

## **White Paper**

### **Wildlife Monitoring in CFRP**

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#### **Introduction**

Vegetation monitoring in the CFRP program, while there is still room for improvement, has developed into an effort that is standardized, practical, and clearly understood by CFRP grantees. Selection of the six Core Ecological Indicators with adequate technical assistance and training has enabled grantees to conduct this monitoring consistently among projects.

To date, wildlife monitoring has not evolved to that level. Recommended protocols have been suggested and made available to grantees (*Monitoring Ecological Effects Handbook Four, 2006; Wildlife Monitoring for the Collaborative Forest Restoration Program: Protocols for Monitoring Birds, Turkey, Deer and Elk, 2008; and Wildlife Monitoring for the Collaborative Forest Restoration Program Working Paper 3, 2009*), yet only a small portion of grantees are doing wildlife monitoring and only a few of those are using recommended protocols (see *Wildlife Monitoring in CFRP Programs: A Phone Survey of CFRP Grantees, 2010* on the NMFWRI website). Wildlife monitoring has not been established as a priority and clear guidance on wildlife monitoring has not been provided to grantees.

While wildlife is not the central objective of the CFRP program, considering the needs of wildlife may help to ensure that CFRP projects truly strive to restore fully functional forest ecosystems.

After three years of conducting wildlife monitoring for CFRP projects and work to revise the Wildlife Monitoring for the Collaborative Forest Restoration Program - Working Paper 3 (2009), I offer the following thoughts. These opinions address: the value of wildlife monitoring to the CFRP program and ideas for improving upon the execution of wildlife monitoring should it be deemed important to CFRP.

#### **The Value of Wildlife Monitoring**

Monitoring of and community involvement in forest restoration activities under CFRP are key components of this successful program; they offer a strong and insightful foundation. Monitoring provides the necessary scientific data to improve upon the relatively new practice of restoring fully functional forest ecosystems while providing natural resources to support human communities. Community involvement is critical because it fosters local knowledge and management of forests in a manner that can help sustain those local communities and forest ecosystems in the long run. Restoration and maintenance of healthy forests cannot rely exclusively on dictated efforts from

government agencies but requires understanding and commitment from private landowners and land managers. Community involvement is also key because it produces partners in forest management rather than adversaries. The CFRP concept masterfully combines monitoring with community involvement to benefit both purposes.

Managing for and monitoring wildlife communities is a vital part of forest restoration efforts. Wildlife is at the apex of the forest ecosystem; receiving and requiring all components of the forest including its soil, water, climate, plant species, plant community structure, stand level and landscape level habitat configurations. Diverse and abundant wildlife communities indicate a fully functional forest ecosystem with the resilience to withstand and adapt to long-term environmental changes.

By monitoring the condition of wildlife communities before and after restoration efforts, we can be more confident that restoration work has not forgotten key elements of a fully functional forest ecosystem. Snags, down woody material, within stand structural diversity (particularly a multilayered canopy), and landscape level habitat diversity, and others, are components of a fully functional forest that are important to wildlife. These components may be overlooked if monitoring and forest management is focused on vegetation. By monitoring birds, butterflies and mammals, an indication of the existence of important habitat features in restored forests can be examined.

Another benefit of wildlife monitoring is that it offers a tool to educate and involve communities in CFRP. Because wildlife integrates all parts of an ecosystem, it offers a forum for educating people about what are fully functional forest ecosystems and how can we help to restore and maintain them. People are inherently attracted to wildlife, so learning about and monitoring wildlife is attractive. This can help to engage the community in CFRP projects. Wildlife provides a dynamic and exciting way for people to interface with and connect to forest ecosystems in a more personal way, encouraging them to care for these areas.

For the above reasons, wildlife monitoring is an asset to CFRP.

### **Ideas for an Effective CFRP Wildlife Monitoring Program**

Three types of wildlife monitoring appear appropriate for CFRP.

1. Short-term "implementation monitoring" for the duration of a typical CFRP project (three years) relevant to:
  - a. projects with wildlife as a central goal
  - b. projects interested in community involvement and education.
2. Long-term (15+ years) "effectiveness monitoring" to detect the effect of forest restoration on overall wildlife abundance and diversity.
3. Long-term "effectiveness monitoring" that examines specific wildlife responses to various forest treatment prescriptions (e.g. the effect of various snag densities on population levels of cavity

nesting species, the effect of prescribed fire on understory development and hence deer/elk and butterfly abundance and diversity).

To otherwise conduct wildlife monitoring may yield questionable or limited results.

Short-term “implementation monitoring” is only effective for very specific, short-term questions and goals, such as: What is the initial response of Abert’s or red squirrels to forest treatment activities? To attempt to do effectiveness monitoring (i.e. how effective is a particular forest treatment approach at restoring habitat for wildlife diversity) for 3 years will only provide information about how wildlife responds to the initial habitat change, including the disturbance, and will not indicate responses to the restored forest structure which will take many years to realize.

