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<u>**Chapter 2**</u>
Conserving the Future

2.1 Recommendation: All future land protection strategies should incorporate local, landscape and other necessary ecological scales and emphasize the importance of working lands in the surrounding landscape. (p.8)

2.2 Recommendation: Work collaboratively to develop a National Conservation Strategy for the National Wildlife Refuge System. (p.10)

2.3 Recommendation: Finalize a policy and implementation plan to guide land conservation efforts of the Refuge System. (p.11)

2.4 Recommendation: Complete an overhaul to the Land Acquisition Prioritization System to develop an adaptive prioritization model that helps determine the relative importance of potential land acquisition projects, both in completing existing acquisition projects and in beginning new ones. (p.11)

2.5 Recommendation: Complete law enforcement reforms and staff wildlife refuges with sufficient officers to protect wildlife and habitat and make refuges safe places for staff and visitors. (p.12)

2.6 Recommendation: Complete a step-down of the goals in the Service's 2010 *Strategic Plan for Responding to Accelerating Climate Change* for the Refuge System that prioritizes and guides future actions. (p.15)

2.7 Recommendation: Review and update policy for managing biological integrity, diversity, and environmental health on wildlife refuges. The benchmark for desired conditions must anticipate that climate-changed ecological conditions may preclude managing for historic conditions. (p.15)

2.8 Recommendation: Review and update Service policies on Comprehensive Conservation Planning and Wilderness Stewardship to reflect that climate-changed ecological conditions may preclude managing for historic conditions. (p.15)

2.9 Recommendation: Include climate change adaptation criteria in the overhaul of the Land Acquisition Prioritization System. (p.15)

2.10 Recommendation: Aggressively pursue changes to interagency fire policy that ensures the use of fire to protect the full range of natural resource values. (p.15)

2.11 Recommendation: Develop a program that maintains trained staff (like the fire program) for certified staff to respond to emergency incidents, such as oil and other hazardous material spills, and leads NRDA activities during events. (p.16)

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2.12 Recommendation: Review the farming program and identify opportunities to reduce carbon emissions and sequester carbon by restoring native vegetation. (p.16)

2.13 Recommendation: Complete a thorough assessment of water quantity needs and use the information to determine and prioritize appropriate actions to meet those needs. (p.17)

2.14 Recommendation: Assess water quality conditions and use the information to determine and prioritize appropriate actions to increase aquatic ecosystem health and resiliency. (p.17)

2.15 Recommendation: Seek conservation funding for cooperative management projects. (p.18)

2.16 Recommendation: Develop and provide collaboration and diplomacy skills training to employees to increase land management cooperatives among national wildlife refuges, local landowners, and other partners. The training should include educating private landowners on the benefits of conservation. (p.18)

2.17 Recommendation: Work closely with the USDA to align and prioritize Farm Bill conservation program funding in landscapes with the highest wildlife value. (p.19)

2.18 Recommendation: Educate high-priority landowners adjacent to wildlife refuge boundaries about relevant Farm Bill conservation programs. (p.19)

2.19 Recommendation: Become well versed on Farm Bill programs and opportunities through representation on each of the NRCS State Technical Committees. (p.19)

2.20 Recommendation: Seek out opportunities to partner with other agencies, non-government conservation groups and others to pool resources and leverage Farm Bill dollars in priority wildlife areas. (p.19)

2.21 Recommendation: Develop a comprehensive communications and outreach strategy regarding Refuge System's coastal and ocean areas management paradigm to help land managers understand its place within the suite of options for conservation. (p.19)

2.22 Recommendation: Working in concert with the Service's Landscape Conservation Cooperatives and the Refuge System Natural Resources Program Center, maintain, enhance and develop research partnerships and materials on marine issues to provide information on how to work with individual wildlife refuges as well as guidelines and guidance on types of appropriate and compatible research. (p.20)

2.23 Recommendation: Establish access to a research vessel and put together a qualified scientific research team to better inventory, monitor and manage Pacific marine wildlife refuges. (p.20)

2.24 Recommendation: Update the Refuge System's invasive species strategy to include implications of climate change and set clear priorities and performance measures to guide future work. (p.20)

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2.25 Recommendation: To leverage limited federal funding resources available to wildlife refuges and the U.S. Fish and Wildlife Service, mobilize 10,000 volunteers over the next 10 years to map, inventory and eradicate invasive species on wildlife refuges. (p.20)

2.26 Recommendation: Update the Wilderness Stewardship Policy to address the relationship between maintaining wilderness character and addressing the threats of climate change. (p.21)

2.27 Recommendation: Complete wilderness reviews for all national wildlife refuges within two years and make recommendations for wilderness designation of appropriate areas during the second round of CCPs. (p.21)

2.28 Recommendation: Lend expertise and assistance to the Service's International Conservation efforts to increase collaborative work on global issues and wildlife conservation projects. (p.22)

2.29 Recommendation: Begin an after-action review of the first round of CCPs, capture lessons learned, and update the planning policy prior to the next round of planning. The updated planning policy should consider how the plans meet not only the needs of the wildlife refuge, but also can collectively inform the Refuge System's management. (p.22)

