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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
PROACTIVE APPROACH TO IMMINENT LISTING
UNDER THE ENDANGERED SPECIES ACT

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Abstract: Washington State has been experiencing an increase in the number of species listed under the Endangered Species Act in recent years. Almost every single construction project completed by the Washington State Department of Transportation (WSDOT) must complete a section 7 consultation. To facilitate the section 7 process, WSDOT has developed a proactive approach to imminent listings under the act. The approaches include completing Programmatic Biological Assessments, completion of site specific management plans for listed and soon to be listed species on WSDOT right-of-ways, the establishment of specific programs to help recover species, such as our fish passage barrier replacement program, and finally, conducting or sponsoring research on candidate species or species of concern. This paper describes the process that was established to select the species that would benefit most from research. Some of the ongoing and recently completed research projects are also discussed.

Introduction

The listing of species under the Endangered Species Act (ESA) can have a severe impact on transportation project delivery. Projects that receive federal funding or require federal permits such as a 404 permit from the US Army Corps of Engineers must undergo a section 7 consultation process. When species are newly listed there is often a lack of information on their distribution and habitat needs. This lack of information can make the regulatory agencies reluctant to complete their ESA consultations, for fear of adversely affecting the species. Consequently, transportation projects are frequently faced with lengthy and costly delays while decisions are reached. Sadly, such actions typically do not result in benefits to the listed species.

The Washington State Department of Transportation (WSDOT) faced a significant slow down in project delivery in 1999 when several salmonid species were listed in Western Washington. The slow downs occurred due to a number of reasons, including increased consultation requirements at the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) known collectively as the Services, a lack of staff at the Services, and a lack of comfort at completing consultations due to a lack of information on the newly listed species.

Project Objective

Since new listings are occurring with increasing regularity in Washington, WSDOT has developed some proactive solutions to up-coming listings. These solutions include: 1) development of programmatic biological assessments, 2) development of specific highway management plans for highway segments which encounter listed species and their habitat, 3) contributing to the recovery of listed species through the establishments of specific programs, and 4) conducting research on candidate species or species which will shortly be listed.

Programmatic Biological Assessments

We are in the process of developing programmatic biological assessments to cover many of our activities statewide. We are developing PBA's with USFWS for terrestrial species, bull and cutthroat trout, and NMFS for aquatic species. The PBA's are written to include proposed and candidate species. Upon the listing of the species, we amend the PBA and the Services amend the Biological Opinion (BO) to allow WSDOT to conduct consultations on large numbers of projects within the range of the newly listed species. We anticipate using this method to complete many of our consultations on the coastal cutthroat trout when it is listed next year.

Specific Highway Management Plans

We have developed a statewide maintenance plan, which is being adopted under the 4d rule. It addresses how we do our maintenance activities in relation to listed species, especially salmonids. We have also developed a specific highway management plan for a highway segment, which runs through suitable habitat of a proposed plant, showy stickseed. This management plan was a multi-agency effort, developed in conjunction with the U.S. Forest Service (USFS) and the Washington State Department of Natural Resources (WDNR). It identifies the exact locations of the plants in the right-of-way and a process for how road maintenance and projects can be completed in the study area (Null et al. 1999).

Contribute to the Recovery of the Species

WSDOT is active in recovering species through specific programs, mainly the fish passage barrier retrofit program. This program involves inventorying the highways to locate impassable culverts, rating the potential habitat to be gained from fixing them, and prioritizing the fixes (Johnson et al. 1999). Specific projects are then funded every biennium.

Conduct Research on Species Soon to be Listed

Past research efforts were focused on specific impacts from transportation projects, such as the effect of pile driving on wintering bald eagles. Now under our new approach we have contracted and completed research projects on several listed and candidate species to fill information gaps that would have prevented successful consultations under ESA.

Unfortunately, as increasing numbers of species are placed upon the species of concern list, and many are becoming candidates, it is difficult to know which species should receive our limited research funds. There are also many charismatic species such as lynx, grizzly bears and wolves, which are currently being closely studied, providing numerous partnering opportunities. But sometimes it's the non-charismatic and little known species, which can cause the biggest problems in completing section 7 consultations with the Services. Therefore, some sort of screening tool is necessary.

Methods

We wanted a fast, easy to use method to decide which species our research efforts would provide the greatest benefit.

