

**CONSERVATION RELIANT SPECIES & THE NORTHERN SPOTTED OWL:  
THE FUTURE OF CONSERVATION**

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## **Abstract**

Although Congress passed the Endangered Species Act in 1973, few endangered and threatened species have recovered. Scott et al. (2005, 2010) propose that the lack of delistings is a result of the prevalence of conservation-reliant species. This term describes species which due to the constant nature of the threats against them require management in perpetuity even following an attainment of their recovery criteria. In addition, Scott et al. (2005) propose Recovery Management Agreements (RMAs) to manage conservation-reliant species following delisting which would radically transform conservation management. The Northern spotted owl is known as one of the most controversial cases of species conservation. When logging was curtailed in the 1990s, politicians, bureaucrats, and biologists believed the species would easily recover. However, new and persistent threats to the species' viability, including the barred owl and climate change, transpired and thus, the Northern spotted owl is a conservation-reliant species. I conducted a legal document analysis to deem whether statutes provide a legal foundation for establishing the RMA approach as well as informational and interpretive interviews with key experts to unearth their perspectives on this new management strategy. Even though policies such as the *Revised Recovery Plan for the Northern Spotted Owl* (2011) as well as specific statutes of the ESA provide the legal means to manage the conservation-reliant Northern spotted owl under an RMA strategy, the conservation community is unwilling to embrace the rise of conservation-reliant species. The reluctance of the conservation community illustrates the prevalence of old guard environmentalism which is unable to adapt as conservation dilemmas evolve, posing a significant threat to resolving environmental problems.

## **The Endangered Species Act: A Success or Failure?**

In 1973, Congress enacted the Endangered Species Act (ESA) in order to stem the decline and extinction of various species. This piece of legislation is esteemed by environmentalists as the strongest environmental regulation implemented in the United States and the U.S. Supreme Court declared that the ESA is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation” (Kostyack and Rohlf 2008, 17). Despite this, the statute remains under criticism for the scarcity of species recovered and delisted from the Endangered Species List (Stokstad 2005). In November 2011, 1383 species were listed under the ESA as endangered or threatened; however, United States Fish & Wildlife Service (USFWS) has delisted only 51 species (U.S. Fish and Wildlife Service 2011a). Since 1973, merely 23 of these 51 species were deemed recovered (U.S. Fish and Wildlife Service 2011a). As Representative Richard Pombo (R-CA) stated “Without meaningful improvements, the ESA will remain a failed managed-care program that checks species in but never checks them out” (Stokstad 2005, 2150).

The legislative intent of the ESA is the recovery of threatened and endangered species. In other words, the goal of the act is for the population of the species to be self-sufficient<sup>1</sup> and “to bring the species to the point at which protection provided by the Act is no longer necessary” (Scott et al. 2005, 383). When the ESA was written in 1973, the common perception was that recovery of endangered and threatened species would be relatively uncomplicated and easily attainable (Scott et al. 2010). At that time, many viewed the decline in species health as a result of anthropogenic factors through either the destruction of habitat or direct take<sup>2</sup>.

## **Conservation-Reliant Species: The Recognition of a New Problem**

However, as mentioned above, very few species have reached recovery. This suggests that under the ESA, we may need to interpret recovery differently<sup>3</sup>. Kostyack and Rohlf argue that,

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<sup>1</sup> Dan Rohlf, in discussion with author, January 27th, 2012.

<sup>2</sup> Dan Rohlf, in discussion with author, October 18th, 2011.

<sup>3</sup> Dan Rohlf, in discussion with author, January 27th, 2012.

“Many species now depend on habitat or ecological processes so altered by human activity that these species will need intensive management efforts on an ongoing basis simply to ensure their continued existence” (2008, 18). J.M. Scott et al. refer to these species as “conservation-reliant species” and define this term as “species that can maintain a self-sustaining population in the wild only if ongoing management actions of proven effectiveness are implemented” (2005, 386). In regards to the ESA, the recognition of conservation-reliant species entails an abandonment of the statute’s “emergency-room mentality” in which species are rushed in and protected from the severity of extinction.<sup>4</sup> However, to deal with conservation-reliant species, we need a “long-term care facility mentality” in which we perpetually manage species.<sup>5</sup>

Scott et al. (2005) list a set of characteristics often possessed by conservation-reliant species which include:

- Threats to the species continued existence are known and treatable
- The threats are pervasive and recurrent...
- The threats render the species at risk of extinction, absent ongoing conservation management
- Management actions sufficient to counter threats have been identified and can be implemented...
- Federal, state, or local governments--often in cooperation with private and tribal interests--are capable of carrying out the necessary management actions as long as necessary... (384).

The lack of delistings suggests the proliferation of conservation-reliant species. In fact, the analysis conducted by Scott et al. (2010) suggests that of the species on the Endangered Species List, 84% are conservation-reliant. For example, prescribed fires in jack-pine forests are needed in order to sustain necessary habitat for the Kirtland’s warbler (*Dendroica kirtlandii*; Scott et al. 2005). Populations of the gray wolf will require movement of individuals to maintain genetic viability.<sup>6</sup> Although the population size of the grizzly bear in the greater Yellowstone area proliferated and the USFWS delisted the distinct population segment (DPS) as it satisfied the recovery criteria, the decision was overturned by the Federal District Court of Montana as “the postdelisting management provided insufficient protection and ordered the species relisted” (Scott et al. 2010, 92).

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<sup>4</sup> Dan Rohlf, in discussion with author, October 18th, 2011.

<sup>5</sup> Dan Rohlf, in discussion with author, October 18th, 2011.

<sup>6</sup> Dan Rohlf, in discussion with author, January 27th, 2012.

Another paramount example of a conservation-reliant species is the Northern spotted owl (*Strix occidentalis caurina*).

### **The Conservation-Reliance of the Northern Spotted Owl**

The protection of the Northern spotted owl is viewed as one of the most controversial conservation conflicts in the United States. As Sharon Levy remarks in *BioScience*, “The reclusive bird became a potent symbol of the increasing need for, and costs of, endangered species protection” (2004, 95). Although the USFWS regarded the Northern spotted owl as possibly endangered in 1973, the agency failed to list the species as threatened until 1990 (Welch 2000). The biological studies conducted regarding the Northern spotted owl suggested that the population decreased significantly due to the decline and parcelization of old-growth forests which the owls primarily rely on for habitat (Guynup and Ruggia 2004). The protection of the Northern spotted owl resulted in the prohibition on the harvesting of old-growth timber stands which ultimately pitted environmentalists against loggers (Guynup and Ruggia 2004). In particular, the Northwest Forest Plan (NWFP) was executed by the Clinton administration in 1994 to address consternation regarding the decimation of old-growth forests and the impact this anthropogenic activity produced on species that rely on that habitat (Noon and Blakesley 2006; Guynup and Ruggia 2004). By the year 2000, the trees felled on millions of acres of federal land in the Pacific Northwest declined by 90 percent from the height of the boom in harvesting (Welch 2009).

However, despite the protection of the old-growth forests, the Northern spotted owl continued to decline (Welch 2009; Guynup and Ruggia 2004). Contradictory to expectations, the decline in the number of individuals of the species persisted (Welch 2009; Guynup and Ruggia 2004). As Eric Mortenson wrote in *The Oregonian*:

Nothing’s worked. Not the clamp on federal timber sales that hammered Oregon’s mill towns. Not the lawsuits or the listing as an endangered species. The belated work to retain and restore its favored old-growth habitat will take decades to unfold. Twenty plus years of trying to save the [N]orthern spotted owl and it’s still slipping away (2011).

Many scientists suggest that the range expansion of the barred owl (*Strix varia*) is the cause of the Northern spotted owl's continued decline (Buchanan et al. 2006). However, scientists still harbor uncertainty regarding the exact cause of the expansion of the barred owl's range (Levy 2004). The barred owl occupied primarily eastern forests prior to the early 1900s when this species slowly migrated west and ultimately appeared in Oregon in 1974 (Levy 2004; Kelly, Forsman, and Anthony 2003). Wildlife biologists conjecture that the changes in land-use caused by European settlers throughout the continent resulted in the creation of small woodlots, and enabled the barred owl to journey across the Great Plains (Levy 2004). In addition, they hypothesize that the range expansion is a result of the barred owl's "increased adaption to coniferous forests" and "climate change, such as an increase in summer rainfall and mean temperature, in regions outside of the Barred Owl's historical range" (Kelly, Forsman, and Anthony 2003, 46). The Northern spotted owl, a specialist in habitat and prey, is being outcompeted by the barred owl, a generalist (Levy 2004). Furthermore, the barred owl at times kills Northern spotted owls or mates with them, producing infertile offspring (Guynup and Ruggia 2004). As Eric Forsman observed, "There is a new wrinkle in an old problem" (Guynup and Ruggia 2004).

In addition, climate change is a new threat to the viability of the Northern spotted owl (Yardley 2011). Several models predict that the effects of climate change will produce winters with more rain and warmer temperatures and summers with less rain and cooler temperatures in the Pacific Northwest (Oregon State University 2010). These effects of climate change, biologists predict, will negatively affect the survival of fledglings and recruitment of individuals and thus decrease the population growth of the Northern spotted owl (Oregon State University 2010). In addition, the predicted summer conditions may decrease the population of prey species that the Northern spotted owl depends on including woodrats and northern flying squirrels (Oregon State University 2010). The new threats, including the infringement by the barred owl and climate change, are ongoing. As Scott et al. point out, "The magnitude of the threats, and the likelihood that most

will increase in intensity and pervasiveness, suggest that few additional species are likely to be delisted without some form of continuous management to keep them from slipping back into a threatened or endangered condition” (2005, 384).

