _____

Telephone: _____

Fax: _____

Email, Fax or Mail to:
HTI - Hydroacoustic Technology, Inc.
Attn: Caroline Mercado
 715 NE Northlake Way, Seattle, WA 98105 USA
 Tel (206) 633-3383 Fax (206) 633-5912
cmercado@HTIsonar.com www.HTIsonar.com