From: Oliver Hooker
Subject: new course - Aquatic Acoustic Telemetry Data Analysis (ATDA01)

Aquatic Acoustic Telemetry Data Analysis (ATDA01)

https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_aquatic-2Dacoustic-2Dtelemetry-2Ddata-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=4_gavcilaiRG73W_s1mFd6wr2utx3SkCo_eLrAM0lH4&e=analysis-atda01/

This course will be delivered by Stephanie Smedbol (Vemco), Dale Webber (Vemco), Sam Johnston (HTI-Vemco USA), Tracey Steig (HTI-Vemco USA) and Ryan Mowatt (RSaqua UK) in Glasgow ciuty centre form the 28th January - 1st February 2019.

https://urldefense.proofpoint.com/v2/url?u=https-3A__vemco.com_&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=wgAuGEnSVj0a1nb1JHAsfljQKR9xT-sc4g9AlrlwaUE&e=

Monday 28th – Classes from 09:30 to 17:30
Lecture 1
1) Introduction to Acoustic Telemetry
Acoustic vs radio, satellite, PIT tags
History of acoustic telemetry
Comparison of acoustic technologies from different manufacturers

2) How Vemco acoustics work
Continuous vs coded vs HR (High Residence) transmission systems
Pinger tags vs sensor tags

3) Vemco Equipment Overview
Applications of 69 kHz line
Applications of 180 kHz line
Applications of HR (High Residence) technology

4) Designing a Successful Study
Hardware Selection
Tag Programming Considerations
Range Testing
Using Sentinel Tags

5) Vemco Equipment Demo
PPM vs HR coding systems
Surgery techniques

Tuesday 29th – Classes from 09:30 to 17:30
Lecture 2
1) Preparing for Deployment
Preparing your receivers
Initialization tips
Setting up built-in transmitters

2) System performance considerations
Quiet vs noisy locations
Thermoclines
River flow considerations
Mooring design and receiver attachment

3) Testing your deployment
Using transponding data (includes transponding demonstration)
Using offloaded test data/VUE (includes demonstration)
Important considerations during testing
Practical 1

4) Case Study 1 – River migration study (traditional PPM coding example)
Study Design
Range test analysis example
Determining receiver spacing
Tag Programming

Wednesday 30th – Classes from 09:30 to 17:30
1) Practical 2
Data Management (using Case Study 1 data or other example datasets
Assigning stations in VUE
Time Correction
Identifying false detections
Using VUE's FDA tool
Marking questionable detections in your exported data

2) Filtering your data
Building filters in VUE
Identifying residency events
What to do with duplicate detections
Sensor Tag Data
Bringing in sensor metadata (.VXM) files
How to handle data from sensor tags with multiple IDs
System Performance Assessment using R1
Using detection data
Using ping data
Using receiver sensor / diagnostic data
Data Analysis
Calculating gate detection probabilities
Calculating swimming speeds
Animating your animal movement data

Thursday 31st – Classes from 09:30 to 17:30
Lecture 3
1) Introduction to High Residence technology
VPS (PPM and HR)
Theory (how VPS works)
Special deployment considerations
Special considerations for testing your array

Practical 4
2) Case Study 2 – VPS o Study Design
Range test analysis example  Determining receiver spacing
Tag Programming
Testing the array – how do I know my VPS will work?
Data Analysis
Visualizing animal position data
Home Range example

Friday 1st – Classes from 09:00 to 17:00
Practical 5
1) Case Study 3
VPS using High Residence (HR) technology

Lecture 4

2) Summary – what have we learned?
Challenges specific to analyzing telemetry data
Practical 6

3) Discuss your work!
Opportunity for course participants to discuss their work with the group and seek advice

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Check out our sister sites,
www.PRstatistics.com (Ecology and Life Sciences)
www.PRinformatics.com (Bioinformatics and data science)
www.PSstatsistics.com (Behaviour and cognition)

1. June 12th - 15th 2018
SPECIES DISTRIBUTION MODELLING (DBMR01)
Myuna Bay sport and recreation, Australia, Prof. Jane Elith, Dr. Gurutzeta Guillera
www.prstatistics.com/course/species-distribution-models-using-r-sdmr01/

2. June 25th – 29th 2018
SPECIES DISTRIBUTION/OCCUPANCY MODELLING USING R (OCCU01)
Glasgow, Scotland, Dr. Darryl McKenzie (PROTEUS)
www.prstatistics.com/course/species-distributionoccupancy-modelling-using-r-occu01/