### **Recovery Management Agreements: The Possibility of a New Approach to Species Conservation**

As these species will require continual management to remain viable due to the persistent nature of the threats against them, an organizational or agency body will need to undertake management of these species even following delisting (Scott et al. 2005). In order to manage conservation-reliant species and the perpetual threats to their viability, Scott et al. (2005) propose the idea of Recovery Management Agreements (RMAs). According to Scott et al., RMAs “will consist of an enforceable contract between the federal wildlife agency and another entity with the authority and financial resources to provide the necessary conservation management for the foreseeable future” (2005, 387). Interestingly, Scott et al. state that this other management entity could include “a federal land-management agency or a state, tribal, or municipal government; in appropriate circumstances, it could be a non-governmental organization with the resources to fulfill long-term obligations and a track record of doing so successfully” (2005, 387). This management strategy will encompass biological criteria and objectives stemming from the recovery plan of the species in conjunction with legal stipulations (Scott et al. 2005). In another article, titled “Conservation-Reliant Species and the Future of Conservation,” Scott et al. refer to this management strategy as “conservation-management agreements” in which “partnerships [develop] among federal and state agencies and nongovernmental organizations” (2010, 95). Consequently, this new form of management, will completely transform conservation management and the notion of recovery (Scott et al. 2005). As Scott et al. argue, “Delisting of a species is a legal or regulatory step, not necessarily the endpoint of management” (2010, 95). Thus, management of a species is needed

following delisting to ensure that the health of the species does not deteriorate again (Scott et. al 2010).

### **Examining the Future Management of the Conservation-Reliant Northern Spotted Owl**

As the Northern spotted owl is a conservation-reliant species, it is important to consider how we will manage persistent threats to this species' viability in the future. In order to determine if RMA management is legally permissible, I examined the ESA as well as the *Revised Recovery Plan for the Northern Spotted Owl* (2011). In addition, to compare how future scenarios of Northern spotted owl conservation as a conservation-reliant species would be managed under the existing provisions of the Endangered Species Act and RMAs, I conducted interviews with several experts. These interviews were informational and interpretive in that the thoughts and ideas derived portray how RMAs could be implemented and also the experts' perspectives on this approach. Furthermore, the interviews help elucidate in what ways the case of the conservation of the Northern spotted owl could inform the legal proceedings and management of other conservation-reliant species. In the interviews, the questions began with broadly asking the actors of their opinion of the ESA and the RMA approach and then moved into more detailed questions on legal, jurisdictional, political, economic, and biological aspects of the RMA approach (please see Appendix A). I interviewed 12 actors including agency personnel at the main federal agencies involved in Northern spotted owl conservation: USFWS, United States Forest Service (USFS), and Bureau of Land Management (BLM). I also included the perspective of the Oregon Department of Fish and Wildlife to further comprehend the concerns that prevail at the state level. Furthermore, I incorporated the perspective of non-governmental organizations (NGOs) including two environmental non-profit organizations and a timber harvesting company.

While conducting the legal document analysis and interviews, I considered the ideas and considerations of this issue along five different dimensions including--legal, political, jurisdictional, economic, and biological. Although these dimensions cannot always be distinctly separated from



each other, they are important to bear in mind as species conservation encompasses these various branches of knowledge, not solely biology. Thus, I interviewed not only ecologists and wildlife biologists, but policy-makers and bureaucrats as well.

To situate my research, I focus specifically on the Northern spotted owl in Oregon. I decided to focus my research on this species because, as described above, the conservation of this particular species is one of the most controversial. In addition, the Northern spotted owl represents a prime example of a conservation-reliant species. The case of the Northern spotted owl also illustrates how the threats to the species' viability has evolved over time and how these threats were never considered by Congress in the framework of the ESA. I decided to situate my research geographically in Oregon because at a smaller geographical scale, the relationships across different land use types (e.g. BLM lands, national forests, and wildlife refuges) and the various actors that are coupled with those land use types could not be fully explored. For example, approximately 30 million of the 63 million acres of the state of Oregon consist of forested land (Oregon Forest Resources Institute 2011). Thus, almost half of Oregon's landholdings comprise of forests. In addition, approximately 18 million of the 30 million forested is federal land and thereby over 50% of Oregon's forested land is federally managed (Oregon Forest Resources Institute 2011). This distribution of land types results in some interesting controversies in how forests and the species that inhabit these ecosystems are managed. While policies such as the *Revised Recovery Plan for the Northern Spotted Owl* (2011) as well as specific statutes of the ESA provide the legal means to manage the conservation-reliant Northern spotted owl under an RMA strategy, the conservation community is reluctant to embrace the rise of conservation-reliant species.

#### Actors, Agencies, & Legal Documents

The three key federal agencies involved in the management of the Northern spotted owl are the USFWS, USFS, and BLM. The ESA provisions require the USFWS to produce a recovery plan for listed species; however, the recovery plan is not a legal mandate. The recovery plan includes

actions to be implemented to promote recovery and delineates recovery criteria to determine when to delist the species. The USFWS then oversees the implementation of the recovery plan. The USFS follows the activities outlined in the recovery plans as much as possible in addition to managing habitat and monitoring the populations of species. The USFS, which resides under the Department of Agriculture, is divided into nine regions. Region 6 is the Pacific Northwest region and consists of Oregon and Washington. The purpose of the regional offices is to act as a bridge between the Washington D.C. office and the national forests. The Pacific Northwest Research Station is one of the research programs established by the USFS and is responsible for conducting research on national and other forests as well as their ecological components in the Pacific Northwest.

Furthermore, the USFS is substantially involved in the management of the Northern spotted owl as this agency manages a majority of the species' habitat. The USFS also follows the NWFP and implements the actions the agency acquiesced to under this agreement. Similar to the USFS, the BLM is a federal land management agency that also manages a significant portion of Northern spotted owl habitat. In addition, the BLM attempts to comply with the management actions proposed in the Northern spotted owl recovery plan.

The following section provides a brief description of the key experts I interviewed for my research. Bruce Marcot<sup>7</sup> is a senior research scientist for the USFS. Before the USFWS listed the Northern spotted owl under the ESA in 1986, Marcot worked in a local Forest Service office and analyzed Northern spotted owl habitat needs. In 1990, he was invited to lead the scientific part of a multi-species assessment of old-growth forests, including the Northern spotted owl. This Scientific Analysis Team (SAT) evolved into the Forest Ecosystem Management Assessment Team (FEMAT) which prompted the formation of the NWFP. Tom Spies,<sup>8</sup> who also works with the USFS, is a

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<sup>7</sup> Bruce Marcot, interview by Taylor Riso, February 3rd, 2012.

<sup>8</sup> Tom Spies, interview by Taylor Riso, January 30th, 2012.

forest ecologist at the Pacific Northwest Research Station lab in Corvallis, Oregon. As mentioned previously, this research station is one of several research labs throughout the country that is under the jurisdiction of the USFS. In addition, the Pacific Northwest Research Station conducts research on national and other forests as well as their ecological components in the Pacific Northwest. Spies participated in FEMAT as well as co-edited the anthology *Old Growth in a New World: A Pacific Northwest Icon Reexamined* (2008) which assesses how the conceptions of old-growth forests in the Pacific Northwest have evolved. Elaine Rybak<sup>9</sup> works in the Pacific Northwest Regional Office of the USFS as a wildlife biologist and as the Threatened and Endangered Species Program Assistant. Eric Forsman<sup>10</sup> is one of the most well-known names in the Northern spotted owl controversy as he highlighted the decline of the species in the 1970s. As a wildlife biologist, he researched the Northern spotted owl as early as the 1970s while completing his Master's and Ph.D. In addition, he participated as a member of FEMAT and currently works at the Pacific Northwest Research Station.

Paul Henson<sup>11</sup> is the Oregon State Supervisor of the USFWS and oversees all the endangered and threatened species conservation and regulatory issues in the state. He also collaborates with the state and congressional delegations and manages the four USFWS satellite field offices throughout Oregon including Bend, Newport, La Grande, and Roseburg. Brendan White<sup>12</sup> has worked with the USFWS at the Oregon office for 17 years and works on the NWFP and section 7 consultation of the ESA in relation to the Northern spotted owl. He was the lead of the *Revised Recovery Plan for the Northern Spotted Owl* (2011). Jesse D'Elia<sup>13</sup> works at the Pacific Region USFWS office as the Endangered Species Recovery Coordinator. D'Elia is involved in recovery assessments that the

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<sup>9</sup> Elaine Rybak, interview by Taylor Riso, February 13th, 2012.

<sup>10</sup> Eric Forsman, interview by Taylor Riso, February 14th, 2012.

<sup>11</sup> Paul Henson, interview by Taylor Riso, February 6th, 2012.

<sup>12</sup> Brendan White, interview by Taylor Riso, February 8th, 2012.

<sup>13</sup> Jesse D'Elia, interview by Taylor Riso, February 10th, 2012.

agency produces annually and five-year status reviews of species as well as downlisting and delisting of species.

