Education and Outreach

Conservation of landbirds in the coniferous forests of western Oregon and Washington will require not only the implementation of a variety of habitat biological objectives and conservation strategies as described herein, but also increased awareness and support from a variety of audiences to ensure there are resources and opportunities to effectively conduct the conservation activities. Information must be communicated to these audiences in an effective manner to garner their support for bird conservation. Education can be defined broadly as the presentation of information to change individuals' knowledge, attitudes, or behaviors. This definition includes activities referred to as outreach, interpretation, communication, and marketing.

Primary Audiences

The two primary audiences for education related to this document are public land managers and private landowners. Public land managers generally are familiar with and have a positive attitude towards bird conservation plans as an available tool for management, but can be further aided by either top-down direction within their agency and/or guidance from a regional bird conservation expert. Private landowners tend to be unaware of bird conservation plans and the opportunities for integration with their land management. A primary constraint in implementation of bird conservation objectives by these audiences is a lack of personal interaction with someone who can provide guidance on the use of the information in the document. Although many individuals and organizations can aid local land managers and private landowners in plan implementation, without adequate funding there is a limit to how many people can be reached on a personal level. Thus, we describe below some components to consider in an education program to effectively educate land managers and landowners about bird conservation and the biological objectives presented in this document.

Key Messages

The following key messages are suggested for any education program targeting public land managers and private land owners for support and implementation of the biological objectives and habitat conservation strategies in this document:

- In the coniferous forests of western Oregon and Washington, there are twice as many landbird species with significantly declining trends as there are species with significantly increasing trends.
- We use a suite of "focal species" to represent and describe the habitat and population objectives for the entire avian community.
- Our recommendations focus on the ecological relationships between focal species and their habitat through the presentation of quantitative, prescriptive biological objectives for habitat and bird populations.

> *"In translating the recommendations in this document to public land managers and private landowners, the educational objective is to stimulate the implementation of our biological objectives and conservation strategies into practices on the ground."*

- Manipulation of forest conditions as part of forest management can be designed and implemented to achieve our biological objectives for bird conservation.

Involving Education Experts

Professional educators are skilled in following various principles for effective education. Most Oregon-Washington PIF organizations employ education and outreach staff. For the most effective translation of the information and recommendations in this document into education programs, it is suggested that teams of scientists and educators work together and include stakeholders if possible. Additionally, partner organizations in the national Bird Education Alliance for Conservation (BEAC; http://www.birdedalliance.org/) provide a ready source for information and expertise. The mission of the BEAC is to promote bird conservation education, to engage new audiences in conservation action, to develop the tools necessary to improve bird conservation messages and education materials, and to incorporate education as a tool into conservation efforts.

Decision Support Tools

In translating the recommendations in this document to public land managers and private landowners, the educational objective is to stimulate the implementation of our biological objectives and conservation strategies into practices on the ground. Success is dependent on effective communication and education techniques. In order to reach this goal it is critical to deliver the message and the necessary suite of tools to land managers. One of the most effective ways of doing this is through Decision Support Tools (DSTs). DSTs, produced in various formats (e.g., interactive computer programs, brochures and pamphlets, white papers) that link priority land management challenges and bird conservation objectives in a language specific to target audiences (e.g., land management agency decision makers, private land owners). These tools synthesize the best available science information to enhance decision-making through analysis and visualization of management alternatives.

Photo by Erik Ackerson

DSTs can be descriptive or interactive. One example of an interactive DST to support landbird conservation in the coniferous forests of western Oregon and Washington uses landbird demographic information (e.g., productivity) from the MAPS program and proposed land management to predict population outcomes for priority/focal species (See: *Interactive Decision Support Tool for Landbird Demographic Responses to Land Management).* An example of a descriptive habitat DST prepared by the education and outreach staff at Klamath Bird Observatory for focal species in the mixed conifer and conifer-hardwood forests of the Klamath Mountains ecoregion of southwestern Oregon is presented in Appendix C. An example of a species regional landscape-level descriptive DSTs (Pacific-slope Flycatcher) prepared by the Institute for Bird Populations is presented in Appendix D.

Interactive Decision Support Tool for Landbird Demographic Responses to Land Management

A recent emphasis in bird conservation has been the development and use of Decision Support Tools (DST) for assisting in land management and conservation decision-making. Although most of these are conceptual tools that provide descriptive information through the use of text or graphics, some interactive tools are being developed that allow a user to input quantitative data into mathematical models that will provide quantitative outputs.

One pertinent example for the coniferous forests of western Oregon and Washington is Managing Landbird Populations of Forests of the Pacific Northwest (www.birdpop.org/usfsr6/usfspnwr6.htm). This web-based, interactive DST developed by The Institute for Bird Populations in collaboration with U.S. Forest Service Region Six and the Bureau of Land Management can help land managers assess the impact of proposed management on the demographics (adult and young population sizes, and indices of reproductive success) of focal/priority species. It uses spreadsheets to quantify the "what if" scenarios of proposed management using pre-management demographic data from the MAPS (Monitoring Avian Productivity and Survivorship) program, several geospatial layers, and proposed management scenarios simulated in GIS. Pre- and post-management values of spatial parameters are used to populate the spreadsheets which report changes that will occur in the demographic parameters for a target species. The simulation and adaptation of the management scenarios for a variety of species can allow the user to assess the "community effect."

Ensuring Effectiveness of Education Efforts

It cannot be assumed that educational programs will be useful, of high quality, or lead to intended impacts. Conducting evaluation provides findings to aid us in decision-making about educational programs in all phases of program planning, implementation, and completion or repetition. A front-end evaluation allows for decisions about whether a program should be implemented, what strategies to use, and what content to present. A formative evaluation that takes place throughout the life of a program offers information about how to improve the program. A summative evaluation is conducted upon program completion to gauge the impact of the program. Each of these types of evaluations has a role in aiding in decision-making about the effectives of education activities associated with bird conservation strategies. Increasing, grant-making foundations and agencies are requiring that education programs demonstrate outcomes with an evaluation component.

Photo by Erik Ackerson