1. We elected to focus on species which were about to be listed, thus species which are either listed as candidates or are a species of concern with a strong possibility for listing through our regional USFWS office.
2. We then examined the species historic distribution, their current distribution, their habitat preferences, and compared this information to the location of the state highways.
3. Based on our review, species were lumped into two categories: 1) Potentially high impact species, which are those that were widely distributed historically which use habitat types that are widely distributed through the landscape, and 2) potentially low impact species, which are species that were limited in distribution and habitat types.
4. We then reviewed the literature, looking at the current knowledge base on the potentially high impact species.
5. We discussed our list of high impact species with numerous agency personnel from both federal and state agencies including USFWS, USFS, the Washington State Department of Fish and Wildlife (WDFW), and the WDNR, looking for ongoing research projects, or interest in completing research.

Based on our review, we identified two species, the Oregon spotted frog and the Mardon skipper (a butterfly), which had a high potential to impact WSDOT projects, based on their distribution and information needs. The Oregon spotted frog was once found in wetlands throughout the western lowlands and in the southern Cascade Range, but apparently it is now limited to four known populations (See Figure 1)(McAllister and Leonard 1997). The Mardon skipper is a small butterfly associated with open grasslands and ridge tops in Ponderosa pine forests in western and south-central Washington (See Figure 2)(Potter et al. 1999). We also found strong interest and potential partners in the state agencies and even private industry.

Other species that were evaluated included the basalt daisy, northern wormwood, and White Bluffs bladder-pod. These species all had a very limited distribution due to their specific habitat requirements, and thus a low

potential to impact WSDOT projects (See Figure 3)(WDNR and BLM 2000). There was also low agency interest in these species.