Bruce Hollen<sup>14</sup> started working for the USFS in the 1990s, approximately during the explosion of the Northern spotted owl controversy. He currently works for the BLM as the Oregon and Washington State Office Threatened and Endangered Wildlife Lead and is responsible for the management of wildlife on BLM lands. Martin Nugent<sup>15</sup> is the Threatened and Endangered/Sensitive Species Coordinator at the Oregon Department of Fish and Wildlife (ODFW). As a result of section 6 of the ESA, the ODFW works in cooperation with the USFWS and other federal agencies to manage listed species.

Lowell Diller<sup>16</sup> is the senior biologist for the Green Diamond Resource Company in northern California which primarily harvests timber. He oversees the company's habitat conservation plan (HCP) for the Northern spotted owl which he instituted in 1992. With the invasion of the barred owl and the additional stress this places on the Northern spotted owl, the company worried that the USFWS may list the species as endangered and prompt the collapse of their HCP with no Northern spotted owl population to maintain. Diller emphasizes that the company stresses the importance of maintaining Northern spotted owls on their land.

Furthermore, Diller discovered that with a scientific collecting permit Green Diamond could conduct a barred owl removal experiment on their private land to determine the impact of the barred owl on the Northern spotted owl. The USFWS encouraged the company to conduct the pilot study to provide the agency with a basis to conduct the full-blown barred owl removal experiment. The company began the study in 2009 and intends to conduct it for four years. Although the results are still preliminary, the study suggests that when the company removes barred

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<sup>14</sup> Bruce Hollen, interview by Taylor Riso, February 17th, 2012.

<sup>15</sup> Martin Nugent, interview by Taylor Riso, February 21st, 2012.

<sup>16</sup> Lowell Diller, interview by Taylor Riso, February 16th, 2012.

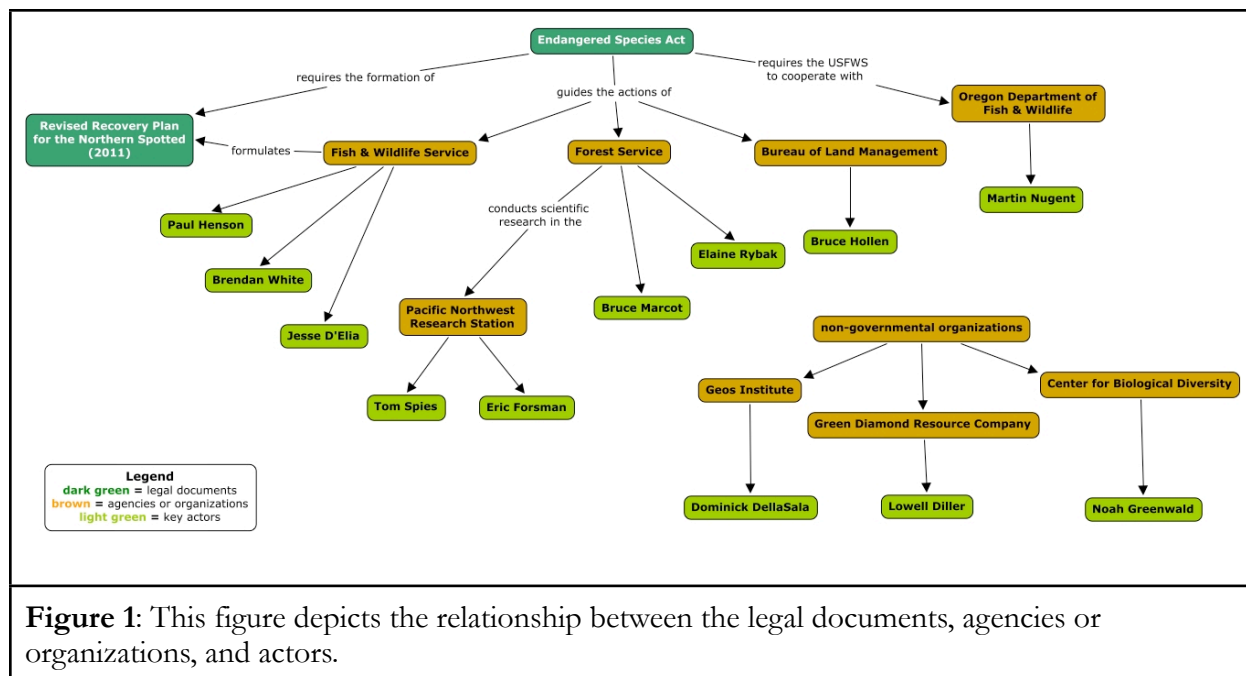
owls from historic spotted owl territories, the Northern spotted owls return. However, Diller cautions that these preliminary results may not apply to other locations throughout the Northwest. The Northern spotted owls may be able to return because the barred owls have more recently invaded northern California and the barred owl population density is lower there than in Oregon and Washington. In addition to overseeing the Green Diamond HCP, Diller participated in the 2008 Northern Spotted Owl recovery plan as well as on the Barred Owl Working Group.

Dominick DellaSala<sup>17</sup> is the president and chief scientist of the Geos Institute, a non-profit organization that acts as a bridge between science and policy for climate change adaptation and mitigation. In addition, he was part of the USFWS Northern Spotted Owl Recovery Team from 2006 to 2008. Thus, DellaSala possesses a perspective both on the threat of climate change as well as Northern spotted owl conservation. Noah Greenwald<sup>18</sup> is the Endangered Species Director at the Center for Biological Diversity, a non-profit organization that works to conserve species. Greenwald is involved in helping species attain listing status and designation of critical habitat as well as halting projects that result in damage to the health of species. In addition, he was involved in challenging the most recent version of the Northern spotted owl recovery plan, specifically the designation of critical habitat by the Bush administration. To see the relationships between the actors, agencies or organizations, and legal documents of my research, please see Figure 1 below.

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<sup>17</sup> Dominick DellaSala, interview by Taylor Riso, February 15th, 2012.

<sup>18</sup> Noah Greenwald, interview by Taylor Riso, February 23rd, 2012.



### Legal Document Analysis

In this portion of my analysis, I examine the legal dimensions of the RMA management strategy for the Northern spotted owl and analyze legal documents and policies, specifically the *Revised Recovery Plan for the Northern Spotted Owl* (2011) and statutes of the ESA, by applying them to the management of conservation-reliant species and the implementation of RMAs.

#### *The Endangered Species Act*

The intent of the ESA is outlined in section 2(b):

The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.<sup>19</sup>

Interestingly, the first purpose stated in the act is to protect habitat in which endangered and threatened species reside in. This is intriguing given that currently conservation revolves around species, not ecosystems. Section 2(a)(5) discusses involving states as well as “other interested

<sup>19</sup> Endangered Species Act of 1973, 16 U.S.C. § 1531 et seq. (1973): 1.

parties” in conservation.<sup>20</sup> In addition, this clause permits the federal government to incentivize these entities to become involved through funding and other motivations and thus lends support for the RMA management strategy.

Under section 3 of the ESA, endangered species are defined as “any species which is in danger of extinction throughout all or a significant portion of its range”<sup>21</sup> while threatened species are defined as “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range”.<sup>22</sup> Furthermore, section 4(a)(1) outlines the criteria to determine if a species is endangered or threatened and warrants protection under the ESA. These criteria include the following:

- (A) the present or threatened destruction, modification, or curtailment of its habitat range;
- (B) overutilization for commercial, recreational, scientific, or education purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.<sup>23</sup>

Section 4(f)(1) of the ESA discusses the generation and implementation of recovery plans to conserve all listed endangered and threatened species. Specifically, recovery plans must include “objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list.”<sup>24</sup> The legislation’s discussion of delisting suggests that if a species meets its recovery criteria, the USFWS can delist the species even if the threats (as defined in section 4(a)(1)) to a species viability still exist, provided that the threats have diminished.

Furthermore, “The Secretary, in developing and implementing recovery plans, may procure the services of appropriate public and private agencies and institutions, and other qualified

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<sup>20</sup> Ibid.

<sup>21</sup> Ibid: 2.

<sup>22</sup> Ibid: 4.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid: 9.

persons.”<sup>25</sup> This suggests that conservation of species may involve non-federal entities. Under the RMA management paradigm, the body in charge of management would follow the biological requirements outlined in the recovery plan. Thus, the notion of RMA management appears to correlate with this clause of the ESA.

Section 6 discusses that the USFWS must cooperate with the states and their governmental agencies in conservation efforts of listed species. In addition, section 6(d)(1) asserts that the Secretary of the Interior is allowed to contribute funding to states and their agencies who establish programs to promote the preservation of species. Specifically, section 6(d)(1) supports the allocation of funding to states and their agencies “to assist in development of programs for conservation of endangered and threatened species...and recovered species pursuant to section 4(g).”<sup>26</sup> Although limited discussion of collaboration between state agencies or across states occurs in the act, it seems unreasonable that the provisions outlined in section 6 would also not extend to a coalition of state agencies under an RMA management strategy. This collaboration between state agencies may be exceedingly valuable in the management of a species, such as the Northern spotted owl, that crosses jurisdictional boundaries. To further support this, section 6(d)(2)(D)(ii), in discussing the portion of the expenditures financed by the federal government, states that “the Federal share may be increased to 90 percent whenever two or more States having a common interest in one or more endangered and threatened species, the conservation of which may be enhanced by cooperation of such States, enter jointly into an agreement with the Secretary [of the Interior].”<sup>27</sup> This relates to the possible management of the Northern spotted owl under an RMA following delisting. If the states of California, Oregon, and Washington entered into an RMA

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<sup>25</sup> Ibid: 10.