3. July 2nd - 5th 2018
SOCIAL NETWORK ANALYSIS FOR BEHAVIOURAL SCIENTISTS USING R (SNAR01)
Glasgow, Scotland, Prof. James Curley
https://urldefense.proofpoint.com/v2/url?u=http-3A__www.psstatistics.com_course_social-2Dnetwork-2Danalysis-2Dfor-2Dbehavioral-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=NgvLCY625uvvQLAgLs3oJe9Kv8CpD4RjKlhJEAtIAEs&e=
scientists-snar01/

4. July 8th – 12th 2018
MODEL BASE MULTIVARIATE ANALYSIS OF ABUNDANCE DATA USING R (MBMV02)
Glasgow, Scotland, Prof. David Warton
www.prstatistics.com/course/model-base-multivariate-analysis-of-abundance-data-using-r-mbmv02/

5. July 23rd – 27th 2018
EUKARYOTIC METABARCODING (EUKB01)
Glasgow, Scotland, Dr. Owen Wangensteen
https://urldefense.proofpoint.com/v2/url?u=http-3A__www.prinformatics.com_course_eukaryotic-2Dmetabarcoding-2Deukb01_&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=bJVSn8QQwyWnVlUTqWgnrpNbZExvwIr-d1rUKz0ofLE&e=

6. September 24th – 28th
INTRODUCTION TO MIXED (HIERARCHICAL) MODELS FOR LIFE SCIENCES USING R (IMLS01)
Glasgow, Scotland, Prof. Subhash Lele
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.psstatistics.com_course_introduction-2Dto-2Dmixed-2Dhierarchical-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=dq9H6Rg1tdLskDDak42LN0QGRnPYL1DLcIEm7bmzGYk&e=
models-for-life-sciences-using-r-imls01/

7. October 1st – 5th
INTRODUCTION TO LINUX WORKFLOWS FOR BIOLOGISTS (IBUL03)
Glasgow, Scotland, Dr. Martin Jones
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prinformatics.com_course_introduction-2Dto-2Dlinux-2Dworkflows-2Dfor-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=M7w7B0VA07nlkiI4oSZX4zfN6x9YL2ne3FHsFxDBwk0&e=
biologists-ibul03/

8. October 8th – 12th 2018
INTRODUCTION TO SPATIAL ANALYSIS OF ECOLOGICAL DATA USING R (ISAE01)
Glasgow, Scotland, Prof. Subhash Lele
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_introduction-2Dto-2Dspatial-2Danalysis-2Dof-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=l1QThjYQVldruuEzhjW_iNbHt1e2hZDYFFmHs0lE8xg&e=
ecological-data-using-r-isae01/

9. October 8th – 12th 2018
INDIVIDUAL BASED MODELS USING NETLOGO AND R
Glasgow, Scotland, Dr. Andrew Jackson
Link to follow

10. October 15th – 19th 2018
APPLIED BAYESIAN MODELLING FOR ECOLOGISTS AND EPIDEMIOLOGISTS (ABME
Glasgow, Scotland, Dr. Matt Denwood, Emma Howard
https://urldefense.proofpoint.com/v2/url?u=http-3A__www.prstatistics.com_course_applied-2Dbayesian-2Dmodelling-2Decologists-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=_ONw4Z0kvTx60fOkoRw7zrdEwAqC8tAxMuJXeafpwvQ&e=
epidemiologists-abme04/

11. October 29th – November 2nd 2018
INTRODCUTION TO R AND STATISTICS FOR BIOLOGISTS (IRFB02)
Glasgow, Scotland, Dr. Olivier Gauthier
Link to follow – see previous
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_introduction-2Dto-2Dstatistics-2Dand-2Dr-2Dfor-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=zbgrYqt0MXysikH2AqVpmZCXqFkd6XNvwpyyaDkyUKE&e=
biologists-irfb01/

12. October 29th – November 2nd 2018
INTRODUCTION TO BIOINFORMATICS FOR DNA AND RNA SEQUENCE ANALYSIS (IBDR01)
Glasgow, Scotland, Dr Malachi Griffith, Dr. Obi Griffith
www.prinformatics.com/course/precision-medicine-bioinformatics-from-raw-genome-and-transcriptome-data-to-clinical-interpretation-pmbi01/

13. November 5th – 8th 2018
PHYLOGENETIC COMPARATIVE METHODS FOR STUDYING DIVERSIFICATION AND PHENOTYPIC EVOLUTION (PCME01)
Glasgow, Scotland, Dr. Antigoni Kaliontzopoulou
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_phylogenetic-2Dcomparative-2Dmethods-2Dfor-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=PuPsHOSikzJwgcSMRrHHERAj4hHeKawIUzMN2YnubWI&e=
studying-diversification-and-phenotypic-evolution-pcme01/