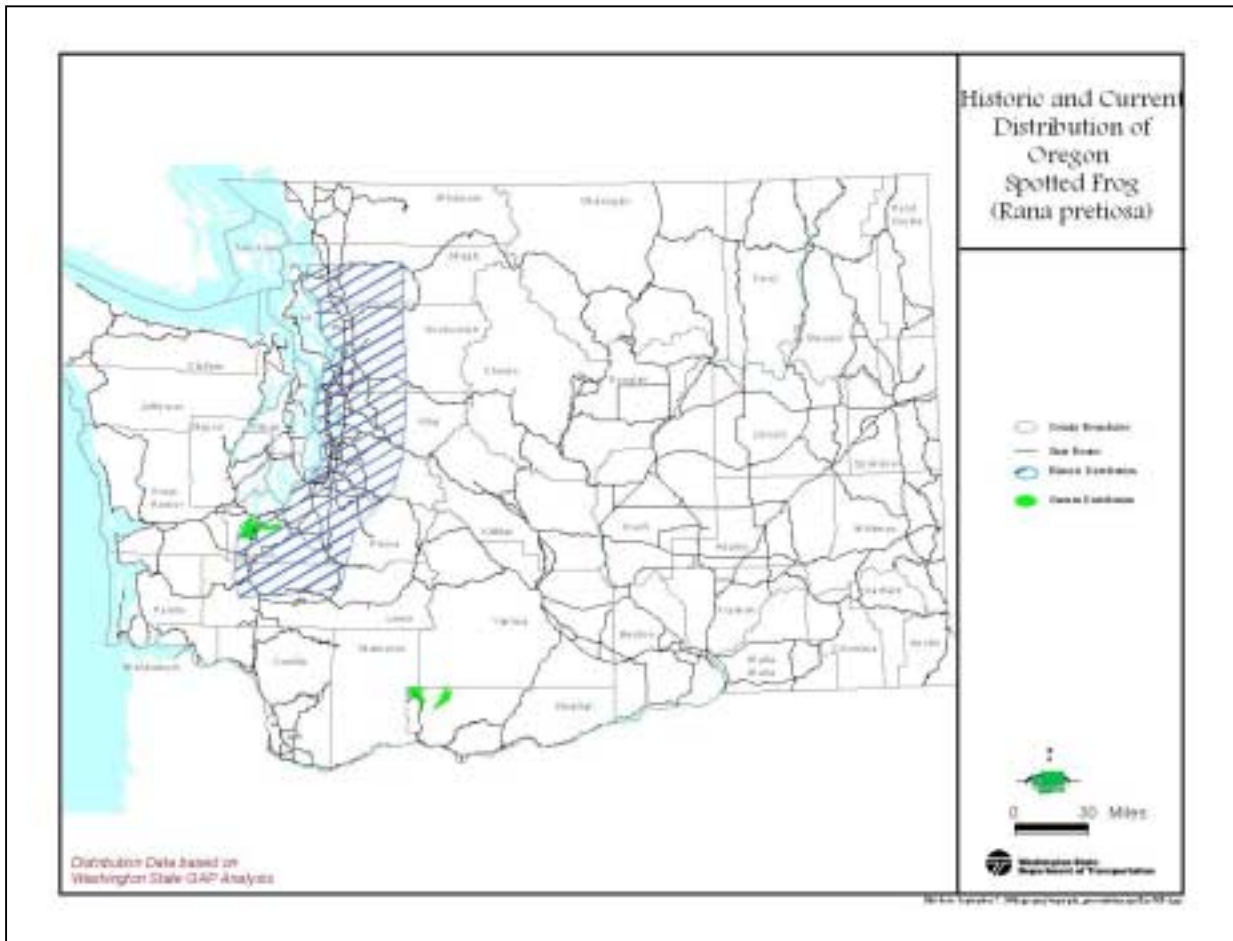


Fig. 1. Distribution of Oregon Spotted Frog

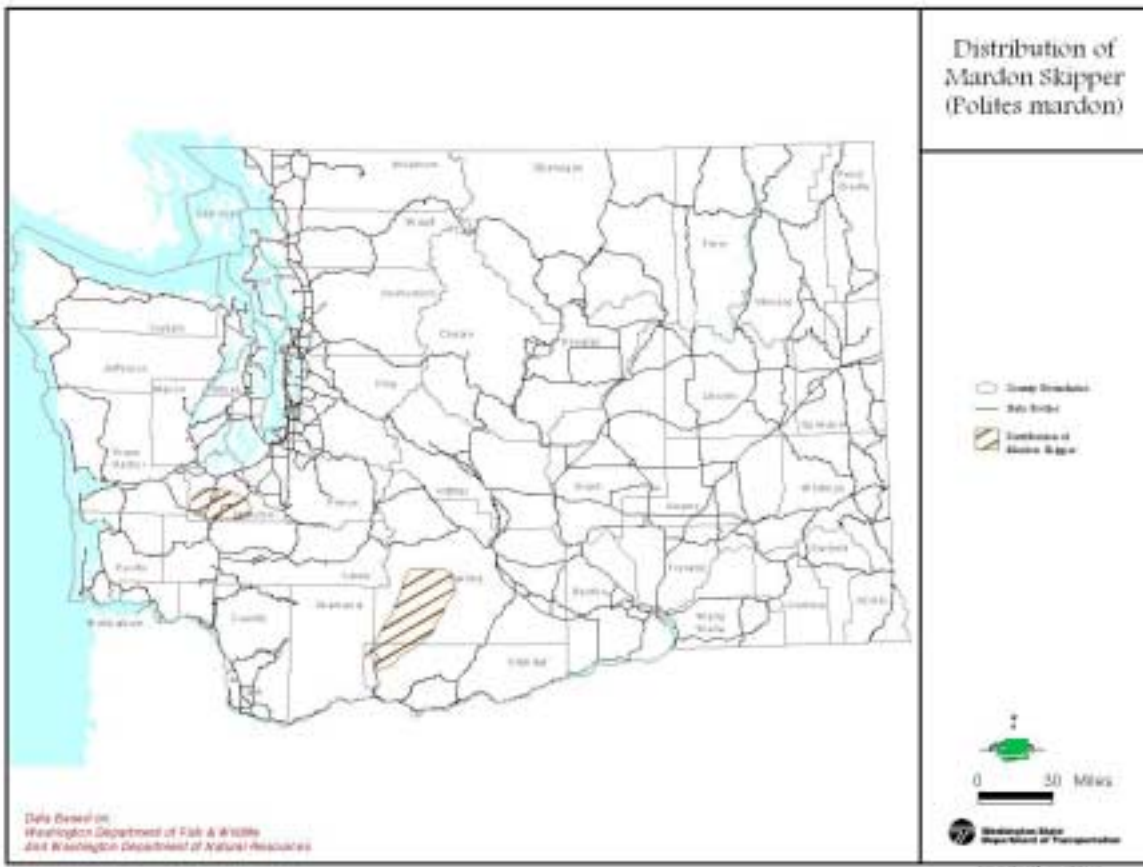


Fig. 2. Distribution of Mardon Skipper

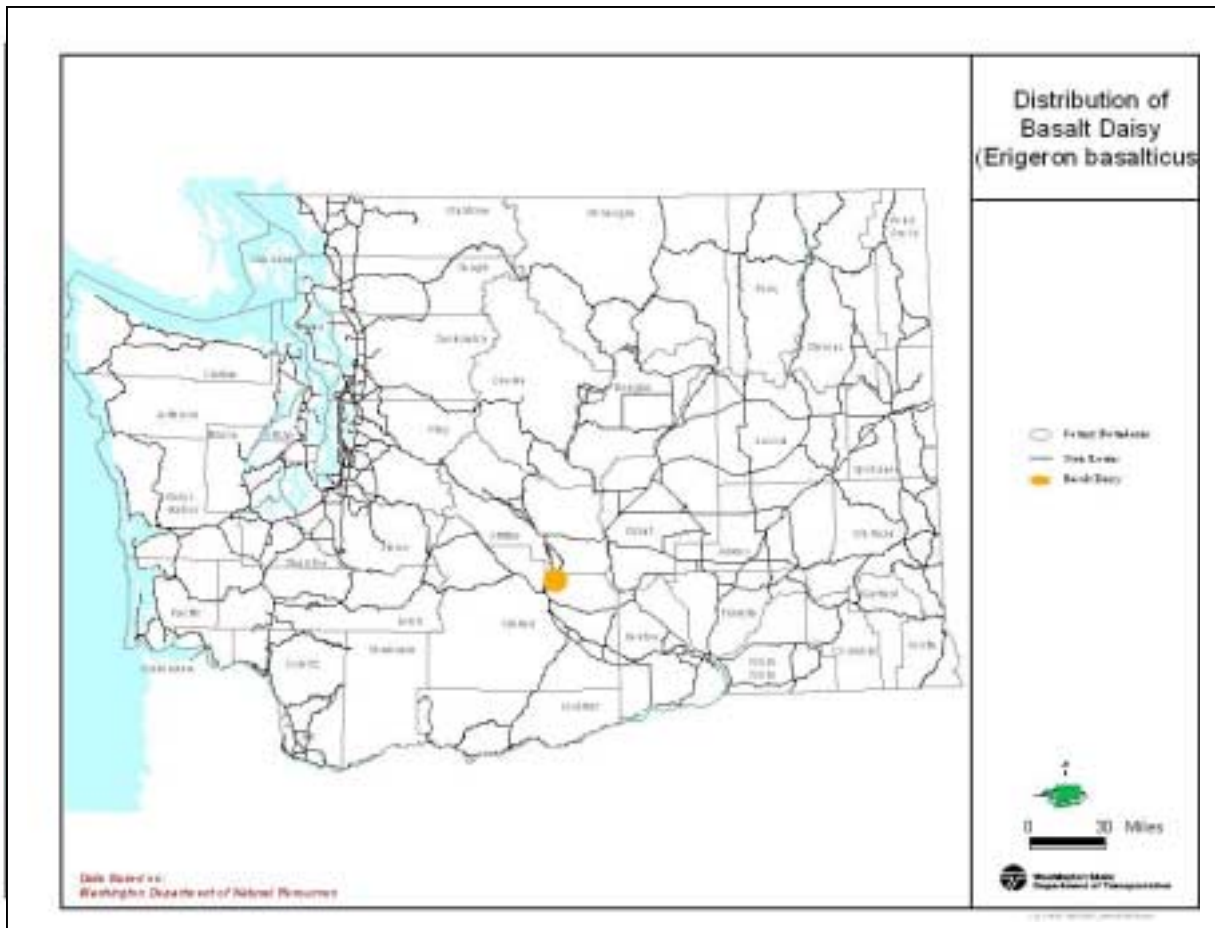


Fig. 3. Distribution of Basalt Daisy

Once we established our species of interest, we reviewed the literature to identify information needs. The main information gap for both species was: What constitutes suitable habitat? For the frogs, there is a lack of information on what constitutes suitable breeding habitat, and suitable over wintering habitat (Watson et al. 2000). Thus, there is no definitive method for separating suitable occupied or unoccupied habitat from unsuitable but "similar " habitat. When completing section 7 ESA consultations, all suitable habitats for a listed species is considered occupied, unless surveys using a method that has been approved by USFWS are completed to document that the habitat is unoccupied at the time. Washington is a state with a wet, temperate climate, resulting in the presence of numerous wetlands. Most highways intersect wetlands at some point, and depending on their location within the state, many projects cannot be completed without some kind of wetland impact. Without additional information on what constitutes suitable habitat for Oregon spotted frogs, the potential for ESA impacts to projects was very high. In response to this information need, we contracted with several other state agencies, and a private timber company to complete two separate studies on four separate (the remaining) populations of frogs. The studies focused on identifying wintering habitat and oviposition habitat.