<sup>26</sup> Ibid: 13.

<sup>27</sup> Ibid.



agreement to manage the owl collectively, a significant majority of the management costs could be shouldered by the federal government.

Furthermore, section 6(d)(1)G) states that the Secretary of the Interior, in determining the allotment of funding received by the states, must deem “the importance of monitoring the status of recovered species with a State to assure that such species do not return to the point at which the measures provided pursuant to this Act are again necessary.”<sup>28</sup> This clause only discusses the role of states in continuing to observe the health of the recovered species. Although this clause fails to mention the involvement of the state in conducting active management of recovered species, the wording implies the implementation of active management by the states in order to prevent the relisting of species.

*Revised Recovery Plan for the Northern Spotted Owl (2011)*

As discussed previously, Section 4(a)(1) of the ESA states the five components that determine whether a species is given endangered or threatened status and granted protection under the ESA. However, in the recovery plan, the section titled “Delisting” states that, “In order to consider a species recovered, analysis of five listing factors must be conducted and the threats from those factors reduced or eliminated” (U.S. Fish & Wildlife Service 2011b, vii). In regards to the Northern spotted owl, this suggests that the USFWS could delist the species if it met its recovery criteria even though the constant threat to its viability may still be present. This is because if the Northern spotted owl population recovered to meet its recovery criteria, the constant threats to the species may not be entirely eliminated, but they would be reduced.

The objectives of the recovery plan are as follows:

- 1) Spotted owl populations are sufficiently large and distributed such that the species no longer requires listing under the ESA;
- 2) Adequate habitat is available for spotted owls and will continue to exist to allow species to persist without the protection of the ESA; and
- 3) The effects of threats have been reduced or eliminated such that spotted owls are unlikely to become threatened again in the foreseeable future (U.S. Fish & Wildlife Service 2011b, ix).

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<sup>28</sup> Ibid.

Again, the recovery objectives illustrate that if the Northern spotted owl population increases, sufficient habitat exists, and the threats are diminished, the USFWS is permitted to delist the species. In addition, this suggests that the ESA would not need to be amended to allow the USFWS to delist species that continue to require active management as a result of the continual nature of the threats to their viability.

In the Introduction, the recovery plan states that it predominately concentrates on five objectives. Two of these objectives concern the threats of the barred owl range expansion and climate change. These objectives interestingly discuss the need to deal with these persistent threats to the Northern spotted owl's viability. The fourth objective is "The potential need for State and private lands to contribute to spotted owl recovery in certain areas" (U.S. Fish & Wildlife Service 2011b, I-2). This objective suggests the importance of involving state and private landowners in the management of the Northern spotted owl. The discussion of incorporating non-federal bodies into conservation actions appears very similar to the RMA management strategy.

Interestingly, many concepts of the recovery plan seem to fit well into the RMA dynamic. First of all, "The ultimate goal of this Revised Recovery Plan is to recover the spotted owl so that protections afforded by the ESA are no longer necessary, allowing us to delist the species" (U.S. Fish & Wildlife Service 2011b, I-4). Thus, the aim of the recovery plan coincides with the aim of the RMA approach with which species are delisted following the attainment of their recovery criteria. In addition, the recovery plan explains that, "Its objectives describe a scenario in which the spotted owl's population is stable or increasing, well-distributed, and affected by manageable threats" (U.S. Fish & Wildlife Service 2011b, I-4). This statement suggests that the USFWS acknowledges that the species would require management following delisting. Furthermore, the term "manageable threats" suggests that the USFWS recognizes the continuous nature of threats against the Northern spotted owl. In addition, the previous statement suggests that the agency would delist the Northern spotted

owl if the USFWS mitigated the threats against the species viability, even if these threats were not completely or totally abolished; however, the question remains of who would be jurisdictionally responsible following delisting.

Under the section titled “Delisting Process,” the recovery plan describes how the rule-making procedure of delisting a species necessitates an evaluation of the five considerations dictated in section 4(a)(1) of the ESA that determine the listing of a species. The recovery plan refers to these considerations as “listing factors” (U.S. Fish & Wildlife Service 2011b, I-5). The recovery plan also emphasizes that to consider delisting the Northern spotted owl, the species needs not to have attained every one of its recovery criteria dictated in this document. Specifically, the recovery plan states that, “the Service may judge that, overall, the threats have been minimized sufficiently and the species’ population health is robust enough to be considered for delisting” (U.S. Fish & Wildlife Service 2011b, I-5). This is consistent with the notion of managing conservation-reliant species under an RMA approach.

In considering habitat management, the recovery plan “completed a range-wide, multi-step habitat modeling tool...that will help evaluate and inform...the consideration of management options by State, Tribal, or private landowners as recommended by this Revised Recovery Plan” (U.S. Fish & Wildlife Service 2011b, I-9). Once again, the recovery plan emphasizes the importance of incorporating states, tribes, and private individuals in the conservation management of the Northern spotted owl. This correlates to the notion of involving non-federal entities in the management of species in the implementation of RMAs.

#### Thoughts and Perspectives of the Conservation Community *The ESA as a Success, But...*

Although many actors emphasized issues of implementation with the act, all ultimately viewed the ESA as a success. Specifically, several stressed that a primary goal of the ESA is to prevent extinction and that the act achieves this goal by effectively preventing species extinction from

occurring. Nevertheless, if the goal of ESA is to prevent extinction and not promote recovery, we are not providing species with an opportunity to thrive. This stresses the significance of transforming management to provide species with this chance.

Marcot criticized the ESA for its species-centric focus. As Marcot pointed out, the introduction of the act not only discusses species but ecosystems as well. Marcot, as a biologist, highlighted the importance of using an ecosystem approach versus a single-species approach to more effectively and efficiently tackle conservation. He urged that the act could be improved with complementary regulations and a greater focus on protecting ecosystems. Similarly, Rybak highlighted that the ESA stresses the importance of ecosystems, but management by federal agencies often only focuses on species. To emphasize the prevalence of this criticism, one actor even referred to endangered and threatened species as the “currency of conservation.” Hollen argued that although the ESA stresses preserving ecosystems, conflict in implementation arises with attempting to agree on conserving these ecological communities. Coinciding with Marcot’s and Rybak’s criticisms, Spies pointed out that with the predicted affects of climate change, focusing on species conservation may be more troublesome than focusing on preserving ecosystems. DellaSala also urged that the USFWS fails to apply the clause on preserving ecosystems fully and effectively. However, he as well as several actors stressed that Congress fails to allocate adequate funds to the agency to perform conservation actions.

Henson, in contrast, emphasized that the ESA is situated in the middle of the highly polarized political environment which impacts the implementation of the act. He stressed that the act is, in fact, a great environmental law, but the implementation forces us as a society to reconcile conservation with the fundamental governmental values of individualism, private property, and personal freedoms. Henson articulated that while the act drives us to confront this issue, much of the language of the ESA is left to interpretation. To further emphasize this point, White reiterated that the USFWS can always acquire further knowledge about how to implement the act more

effectively and efficiently. Rybak, on the contrary, pointed to section 7 of the ESA as the most problematic for the USFS. This is because the agency is often delayed in undertaking various actions as it is required to consult with the USFWS first. Rybak also emphasized that we need to distinguish between whether the problems of species conservation stem from the failure of the ESA or the failure of the government to correctly implement the act.

Interestingly, Forsman asserted that the management of the Northern spotted owl from a legal perspective is under the jurisdiction of the USFWS; however, the USFS and BLM are the main agencies influencing the species as these agencies manage most of the Northern spotted owl's habitat. Similar to the views of Scott et al. (2005, 2010), Forsman remarked that when Congress passed the ESA in 1973, many thought the issue of threatened and endangered species would be relatively easy to resolve. In Spies' opinion, the struggle to correct the threats to species viability is increasingly difficult to rectify with additional pressures of changes to the landscape. He suggested that this accounts for one reason why few species have been delisted. Similar to Spies' opinion, Rybak emphasized that the lack of delistings is not a defect of the act itself. She asserted that the scarcity of delistings arises from the increasing number of species threatened as a result of anthropogenic impacts on habitat. Specifically, she stressed that the lack of delistings illustrates only that many species are not yet recovered, which does not necessarily reflect the deficiencies of the act. The other implementation issues of the ESA Spies highlighted include budgetary obstacles and the lack of data. However, Spies also asserted that the ESA is a powerful act as a result of its strong language that mandates action.

However, Diller stressed that listing a species under the ESA prevents people from undertaking proactive conservation measures. Diller viewed a major limitation of the ESA as failing to generate incentives to preclude the listing of species. In addition, he emphasized creating a coalition between timber companies, environmental NGOs, and governmental agencies to implement conservation practices for species in order to preclude listing. Like Henson, he

recognized that with our highly polarized political environment, initiating action is extremely difficult. In regards to the small number of species delisted, Diller asserted that this is because the ESA provides no motives for private landowners to become involved in conservation efforts. Forsman also stressed that the ESA lacks the jurisdictional power to protect old-growth forests on nonfederal (i.e., state and private) lands. Forsman highlighted that the USFWS is only trying to recover the Northern spotted owl on federal land. Hollen as well stressed incorporating private landowners into conservation management, specifically using section 6 of the ESA and HCPs to alter individual behavior. Diller's support of involving non-federal entities stems from his experience with the success of Green Diamond's HCP. Moreover, Forsman viewed maximizing the available habitat for the Northern spotted owl as the only viable means to save the species and thus emphasizes the importance of incorporating state and private land into conservation.