14. November 19th – 23rd 2018
STRUCTUAL EQUATION MODELLING FOR ECOLOGISTS AND EVOLUTIONARY BIOLOGISTS

(SEMR02)
Glasgow, Scotland, Dr. Jonathan Lefcheck
Link to follow – see previous
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_structural-2Dequation-2Dmodelling-2Dfor-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=VYE7RDBCSKy6Oi_Y-W7B6WgGRsfA0l9TP69ALzBWgBY&e=ecologists-and-evolutionary-biologists-semr01/

15. November 26th – 30th 2018
FUNCTIONAL ECOLOGY FROM ORGANISM TO ECOSYSTEM: THEORY AND COMPUTATION (FEER
Glasgow, Scotland, Dr. Francesco de Bello, Dr. Lars Götzenberger, Dr.
Carlos Carmona
https://urldefense.proofpoint.com/v2/url?u=http-3A__www.prstatistics.com_course_functional-2Decology-2Dfrom-2Dorganism-2Dto-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=CWxcDemZiHdR5YCqVU-9RKqfrR4cHcJCe-37uicY4D8&e=ecosystem-theory-and-computation-feer01/

16. January 21st – 25th 2019
STATISTICAL MODELLING OF TIME-TO-EVENT DATA USING SURVIVAL ANALYSIS: AN INTRODUCTION FOR ANIMAL BEHAVIOURISTS, ECOLOGISTS AND EVOLUTIONARY BIOLOGISTS (TTED01)
Glasgow, Scotland, Dr. Will Hoppitt
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.psstatistics.com_course_statistical-2Dmodelling-2Dof-2Dtime-2Dto-2Devent-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=fwQ61J7tWqewME4sEF3-Zosowv49-QeIYot4TSY3uCs&e=data-using-survival-analysis-tted01/

17. 28th January – 1st February 2019
AQUATIC ACOUSTIC TELEMETRY DATA ANALYSIS AND SURVEY DESIGN
Glasgow, Scotland, VEMCO staff and affiliates
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_aquatic-2Dacoustic-2Dtelemetry-2Ddata-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=4_gavcilaiRG73W_s1mFd6wr2utx3SkCo_eLrAM0lH4&e=analysis-atda01/

18. 4th – 8th February 2018
DESIGNING RELIABLE AND EFFICIENT EXPERIMENTS FOR SOCIAL SCIENCES (DRES01)
Glasgow, Scotland, Dr. Daniel Lakens
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.psstatistics.com_course_designing-2Dreliable-2Dand-2Deffecient-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=oLNUs_WMtGrnSQaHZOA9M990CjQb04NMlIvRhxKsjZQ&e=experiments-for-social-sciences-dres01/

19. 25th February – 1st March 2019
MOVEMENT ECOLOGY (MOVE02)
Margam Discovery Centre, Wales, Dr. Luca Borger, Prof. Ronny Wilson, Dr
Jonathan Potts
https://urldefense.proofpoint.com/v2/url?u=https-3A__www.prstatistics.com_course_movement-2Decology-2Dmove02_&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=9kiVlLQnb9YjpA7ZPzAQ4Stl3BA8hHIH6SEsaPd92jM&e=

20. March 25th – 29th 2019
LANDSCAPE GENETIC/GENOMIC DATA ANALYSIS USING R (LNDG03)
Glasgow, Scotland, Prof. Rodney Dyer

https://urldefense.proofpoint.com/v2/url?u=http-3A__www.prstatistics.com_course_landscape-2Dgenetic-2Ddata-2Danalysis-2Dusing-2Dr-2D&d=DwIF-g&c=Ngd-ta5yRYsqeUsEDgxhcqsYYY1Xs5ogLxWPA_2Wlc4&r=e2OJ1azRFn8ihJzb2HxZT0AqoiqLvxfeeaTyN59ZLoI&m=dlwHuI-0zVkvizOaCwj6QDFl7Yxeu-lz9v_AAq3EltM&s=PPMvbZ4HujVxlQPBri80opRMhoVzVnmxNEaY3t0BsbQ&e=lndg03

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Oliver Hooker PhD.
PR statistics

2018 publications -

Phenotypic and resource use partitioning amongst sympatric lacustrine brown trout, Salmo trutta. Biological Journal of the Linnean Society. DOI 10.1093/biolinnean/bly032

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