We contracted with WDFW and the WDNR to complete the Mardon skipper research. This project focused on answering basic questions concerning the distribution and habitat locations of the species. In the Puget Sound area, the species is associated with glacial outwash prairies, while in the southern Cascades, it is associated with grassy savannas among the ponderosa pine woodlands. As in the case of the spotted frog, the habitats preferred by the Mardon skipper are a common habitat type associated with many state highways, especially in the South Puget Sound and the southern Cascade areas. The purpose of the research on the Mardon skipper was to be able to distinguish potentially suitable habitat and occupied habitat from unsuitable and unoccupied habitat.

Results

The spotted frog wintering study was completed in 2000. Work was completed at all four of the sites known to contain spotted frogs. Frogs were captured and outfitted with transmitters. These radio tagged frogs were located throughout the winter, and once a wintering site was located, various habitat parameters were measured so that common characteristics of the sites could be identified. Some frogs remained in place through the winter, while others moved short distances. After the completion of the wintering study, the oviposition study began. It focused on locating and describing the characteristics of the ovipositioning sites. Ovipositioning sites were located by surveying for egg masses, and habitat parameters were measured. Numerous single and multiple ovipositioning sites were located at each study area. Completion of these two studies provided detailed information on the habitat parameters of the wintering habitat, and ovipositioning sites.

While these studies contributed greatly to the knowledge base on spotted frogs, and they provide insight into the types of habitats that the frogs use, the information still needs to be developed into a habitat model that can be easily applied in the field by WSDOT biologists. We anticipate developing the model in 2002. We will also seek USFWS's input to and approval of the habitat model.

There were five objectives established for the Mardon skipper study. The first objective was to conduct field surveys in the southern Cascades to establish the skipper's range and distribution. While the Mardon skipper has been observed in the southern Cascades, its exact distribution is unknown. Surveys were designed to focus on potentially suitable habitats located near the existing highways. The second objective was to develop a descriptive habitat model to allow WSDOT biologists to identify potential habitat. Like the spotted frogs, there are miles of highways bisecting hundreds of acres of grasslands, which may or may not be suitable. The model, which focuses on vegetation communities, is designed to screen out unsuitable habitats. The third objective was to develop a survey protocol to use to survey suitable habitat. The protocol describes how potentially suitable habitat should be surveyed. The fourth objective was to create a GIS map of known Mardon skipper sites throughout the state. The fifth objective was to conduct surveys for Mardon skippers and their habitat on WSDOT lands.

All of the field work for the Mardon skipper study was completed during the summer of 2001. Field work had to be conducted within a very short timeframe as the species has a one month flight period each year, which normally occurs between May and June. It is non-migratory and survives the winter by having the pupae hibernate over the winter.

The study located several new habitat areas along highways in the southern Cascades. Survey results were mixed as the skipper had a earlier than normal flight period in the southern Cascades, and a latter than normal flight period in the Puget Sound areas. The habitat model will focus on the identification of grassland communities that contain a specific species of fescue. The survey protocol will be a multi-year survey versus a single year effort (Potter 2001). The results of this study will allow WSDOT biologists to identify suitable habitat and conduct surveys for the species. Both the descriptive habitat model and the survey protocol will be sent to USFWS for their approval.

Implications

The proactive ESA approaches that WSDOT has implemented are designed to provide their biologists and the regulatory agencies with the tools they need to successfully complete the section 7 consultations under ESA. We have found that contributing to the research efforts on listed, or soon to be listed species, can lead to multi-benefits for the species, their habitats and WSDOT. We expect to continue this approach with listed and other soon to be listed species.

Biographical Sketch: Marion Carey is the team lead of the Wildlife and ESA group in the Biology Program in the Environmental Affairs office of the Washington State Department of Transportation. The group is involved in the preparation and review of biological assessments; creation and negotiation of programmatic biological assessments with USFWS and NMFS; creation and implementation of training courses on ESA, preparation of biological assessments, and wildlife issues; evaluating methods to reduce deer and elk vehicle encounters, and contracting out research projects which involve a broad range of issues from deer detectors to in water bank protection, endangered species, and habitat conductivity.

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