Greenwald highlighted that issues of implementation also arise as a result of persistent criticism of the legislation. This criticism comes from not only those who oppose the ESA but environmental groups as well. In relation to this, Nugent argued that a major issue stemming from the implementation of the ESA is litigation. While this has been useful to ensure that the USFWS executes proper conservation measures, litigation commandeers the agency's agenda. A significant portion of the agency's budget is devoted to responding to litigation instead of implementing recovery actions. Nugent emphasized that the role of NGOs has expanded and that these entities often use the action to pursue their own agendas.

It is surprising that the conservation community regards the ESA as a success given the wealth of implementation problems that accompany it. This seems to correlate with several actors' view that the problems arising in species conservation are not a failure of the act, but due to our interpretation and execution of the legislation. This relates to the old guard environmentalism's reverence for environmental legislation that arose in the 1970s which is viewed as the birth of the environmental movement. The conservation community appears hesitant to highlight the

deficiencies of the ESA in fear that the entirety of the protective measures for species will be dismantled. However, it is important to discern that the ESA may not be as successful as it should especially given the scarcity of delistings that have occurred since 1973.

*Delisting: A Problem?*

When asked whether they possess any concerns about delisting species, several actors replied “why should I?” and asserted that delisting is a priority of the ESA. As White emphasized, one distinct goal of the USFWS is to recover species and delist them. However, in spite of delisting being a main goal of the ESA, controversy and conflict tend to arise when the USFWS attempts to delist a species.

Similar to the implementation issue of funding emphasized by several actors, Henson stressed that for the USFWS to recover more species, the agency needs financial support from Congress to implement actions dictated in recovery plans. In addition, Henson developed the acronym HUM (a.k.a. hammer, uncertainty, and money) to decipher the reasons why many species remain listed. First of all, when a species is delisted, it provides the species with a regulatory hammer; with delisting, the species loses that regulatory hammer and is left with less powerful regulation to ensure protection. In regards to uncertainty, many scientists, conservationists, and biologists are hesitant to accept the risk of delisting a species unless they possess absolute certainty that the species is recovered. Lastly, species listed under the ESA receive additional funding for recovery actions and management than those that are not. White also emphasizes that many people argue to keep a species listed even when it meets its recovery criteria.

In relation to Henson’s view, White stressed that many people fear losing the ESA as a means to protect that species; however, White acknowledged that it is unfair to keep recovery species listed as many other endangered and threatened species could use that funding. In addition, Diller also emphasized the difficulty of delisting species due to the social and political climate and that various individuals possess their own motivations for detaining species from delisting. Moreover, Henson

stressed that simply because the USFWS delists a species does not mean the agency abandons them and ceases management. He regards the delisting of species in a positive light and emphasized that delistings demonstrate the success of the ESA to tax payers as well as the agency's acknowledgement of their successes.

When asked about the few number of species that the USFWS has delisted, White stressed that he worries more about species going extinct than those species that have not yet recovered. He asserted that the USFWS is working towards recovery of many species, but recovery requires time; especially, as White highlighted, for species residing in exceedingly old habitat. Similarly, D'Elia pointed out that many species require a considerable amount of time to reach their recovery goals due to the anthropogenic effects that may take years, or decades, to remedy. In spite of the few number of delistings, D'Elia regards this as understandable given the number of species in existence and that species usually are not listed until their health is in a dire state. Greenwald views the lack of delistings as a speciesist argument against the ESA as recovery is a long-term process and asserted that the ESA effectively prevents extinctions.

Forsman, on the other hand, is not surprised by the few number of delistings due to the complexity of achieving recovery for many species. For example, he stressed that in the last 40 or so years that we have been working towards recovery, our population continues to increase and this population places further demands on the habitat of imperiled species. In fact, he argued that in the future, recovering species will be more and more difficult due to future population growth.

Although Forsman views the ESA as unsuccessful for some species, he supports the enactment of laws such as the ESA and National Forest Act to protect the wealth of biodiversity that exists.

Forsman highlighted that the few species that recovered was a result of the simplicity of mitigating the threats against these species. Furthermore, Forsman argued that long-term ecological changes exceed the scope of the ESA and that the act lacks flexibility. Hollen, however, emphasized that the scarcity of delistings is not the result of some deficiency of the legislation as few extinctions have



occurred since Congress enacted the ESA. He also argued that we cannot be expected to have reversed hundreds of years of anthropogenic decline in the last 40 or so years.

Interestingly, Rybak asserted that if a species cannot exist without assistance, the species must remain listed under the ESA. Similarly, Greenwald argued that if a species remains threatened by extinction, the species should continue to be listed and protected by the ESA. This suggests that these actors favor that species remain listed under the ESA when the threats to the species viability are constant even if the species has met its recovery criteria. Furthermore, Rybak questioned the authors motivation for emphasizing the delisting of species with the RMA management strategy.

Conversely, Diller stressed the lack of incentive for collaboration in order to achieve species delisting as also contributing to the scarcity of species recovered. For example, in the case of the Northern spotted owl, Diller pointed to private landowners as possessing no motivation to contribute to the conservation of this species; in fact, several regard the barred owl as finally resolving this problem by inducing the Northern spotted owl to become extinct. This appears to frame the issue as still a conflict of owls versus jobs and suggests that we, as a society, have failed to progress beyond this in the last 20 or so years.

Several actors emphasized that few species have been delisted because of centuries of anthropogenic impact on ecosystems which will require a significant amount of time to reverse. The forty or so years since 1973 is not enough time to expect the ecosystems to be recovered. However, this suggests the conservation community's inability to recognize that the nature of the threats against species have changed. The conservation community is unable to accept that the threats to species viability, contrary to the perspective of the ESA, are persistent and thus the conservation community remains unable to acknowledge a new notion of recovery.

#### *RMA Management*

It was surprising to me how little support I encountered for managing conservation-reliant species under RMAs. For example, one actor described the RMA approach as a "gray-zone" in

which we continue to manage species and devote significant amounts of funding to execute conservation practices. Other actors described the RMA approach as “outsourcing management.” In particular, Rybak views the RMA management as an intermediary measure between the severe imperilment of a species and a species no longer requiring management.

In regards to managing species under RMAs, Marcot expressed concerns about this management paradigm; specifically, he views the RMA approach as mirroring the current political interest to reduce the scale of government and privatize. However, it seems that Marcot’s support of an ecosystem approach to conservation correlates to the notion of RMA management as a non-federal entity may be better equipped to manage entire ecosystems than a federal agency due to detailed, local knowledge of specific ecosystem processes and clearer accountability. Henson, on the other hand, encouraged the idea of management of species under RMAs. He emphasized that the implementation of the RMA could reduce uncertainty regarding the health of species following delisting. Henson’s support for RMA management stems from his endorsement of delisting species from the ESA.

Spies also thinks that RMAs could possibly work in theory if this management strategy includes sufficient federal oversight. In addition, he suggested that the execution of RMA management could result in significant variance across RMAs. Due to the significant number of actors involved in the Northern spotted owl controversy, Spies asserted that the management of the species under an RMA could be extremely complicated. Forsman also expressed concerns about involving multiple stakeholders in RMA management because as more players become involved, each pursues their own agenda which results in ineffective management. Marcot proposed that the management of the Northern spotted owl under an RMA would be fractured and variable. In addition, Spies highlighted the significant political challenges to manage the Northern spotted owl under this approach as the species crosses three states boundaries and resides on both public and private land. Thus, he recommended that RMA management may be easier and preferable for

species that reside in a single jurisdictional area. Similarly, Marcot asserted that no other entity besides the federal government possesses the sway and power (especially, over different land types) to ensure that management of the Northern spotted owl would continue following delisting.

Nugent also argued that the federal government should retain management of species such as the Northern spotted owl due to its broad range and because it is migratory.

White endorsed the teamwork aspect of the RMA management strategy. In contrast to Spies's opinion, White asserted that the more diverse interests involved in the management of species, the more successful management is. He finds the aspect of a shared goal between various parties in the RMA approach very appealing. Nugent also emphasized the importance of involving stakeholders in RMA management. Specifically, he recommended obtaining the support of the public as well as landowners. Conversely, D'Elia views RMA management of the Northern spotted owl similar to the management currently occurring under the ESA and the recovery plan. Specifically, he pointed out that whether the agreement is regulatory or non-regulatory, all parties involved need to agree on management actions and how those would be implemented. D'Elia argued that if the NSO was managed under an RMA approach, the USFWS would still remain responsible for management as a result of provisions of the ESA.

In regards to the ideas of the recovery continuum and RMAs proposed by Scott et al. (2005), Rybak views these concepts as in the beginning stage and needing further development. She finds these concepts interesting but expresses frustration that the authors fail to further extrapolate how agencies such as the USFS can apply these concepts to species conservation. Specifically, the authors provide a recovery continuum of species but fail to suggest which species governmental bodies should focus conservation practices on. Although the recovery continuum classifies species depending on the extent of their recovery, this fails to help agencies to prioritize conservation efforts.

