CSP4200 - Making Sense of Biological Data with R

Course Code	**CSP4200**
Course Title	**Making Sense of Biological Data with R**
Description	This course, along with CSP1003 Field Data Management using MS Access, are foundational courses in the toolbox series of courses that build skills in data management, data analysis, monitoring and species distribution modeling. Two focal points of this class are improving abilities to think like a scientist (e.g., framing questions, choosing appropriate indicators, following data analysis steps) and gaining a working knowledge of the "R" software package. Participants will use "R" for several tasks including exploratory data analysis, cleaning and restructuring messy data and hypothesis testing. Other important themes include estimating population parameters with uncertainty (confidence intervals) by formula and bootstrapping, determining what statistical tests are appropriate given the data type and distribution, estimating the power to detect change, and learning the basics of sampling design and types of statistical models. Depending upon class needs, the course will conclude with use of either ANOVA or simple linear regression as a bridge to the next course, CSP4210 Statistical Modeling for Conservation. Students are encouraged to bring a project or dataset to class for one-on-one consultation and for examples that may be integrated into the class. **OBJECTIVES** • Use R software to manipulate, explore, analyze, and graphically display your field data. • Estimate population quantities (e.g., density, mean wing length) from your data. • Use bootstrapping techniques to resample datasets and create confidence intervals. • Perform hypothesis tests and interpret p-values. • Explore how sampling effort directly affects the ability to make conclusions from your data. **PREREQUISITE** Willingness to learn quantitative approaches to help guide natural resources management. **TARGET AUDIENCE** Biologists and others that need to collect and analyze data for purposes such as impact assessment and biological monitoring. This course is tailored for those with little or no prior experience with R or statistics.
Delivery Method	Instructor Led
Non-FWS Fee	$1,195.00
Instructional Hours	38
Credits/CEUs	3.0
Course Content Contact	Eric Kelchlin: eric_kelchlin@fws.gov; (304) 876-7453; **eric_kelchlin@fws.gov**
Curriculum Category	**Statistics and Modeling**
Course Frequency	Twice per year
Registration Link	**Register in DOI Talent**
DOI Talent Course Type	ILT
College Credit Name	Semester Hours
College Credit Value	2

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Start	End	Session Information	Location	Session Contact
10/29/2018	11/2/2018	For registration questions: sharon_howard@fws.gov For course content questions: eric_kelchlin@fws.gov Class starts at 8:00AM on the first day and ends at noon on the last day.	National Conservation Training Center (NCTC)	Sharon Howard; sharon_howard@fws.gov
5/13/2019	5/17/2019	For registration questions contact: katie_poston@fws.gov For course content questions contact: eric_kelchlin@fws.gov	Anchorage, AK	katie_poston@fws.gov