



U.S. Fish & Wildlife Service

National Conservation Training Center

Conserving the Nature of America

CSP3156B - Modeling Principles for Natural Resources Management (Intermediate Track)

Course Code	CSP3156B
Course Title	Modeling Principles for Natural Resources Management (Intermediate Track)
Description	<p>This is a fun, engaging, and challenging on-line course based on Dr. Anthony Starfield's <i>Principles of Modeling for Conservation Planning and Analysis</i>. Participants will learn about the modeling process, how to think like a modeler, and how modeling fits into management decision-making. Participants will develop practical skills on building and communicating about models. The class covers a variety of modeling techniques applicable to resource management and conservation issues. Session topics include Introduction to Modeling and Spreadsheets (e.g. context, sensitivity analysis, assumption analysis, and mechanics), Population Modeling, Decision Analysis, Ecosystem Modeling, Spatially Explicit Models, and the use of models in making conservation decisions. On-line presentations, discussion, and exercises emphasize hands-on experience with building spreadsheet models to illustrate the values, limitations, and appropriate applications of models. The typical weekly format consists of video lectures and spreadsheet modeling tutorial/exercise, homework on tutorial model, posting to a discussion board, and a virtual classroom meeting to debrief homework and present team model challenge results. The course schedule runs over a 15 week time span (with one week off). Instructors and coaches will have virtual office hours weekly. This course was developed in collaboration between the Bureau of Land Management, National Training Center, the U.S. Fish and Wildlife Service, National Conservation Training Center, and the Vermont Cooperative Fish and Wildlife Research Unit.</p> <p>Course topics are similar to CSP3156a, except that participants work in teams on weekly modeling challenges. Weekly modeling challenges are questions within the context of natural resource management and require model building from the bottom up. Teams present their model results in weekly virtual classrooms. Modeling challenges require several hours per week more than those needed for successful completion of CSP3156a. Participants should be prepared to work an average of 10 - 15 hours per week.</p> <p>Objectives:</p> <ul style="list-style-type: none">• Discover how to use models in planning for ecological and conservation biology decisions with defensible results.• Describe the modeling process, terminology, use of deterministic and stochastic models, what to leave out of a model, scale and resolution, age or state structured models, and how to deal with uncertainty in making conservation decisions.• Build more advanced modeling skills.• Use decision trees, approach decision-analysis under uncertainty, and incorporate a pragmatic modeling approach to data collection methods and data analysis.• Design management-oriented modeling frameworks, qualitative models, and determine where GIS can be useful. <p>Target Audience:</p> <p>Biologists and resource managers who are seeking to gain model-building skills to inform research and decision-making in natural resource management. Participants are not required to be highly skilled in mathematics or computing, although familiarity with spreadsheets and how the results of models can be applied is beneficial.</p>
Delivery Method	Online Instructor Led
Non-FWS Fee	\$800.00
Instructional Hours	140
Credits/CEUs	14.0
Course Content Contact	Alan Temple; alan_temple@fws.gov; (304) 876-7440; alan_temple@fws.gov
Curriculum Category	Statistics and Modeling
Course Frequency	Once 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
1/22/2019	5/7/2019	For registration questions contact: katie_poston@fws.gov For course content questions contact: eric_tsakiris@fws.gov	Online	katie_poston@fws.gov 304-876-7477 katie_poston@fws.gov