In addition, Rybak stressed that if RMA management of species is undertaken in the future, the ESA needs to be amended. Hollen also argued that the Northern spotted owl cannot be delisted unless we eliminate the threats to the species viability for its status relies on direct intervention, and thus the population is not self-sustaining. Similarly, Greenwald disagreed with the solution of RMAs proposed by Scott et al. (2005) as well as rejected the notion of the Northern spotted owl as a conservation-reliant species. Greenwald believes the management of the Northern spotted owl should remain under the jurisdiction of federal agencies, even following delisting, due to the threat of the barred owl and the reduction of habitat. This suggests a resistance to accept that even if threats to a species are manageable but persistent, the species may not require the full protection of listing, provided their recovery criteria has been met. Furthermore, this reluctance implies the inability to accept that achieving recovery will not be flawless, particularly given that threats to species viability continually evolve.

In regards to RMA management, DellaSala expressed concern about relinquishing management of the Northern spotted owl to a non-federal entity. Particularly, he emphasized the loss of checks and balances that will occur if a federal agency is no longer responsible for management. DellaSala remains suspicious of the RMA management paradigm as a result of his experience with executing the ESA. Specifically, he expressed concern about the issue of enforceability of the RMA approach and questioned whether management actions under this paradigm would be executed. He views the RMA strategy as leading to fewer checks and balances succeeding delisting and that this will result in less protection for species. For the Northern spotted owl, DellaSala expressed concern that this loss of protection will result in an increase in logging of old-growth forests that the Northern spotted owl relies on.

In contrast, Diller emphasized that he views the RMA as an entity claiming propriety over the recovery plan and ensuring its implementation versus the current model in which the ESA halts all activity. He also stressed that local bodies may be more successful at establishing relationships and

cooperation than the federal government. In relation to Diller's position, Forsman also emphasized that the most important conservation measure for the Northern spotted owl is to protect mature and old-growth forests, specifically on non-federal lands, and thus if RMA management succeeded with this, this strategy would be effective. Nugent, in addition, highlighted the importance of a management strategy, such as an RMA, remaining flexible. He stressed that our society pretends that we possess near perfect knowledge, but we still do not fully comprehend all the interconnections of ecosystems. Thus, an RMA approach needs to be able to easily adapt to future scientific discoveries. In the case of the Northern spotted owl, for example, the species faces the more recently developed threats of the barred owl and climate change which conservation strategies must adapt to.

Overall, the conservation community possesses an opposing, unfavorable view of RMA management. Several actors expressed concern that a non-federal entity would be unable to manage a species, such as the Northern spotted owl, whose range exceeds a single jurisdictional area. Interestingly, many actors also asserted that the implementation of RMA management would require amendments to the ESA. The actors' views suggest that the conservation community is unable to accept that recovery of species may not be flawless and achieved with a hands-off approach, and that the recovery of species will continue to require active management.

#### *Jurisdictional Responsibility under RMA Management of the Northern Spotted Owl*

Henson questioned whether new actors would be involved in the Northern spotted owl RMA, but suggested that the management might be effective under the responsibility of the California, Washington, and Oregon state fish and wildlife agencies. Spies, in contrast, highlighted that the states are unlikely to assume management of the Northern spotted owls as they are currently suffering financially and influenced greatly by local politics. Similarly, Forman pointed out that currently Washington and California are involved in the management of the Northern spotted owl to a greater extent than Oregon is. This suggests that under the RMA approach, the management of

the Northern spotted owl will not include Oregon state agencies. DellaSala views the forestry practices in Oregon as distressing and believes that the Oregon Department of Forestry would not conduct practices with the best intentions for the Northern spotted owl. In addition, funding provided to the Oregon Department of Fish and Wildlife by the Oregon Legislature to research and monitor this species was rescinded during the spotted owl wars. Thus, the possibility of state agencies in Oregon being jurisdictionally responsible for the management of the Northern spotted owl under an RMA is extremely unlikely. Interestingly, Henson imagined RMA management of the Northern spotted owl as consisting of different parties each being responsible for some part of management. To reiterate, Henson's support for an RMA managing the Northern spotted owl stems from his propensity to delist species that meet their recovery criteria.

White emphasized that more groups involved in management, leads to more public buy-in (i.e., support) which increases the effectiveness of management. Although Spies also suggested involving a variety of actors in the management of the Northern spotted owl, he emphasized the need for the strong presence of federal agencies. Spies appeared hesitantly supportive of the RMA management strategy and the management of the Northern spotted owl under this approach. Nevertheless, he seemed reluctant to remove a portion of jurisdictional responsibility of conservation management from federal agencies. Hollen also stressed that the federal land management agencies should remain in control of management of the species as they possess the expertise.

White also hypothesized that the management of the Northern spotted owl under the RMA would be under the jurisdiction of the federal agencies, including the USFS, BLM, and the USFWS. He also stressed that for this management paradigm to be successful, a lead entity would need to be instituted. For White, the best possible entity to serve as the supreme body is the USFWS as this federal agency already possesses the experience to manage wildlife. Furthermore, Greenwald asserted, like White, that since management of species will continue even following delisting, the

USFWS should be responsible due to their expertise. Greenwald, though, emphasized that the USFWS is also the most likely to receive funding from Congress to implement conservation efforts.

White's view of an RMA approach to manage the Northern spotted owl resembles the current management of the species under the NWFP. This suggests a reluctance to transfer the jurisdictional control of conservation management to a non-federal entity. Although White appeared to be open to the involvement of different actors in Northern spotted owl management in RMAs, he emphasized that the federal government must remain in control. D'Elia's comments also illustrate an unwillingness to entrust the management of previously threatened and endangered species to an entity other than a federal agency.

In addition, D'Elia emphasized that the USFWS already uses several mechanisms similar to the RMA approach. These mechanisms include candidate conservation agreements, candidate conservation agreements with assurances, and Policy for Evaluation of Conservation Efforts (PECE policy). Hollen also challenged the notion that RMAs are different than actions already pursued by the federal government. He views the RMA approach as similar to HCPs and emphasized that the effectiveness of HCPs varies broadly. Several other actors also highlighted the similarity between the RMA approach and HCPs. For example, Hollen emphasized that the actions Diller executes in the Green Diamond HCP would have variable degrees of success in other areas of the Northern spotted owl's range due to differences in the ecosystems. In contrast, Diller discussed that due to the high costs and substantial effort private landowners invest in HCPs, these individuals are committed to following this plan for an extensive period of time. This suggests that a conservation approach that involves non-federal entities, such as an RMA, is not always sporadic and temporary as these bodies have invested a significant amount of time and resources in management.

In regards to the Northern spotted owl under the RMAs, Rybak thinks that the federal agencies will continue to be jurisdictionally responsible for management. Rybak's views stem from her opinion that the ESA needs to be amended to allow RMA management. Nugent also postulated

that the ESA needs to be amended to permit the implementation of the management strategy. Rybak asserted that multiple parties need to be involved in the management of the Northern spotted owl. She views this as originating from the emphasis of the ESA on that we are all accountable for the recovery of species.

Forsman postulated that the RMA management of the Northern spotted owl would consist of private landowners and the states as well as an intermediary agency, such as the USFWS. His view of the RMA approach correlates to the notion described by Scott et al. (2005). However, he postulated that the USFWS would be the entity ultimately jurisdictionally responsible for the management of the Northern spotted owl under an RMA as a result of the stipulations of the ESA. In addition, Forsman's concern regarding the loss of Northern spotted owl habitat on state and private land emphasizes the need to incorporate these non-federal actors to a greater extent in the conservation of the species. A shift to an RMA approach may be an easy mechanism to acquire support from players outside of the federal sector.

Furthermore, DellaSala expressed concern about who would assume management of the Northern spotted owl if this species was managed under an RMA. DellaSala stressed that no other entity would more effectively manage the species than the USFWS. His emphasis on continuing management under the jurisdiction of the USFWS appears antithetical to his concern regarding the insufficient protection of ecosystems. Involving more local or community entities in management following the delisting of a species, may result in increased focus on preserving ecosystems rather than individual species. Similarly, Greenwald pointed to the loss of Northern spotted owl habitat on state and private lands. This loss of habitat on non-federal land suggests the importance of implementing an approach similar to RMAs; as this strategy will likely involve more non-federal entities in conservation management, a further reduction in habitat could be prevented.

Diller, in contrast, emphasized the importance of land type in determining who should be jurisdictionally responsible under an RMA approach. He highlighted that in coastal California



Northern spotted owls reside primarily on private land. Thus, he suggested that RMA management of this species in northern California could consist of a coalition between private landowners and the USFWS. His and Forsman's suggestions correlate to the notion of RMAs proposed by Scott et al. (2005). He emphasized that management of the Northern spotted owl under an RMA by private landowners may be preferable over management by a state or federal agency. He explained that this is because private landowners emphasize effectiveness and the inefficiencies that prevail in governmental bodies are curtailed in the private sector. Therefore, he suggested that as a result of the land types in the range of the Northern spotted owls, different bodies could be involved in the management of the species under RMAs. Specifically, as northern California consists primarily of private lands, Diller recommended a coalition between private landowners and industries; however, as Washington and Oregon consist of significant amounts of federal land, the jurisdictional power of the Northern spotted owl under the RMA strategy may be more suitable in the hands of the USFWS.

Several actors questioned whether the RMA approach is different from other management strategies that the USFWS implements. However, several also stressed the federal agencies as the best or only entities to be able to execute the RMA management strategy. This further illustrates the prevalence of the old guard environmentalism mentality. It is interesting and slightly ironic that many actors failed to express concerns about delisting but then failed to support the management of the species by an entity other than the federal government--given that with delisting, the jurisdictional responsibility of the species is no longer assumed by the federal government. It is important to recognize that the federal agencies are already overwhelmed and thus, if we want to preserve species, we may need to entrust non-federal entities with management.