Long-term monitoring to examine trends in overall wildlife abundance and diversity should only occur on selected projects where data, including a solid pretreatment baseline, can be collected consistently by skilled people over a long period of time (~15 years). To detect changes in abundance and diversity of wildlife, methods like those offered in the *Wildlife Monitoring for the Collaborative Forest Restoration Program Working Paper 3* are appropriate. While not essential, encouraging the use of standardized methodology for all CFRP projects will produce a greater comparable data bank to best understand restoration effects. This type of monitoring can only provide speculations as to the reasons for observed changes. In order to determine the causes of change and to specifically direct restoration prescriptions, another more rigorous level of research and monitoring must occur.

Long-term monitoring and research to answer questions on specific wildlife responses to various prescriptions would provide forest managers with information to modify forest treatment prescriptions to accommodate specific wildlife needs.

Monitoring offers an excellent activity to involve the community in forest restoration work. It offers “hands-on” education that can be more meaningful than indirect means (lectures, documents). Because wildlife is charismatic and attracts public attention, it provides an excellent opportunity to educate the community about forest ecology, restoration and management. However, to rely on strictly volunteer and educationally driven monitoring to provide insight to wildlife responses to forest restoration will likely result in inconsistent results. Monitoring for the primary purpose of educating the community occurs in a different manner than monitoring for the purpose of collecting sound, scientifically credible data.

Community involvement in monitoring should be separated into two distinct efforts. One type of effort would focus on education as the primary purpose. That type of monitoring must be simple, require only short duration training, and provide an avenue to discuss key components of forest restoration. The Wildlife Sign Search described in *Wildlife Monitoring for the Collaborative Forest Restoration Program Working Paper 3* offers an example of such a method.

The other type of community involvement might be to include selected community members in long-term monitoring, where-by individuals work with professionals, assisting in their work and learning on

the job. This can be very effective with selected students interested in committing themselves to learn the intricacies of the monitoring methods.

Another key element to an effective wildlife monitoring program is to provide a means of taking the “lessons learned” from short and long-term wildlife monitoring and offering those as feedback to current and future CFRP projects. This feedback needs to be offered to all players in CFRP including grantees before, during and after projects, land management agencies, often in the position of developing restoration prescriptions, and the general public. Monitoring for the sake of some action or with good intentions has limited value unless the CFRP grantees, program administrators and land management agencies have easy access to monitoring information and are encouraged to use it to improve upon projects.

## **Summary**

We have an opportunity to reevaluate the successes and failures of wildlife monitoring in CFRP to build a stronger, scientifically sound and educational monitoring program. To summarize the above thoughts and recommendations:

- Diverse and abundant wildlife communities require all components of forest ecosystems. Including wildlife in monitoring is important to ensure that restoration work is not ignoring vital components of fully functional forest ecosystems.
- Wildlife monitoring facilitates community involvement and education in CFRP.
- Conduct short-term “implementation monitoring” of wildlife for projects with wildlife as a central goal and projects interested in community involvement and education. Include the community in short-term monitoring when methods are very simple and focus can be on education.
- Conduct long-term “effectiveness monitoring” to detect the effect of forest restoration on overall wildlife abundance and diversity.
  - Identify these projects early in the project planning phase.
  - Apply standardized methods across the state if possible.
  - Include students in this effort when possible.
- Conduct long-term “effectiveness monitoring” that examines specific wildlife responses to various forest treatment prescriptions.
  - Include students and research institutions in this effort when possible.
- Develop an effort to promote and support wildlife monitoring to current and future CFRP grantees.
- Develop a monitoring information feedback loop so monitoring information can be applied.

### **Literature Cited**

- Derr, T., M.A. Moote, J.B. Abrams, L. McCarthy, M. Schumann, M. Savagae, K. Lowe. 2006. Monitoring Ecological Effects Handbook Four. In Multiparty Monitoring Handbooks. NAU Ecological Restoration Institute.
- Parsons, D. and M. Savage. 2008. Wildlife Monitoring for the Collaborative Forest Restoration Program: Protocols for Monitoring Birds, Turkey, Deer and Elk. New Mexico Forest Restoration Series Working Paper 3, version 1. New Mexico Forest and Watershed Restoration Institute.
- Knutson, L., T. Derr, E. Krasilovsky. 2009. Wildlife Monitoring for the Collaborative Forest Restoration Program. New Mexico Forest Restoration Series Working Paper 3, version 2. New Mexico Forest and Watershed Restoration Institute.
- Knutson, L. 2010. Wildlife Monitoring in CFRP Programs: A Phone Survey of CFRP Grantees. New Mexico Forest and Watershed Restoration Institute, [nfmfwri.org](http://nfmfwri.org) website.