#### *Biological Considerations about the RMA Approach*

It is important to consider if the Northern spotted owl would be impacted biologically in a different manner under an RMA than under current ESA provisions. Marcot conveyed

apprehension that the Northern spotted owl may suffer biologically under the RMA approach if the entity involved fails to fully uphold the management agreement. Spies, on the other hand, maintained that RMA management would not necessarily biologically affect the Northern spotted owl in a different manner than management under the ESA. He emphasized that this is because the management strategies emerge from the same plan but operate under two different administrative structures. Although, similar to Marcot's position, he highlighted that if complex jurisdictional issues arise with RMAs and the management agreement is not executed properly, this may cause the species to suffer biologically.

White, on the other hand, conveyed little concern that the RMA may impact the Northern spotted owl differently biologically than the ESA because both management paradigms would be undertaking the same management actions. As D'Elia views the management of the Northern spotted owl under RMAs as similar to management already occurring under the ESA and recovery plan, he expressed no concerns about an RMA causing different biological affects on the species. DellaSala asserted that RMA management may impact the Northern spotted owl differently biologically than the ESA if the management agreement failed to include adequate checks and balances and lacked funding. Rybak, however, emphasized that the difference between RMA management and the ESA is a political one, and thus she expressed little concern that the two management strategies will impact the Northern spotted owl differently biologically than the ESA. This is because she believes the management actions undertaken by an RMA would be no different than those dictated under recovery plans. The species' biological status is not different, but the same, under the two different management strategies. Similarly, Hollen argued that as an RMA would perform the same conservation efforts as the USFWS, no difference exists between the RMA approach and keeping the species listed. This is because the entities involved in management would be treating the species in the exact same manner.

Few actors expressed concern about the implementation of an RMA impacting the Northern spotted owl differently biologically than the ESA. If they expressed concern, this unease stemmed from possible issues of the agreement not being fully upheld. However, as several actors view the RMA approach and the ESA as invoking the same management strategies, few expressed concern that the RMA management would cause the viability of the species to suffer.

#### *Financial Considerations*

Concerning the cost of managing the Northern spotted owl into perpetuity, Marcot stressed the importance of our society abolishing the view of conservation as a tradeoff between owls and jobs. He suggested that, as a society, we must find a way to more fully integrate conservation into the future of the economy. Similarly, Henson described the perpetual cost of managing a conservation-reliant species such as the Northern spotted owl as a vexation; however, our society needs to accept this cost if we value wildlife as management requires funding. He insisted that our perspective on the costs in perpetuity must evolve if we want to conserve biodiversity. Diller asserted that we, as a society, lack the funds to expend this amount of capital on all endangered species. Nugent also argued that we will never possess enough resources to implement every recovery plan for all endangered and threatened species. Furthermore, Diller suggested that our society needs to determine which species to prioritize for conservation efforts. In addition, he stressed that we fail, as a society, to approach our capability to finance species protection, citing governmental expenditures on other goods and services, for instance the military. However, Diller highlighted the importance of financing the conservation of iconic species and those that possess social and cultural significance such as the Northern spotted owl. Greenwald asserted that the government must recognize species conservation as a primary consideration and that we, as a society, must devote capital towards the goal of protecting species. Nevertheless, Hollen stated that recovery is ultimately about the costs society chooses to bear.

White postulated that management of the species under RMAs would likely be less expensive than when it was listed anyway. Management under an RMA approach is likely to be less expensive given that following delisting the species will require less active management. In addition, he argued that if the government chose not to allocate funds towards management, the species would likely need to be relisted and require funding again. This suggests that Congress would appropriate funds to RMA implementation. Rybak viewed RMA management as costing a comparable amount to the management expense under the ESA. Nevertheless, this is still a significant cost. Concerning the perpetual nature of the costs of Northern spotted owl management, the funding of this management depends largely on the endorsement of the public.

In regards to funding the RMA approach, DellaSala suggested that if RMAs acted as an addendum to the USFWS, as dictated in the ESA, theoretically, Congress would allocate funding to this management strategy. Similarly, as White postulated that RMA management will consist of a collaboration of federal agencies, he suggested that the funding for the management of the Northern spotted owl under an RMA would continue to come from Congress. Hollen implied that funding for conservation is always beholden to Congress or whatever political party controls the White House. DellaSala also suggested the possibility of the federal government implementing a tax on entities whose actions degrade the habitat of species, such as developers, forestry companies, and various corporations. He described how the capital gained from the tax would go into a fund to finance the management of species under RMAs. However, DellaSala viewed this as very unlikely to occur as our society is resistant to raising taxes. To possibly finance the perpetual costs of managing the Northern spotted owl, Spies mentioned possibly combining federal government funding with financial assistance from environmental organizations. Nugent also emphasized the possibility of continuing to receive funding from the federal government. He highlighted the 1988 amendments to the ESA which requires monitoring of species following delisting. This statute, at least, provides a possible means for an entity to receive funding for a species following delisting.

The idea of RMA management intrigued Diller, but he questioned who would be responsible for financing this strategy. In regards to the management of the Northern spotted owl, Diller asserted that the cost of lethal control of barred owls is relatively low. This is primarily because of the reasonably low reproductive rate of the barred owl and because Diller proposed that we should not eradicate, but maintain, barred owls at a population density to promote coexistence with the Northern spotted owl. In contrast to Diller's view, Forsman views RMA management of the Northern spotted owl as costly for the entity in charge as this body must execute lethal control of barred owls. Diller, however, emphasized the monitoring component of Northern spotted owl management as expensive. Diller also stressed that if the RMA managing the Northern spotted owl was a coalition of state agencies, the federal government could provide funding to these state agencies.

Nugent, on the other hand, stressed that we cannot continue to rely on the charity of private landowners who often cannot use their land to gain profit due to the protection of the Northern spotted owl under the ESA. Under the RMA approach, species would be delisted which most likely would permit private landowners to increase activity on their land to an extent. However, Nugent suggested that the RMA could compensate landowners to not execute these activities so that these individuals are not unfairly burdened. This may also increase support for Northern spotted owl conservation if private landowners no longer view the species as a hindrance to gaining profit.

As emphasized in this section, another significant consideration of the RMA management paradigm is economic and how we will ultimately fund this management. A significant portion of the funding would most likely continue to come from Congress appropriations to the USFWS and the federal agency would then distribute this funding to the RMA management entities. A further economic consideration to ponder is that we will not be able to fund the conservation to perpetually manage all conservation-reliant species. Thus, our society needs to decide which species we should appropriate funding to and thus preserve.

*Incorporating NGOs into RMA Management*

The notion of RMA management is controversial in part because it suggests involving an entity that is non-governmental to assume the management of a species. Marcot seemed hesitant about incorporating NGOs into conservation management. As recovery is an extremely long-term process, he expressed concern that if the NGOs lost their incentives or interest in management, the Northern spotted owl would suffer. In opposition to Marcot's view, Diller supported the incorporation of NGOs into RMA management. While Marcot views NGO involvement in the RMA approach as unstable, Diller argued in support of NGO participation in conservation management. This is because these entities, if involved, would invest a significant amount of funds and effort into management and thus be dedicated to management in the long-run.

White was also open to involving different actors in RMA management of the Northern spotted owl, such as NGOs. Rybak, however, emphasized that NGOs are already involved in the management of species. Environmental groups assure that governmental agencies handle the management of species correctly. In addition, she pointed out that section 10 of the ESA involves parties such as private timber companies in the management of the Northern spotted owl with Safe Harbor Agreements. Similarly, Greenwald views the roles of the NGOs in conservation management as overseeing the governmental agencies to ensure the ESA and other legislation is implemented correctly and influencing the public to support species conservation. He believes that these roles of NGOs will continue in the future and that new actors will not be incorporated into management. These perspectives indicate that several actors expect the roles of the NGOs to not expand to incorporate the responsibility of managing the Northern spotted owl as proposed in the RMA approach.

Although DellaSala suggested that environmental NGOs, such as the Wildlife Conservation Society, could possibly be involved in management as these organizations possess a conservation mandate, he remained skeptical as these species organizations need endorsement from both federal

and nonfederal entities as well as the funding to implement management actions for the Northern spotted owl. Nugent, on the other hand, emphasized that the mix of land types a species inhabits may impact how involved an NGO would be in RMA management. If a majority of a species' habitat is private land, it is important to incorporate NGOs in conservation to protect and manage the species outside of governmental land. Nugent emphasized the federal government cannot alone manage conservation-reliant species. For management to be successful, a partnership must be formed in which different entities contribute to conservation through funding or land.

It intrigues me that several of these actors dismissed the notion of increasing the involvement of NGOs in conservation management especially given the recent expansion of environmental organizations into the political arena. In addition, these organizations continue to grow more powerful with increasing public support and financial resources. Incorporating NGOs into conservation management may be a more cooperative way to involve non-federal entities and their land base into conservation. Moreover, this would halt additional loss of habitat for species such as the Northern spotted owl. To repeat, the federal government is already overwhelmed by the need for species conservation. Thus, the involvement of entities such as NGOs, which possess significant land base, funding, and political backing, will remove a large burden from the federal government and provide many endangered and threatened species with the management they require to meet their recovery criteria.

#### *Applying the Five Dimensional Framework to Interview Synopsis*

As mentioned previously, I conducted the interviews along five different dimensions: legal, political, jurisdictional, biological, and economic. In regards to the legal dimension, several actors argued that the ESA must be amended to permit the RMA management strategy. However, I disagree with this argument due to the results from my legal document analysis. For the political dimension, the conservation community highlighted the implementation issues of the ESA including the lack of funding and bureaucratic distortion and that these issues will also transpire in

the implementation of the RMA strategy. The conservation community also expressed concern that if the RMA approach was adopted, the management strategy will likely be distorted by local politics. Specifically, actors argued that managing the Northern spotted owl under an RMA approach would result in an increase in timber harvesting which would further threaten the species' viability. The RMA approach may be impacted by the same political deviations as the ESA, as well as influenced by local politics; however, the implementation of the RMA approach may cause the more localized entities who become responsible for management and the community surrounding these bodies to accept the species, such as the Northern spotted owl, instead of regarding them with hostility. Jurisdictionally, several actors stressed that only the federal government possesses the capacity to implement the RMA management. However, I disagree with this because in the RMA approach, the federal government oversees the body in charge of RMA management and thus would ensure that the management strategy would be implemented. Recall that an RMA is an "enforceable contract" between the USFWS and another body and thus the RMA may be legally enforced (Scott et al. 2005, 387). Also, as previously stressed, the incorporation of more localized bodies into management of species, may reverse the local animosity towards the Northern spotted owl. In regards to the economic dimension, the conservation community proclaimed that if we, as a society, want to conserve species, we need to accept the perpetual costs that come with preserving conservation-reliant species, such as the Northern spotted owl. In addition, the conservation community expressed little concern that the Northern spotted owl would be impacted differently biologically under the RMA approach in comparison to management under the ESA. This is because the actions that would be implemented by the two different management strategies would be the same, as these actions stem from the species' recovery plan.

### **The Future of Species Conservation & Environmentalism**

Using various statutes of the ESA and the *Revised Northern Spotted Owl Recovery Plan* (2011), my legal document analysis illustrates that the RMA approach is a legally permissible strategy to manage



the Northern spotted owl and that the ESA will not need to be amended to authorize this approach. However, several actors stressed that to implement the RMA approach, the ESA must be amended. This perspective correlates to the notion of recovery that stems from the ESA's emergency room mentality. From a legal standpoint, provisions of the ESA and the *Revised Northern Spotted Owl Recovery Plan* (2011) support and authorize the involvement of non-federal entities in Northern spotted owl conservation efforts. The crucial piece that possibly legally permits the enactment of RMA management is that the federal wildlife agency continues to oversee management, although indirectly, but entrusts active management to a non-federal entity.

Once the USFWS delists a species, the states attain responsibility for the management of the species although the ESA dictates that the federal agency must continue to monitor the health of the species for five years following delisting. Thus, the notion of RMA management is not a significant deviation from mandates of the ESA given that the federal wildlife agency will continue to monitor the body responsible in an RMA to ensure that it acts according to the agreement. Nevertheless, in regards to RMA management of the Northern spotted owl, Oregon state involvement as an entity jurisdictionally responsible for management is unlikely due to a lack of state funding. In addition, various actors stress that issues of the ESA arise as a result of the implementation of the act. Specifically, these predicaments include the lack of funding appropriated by Congress to species conservation and political influence or distortion. It is thus likely that these factors will also influence the implementation of RMAs. Especially in the case of the Northern spotted owl, local politics have already significantly swayed the management of the species and this would likely continue under an RMA approach.

It is important to consider whether my analysis of the conservation of the Northern spotted owl may have skewed my general conclusions about conservation-reliant species and the adaption of the RMA approach. As mentioned previously, the management of the Northern spotted owl embodies one of the most controversial cases of species conservation. The battle to list the species

and grant it federal protection lasted decades. This may contribute to the conservation community's reluctance to accept an entity besides the federal government managing the species. However, like the Northern spotted owl, most threatened and endangered species listed under the ESA are charismatic and controversial. Therefore, an examination of a different conservation-reliant species would not have significantly impacted my conclusions. In addition, my interviews with several actors indicated the conservation community's general dismissal of the notion of conservation-reliant species and RMAs without reference to the specific case of the Northern spotted owl. Thus, overall, my analysis of Northern spotted owl conservation appears to not have significantly skewed my results and conclusions.

The notion of conservation-reliant species and RMA management highlights some current quandaries of the conservation movement. First of all, there is the question of how we mold conservation-reliant species to fit into the execution of the ESA which provides no guidance on how to manage them. Another issue is that our society must recognize that we cannot save every species and thus we need to determine means by which to decide which species we focus conservation efforts on. Furthermore, the idea of conservation-reliant species and RMAs represents a paradigm shift which, as demonstrated, the conservation community is unwilling to embrace. This reluctance is understandable given that states and local governmental entities may often oppose species conservation as it hinders development and economic activities. As discussed, a prime example of this is the Northern spotted owl which is often criticized for preventing timber harvests. Another example is the gray wolf reintroduction in the Greater Yellowstone Ecosystem which many ranchers continue to view as a significant threat to their economic well-being, livestock. Many worry that if management of a delisted species is transferred to a body outside of the federal government, these entities will resume activities that caused the species to be threatened in the first place. Also, many federal agencies may be reluctant to relinquish control of management given that these species have been their responsibility for multiple decades. However, it is important to

recognize that the USFWS lacks the time and resources to list and manage all endangered and threatened species. This is extremely prevalent given the backlog of petitions for species listings. For instance, in 2005, this backlog consisted of 286 candidate species and the mean number of years these species have waited for a listing decision is 17 years (Stokstad 2005).

In an RMA approach, on the other hand, other entities besides the federal government would be involved in management. Incorporating more localized bodies, such as state or local governmental agencies and NGOs, may help us move beyond the classic discourse of conservation halting economic growth. Specifically, a management strategy such as the RMA approach, creates a common goal for both localized entities and the federal government. The conservation of species would be viewed less by the local public as a paternalistic and obligatory notion. As several actors highlighted, conservation of endangered and threatened species is occurring primarily on federal lands and loss of habitat continues on state and private land. Thus, expanding conservation to state and private land would significantly improve the effectiveness of the conservation of species such as the Northern spotted owl which require large amounts of habitat. The unwillingness of the conservation community to adapt is even more worrisome to consider given that with the increasing effects of climate change and other ecological transformation in the future, the number of conservation-reliant species will continue to rise. I fear that by the time we culturally and politically accept the threat of conservation-reliance to biodiversity, we will have long passed the time in which we could have implemented an effective management strategy to preserve these species.

Moreover, I believe that these conservation issues stem from the broader problem of the pervasiveness of the old guard of environmentalism. After speaking with these actors, several implied that many still regard the conservation of the Northern spotted owl as a conflict between jobs and owls. This relates to the classic conservation controversy in which both environmentalists and non-environmentalists frame species conservation as antithetical to the right to private property and economic considerations. This is frightening to consider that we have not progressed beyond

this debate in the last 40 years. In the introduction of the anthology *Love Your Monsters: Postenvironmentalism and the Anthropocene* (2011), Ted Nordhaus and Michael Shellenberger discuss the pervasiveness of old guard environmentalism and “argue that environmentalism, in its failure to evolve, has become an obstacle to addressing these [environmental] challenges.” This suggests that the failure of the environmental movement to evolve creates an additional impediment to resolving environmental problems. In furthering this idea, in the chapter “Conservation in the Anthropocene: Beyond Solitude and Fragility” Peter Kareiva, Robert Lalasz, and Michelle Marvier argue that, “By pitting people against nature, conservationists actually create an atmosphere in which people see nature as the enemy...Conservation must demonstrate how the fates of nature and of people are deeply intertwined — and then offer new strategies for promoting the health and prosperity of both.” In order to manage environmental problems, our perceptions of the environment and the notion of conservation must evolve as new conservation dilemmas develop. Otherwise, in refusing to transform the old guard environmentalism framework, we will be unable to fully move forward into a postenvironmentalism era.

## Appendix A--Interview Questions

- 1) Can you tell me a little bit more about your involvement in the conservation of the Northern spotted owl?
- 2) Can you tell me more about what your organization does and how your organization is involved in the Northern spotted owl controversy?
- 3) What do you think of current status of the ESA?
- 4) What do you think of the scarce number of species that have been delisted?
- 5) Do you view the ESA as a success or as a failure?
- 6) In general, what do you think of the management of species under RMAs?
- 7) In the proposed management under RMAs, species would be delisted once they met a certain criteria. What do you think about that?
- 8) What do you think the management of the Northern spotted owl under RMAs would look like?
- 9) Who do you think would jurisdictionally be responsible for the management of the Northern spotted owl under RMAs?
- 10) Who do you think would do the best job of managing this species? And do you think different actors would be involved in the management of the Northern spotted owl that typically aren't responsible for the management of a species, such as non-governmental organizations?
- 11) There would most likely be different costs to the RMA approach; from your organization's perspective, who would possibly pay for this management? And what are your thoughts on the reality of costs born in perpetuity for species such as the owl if it indeed never recovers?
- 13) Do you think that the different management strategies, meaning the current ESA versus RMAs, would affect the Northern spotted owl differently biologically?
- 14) Let's imagine a scenario in which RMA management was only applied to a subrange of the owl population in which it would be possible to manage the Northern spotted owls under RMAs alongside current ESA provisions although in different portions of the species' range. Would you feel differently about RMA management if this management strategy of the species included only a portion of range versus the entire range?

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