2.30 Recommendation: In new comprehensive conservation plans, describe how the Service can use all its conservation delivery tools to project conservation benefits beyond refuge boundaries across the landscape. (p.23)

Chapter 3
Conservation Science and the Refuge System

3.1 Recommendation: Ensure that resources are sufficient to make investing in the application of science-based wildlife and habitat management a priority and promote a science-based approach consistently throughout the Refuge System. (p.25)

3.2 Recommendation: Proactively and consistently implement adaptive management. (p.25)

3.3 Recommendation: Ensure that scientific information collected by the Refuge System is applicable, and organized, stored, processed, accessible and distributed in a timely and reliable manner to support decision-making by resource managers and partners. (p.26)

3.4 Recommendation: Develop Service standards for credibility, efficiency and consistent application of science in planning and management. (p.26)

3.5 Recommendation: Institutionalize a nationally coordinated program to inventory and monitor wildlife and habitats across multiple spatial and temporal scales. (p.27)

3.6 Recommendation: As part of a National Conservation Strategy, collaborate with other federal land management agencies to integrate inventory and monitoring programs. (p.27)

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3.7 Recommendation: Articulate and direct research applicable to wildlife refuges to meet the Refuge System's research needs. (p.28)

3.8 Recommendation: Review the operations of Land Management Research and Demonstration wildlife refuges, which have been established to increase research and strengthen the demonstration of science. (p.28)

3.9 Recommendation: Support Land Management Research and Demonstration wildlife refuges that have been established and establish at least one Land Management Research and Demonstration wildlife refuge in each Landscape Conservation Cooperative to increase research and strengthen the demonstration of science. (p.28)

3.10 Recommendation: Encourage a culture of science and expand contributions to the scientific community through more sharing information and data, publishing scientific findings in peer-reviewed journals, and becoming participants and leaders in professional societies. (p.29)

Chapter 4
Human - Nature

4.1 Recommendation: Conduct an analytical review of and report on wildlife refuge hunting and fishing opportunities and rules and regulations, with special attention to opportunities offered for youth and people with disabilities. Guidance on expanding opportunities will accompany the report. (p.31)

4.2 Recommendation: Work cooperatively with state fish and wildlife agencies to prepare a strategy for increasing quality hunting and fishing opportunities on national wildlife refuges with the goal of doubling youth participation in hunting and fishing on national wildlife refuges by 2020. (p.31)

4.3 Recommendation: Support outdoor recreation access and opportunities on national wildlife refuges by improving coordination, effectiveness and efficiency among federal agencies through close work with the Wildlife and Hunting Heritage Conservation Council, the Sport Fishing and Boating Partnership Council, and other recreational entities. (p.31)

4.4 Recommendation: Develop a new, integrated strategy for using technology, social media, web applications, and emerging communications avenues to inform, orient and engage with visitors and the public. (p.32)

4.5 Recommendation: Wildlife refuges must participate in regional transportation planning. A priority should be linking people to wildlife refuges from more urban areas. (p.33)

4.6 Recommendation: Compile an up-to-date inventory of visitor facility enhancements that must be constructed, maintained and prioritized with an emphasis on improvements that increase the accessibility of Service facilities. (p.33)

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4.7 Recommendation: Every staffed wildlife refuge should have specialized equipment available to loan and enhance visitors' experiences. (p.33)

4.8 Recommendation: The Service should consider establishing national wildlife refuges in urban areas if the land is valuable for wildlife. (p.33)

4.9 Recommendation: Develop public land partnership "portals" or wild land recreation and environmental education partnerships with local parks and nature areas to help an increasingly urban population find ways to enjoy their local resources and raise the profile of the Refuge System. (p.33)

4.10 Recommendation: Conduct periodic, scientific surveys to monitor and evaluate visitor expectations and experiences with a special focus on children, families, and culturally diverse groups. Use data to assess the effectiveness of the Public Use Requirements Field Station Reviews, identify areas of growing public interest, and facilitate the development of new strategies to enhance national wildlife refuge visitor services and nature-based opportunities. (p.34)

4.11 Recommendation: The Service must invest in or recruit for language skills in its employees because languages other than English have become key to successful communications with the public. (p.34)

4.12 Recommendation: Review the Appropriate Use Policy to determine if policy barriers prevent appropriate nature-based experiences. Provide support and incentives for managers to be more expansive in their application of the Appropriate Refuge Use policy to welcome a wider variety of nature-based experiences. (p.35)

4.13 Recommendation: Update Service policies that address the administration of specialized uses such as commercial guiding, recreation fee programs, commercial photography and other audio/visual programs to maintain consistency, integrity, and excellence in the expansion of recreational opportunities for the public. (p.35)

4.14 Recommendation: Training on Compatibility and Appropriate Uses should be updated to provide managers with consistent guidance on considering a broader array of nature-based experiences on national wildlife refuges, monitoring use of wildlife refuges and reducing conflict between user groups. (p.35)

4.15 Recommendation: Wildlife refuges must participate in regional recreation planning in order to both protect wildlife resources and reach a new generation of wildlife enthusiasts. (p.35)

4.16 Recommendation: The Refuge System should continue studies and publish and share results on the economic benefits of wildlife refuges to communities, the economic benefits of ecosystem services from wildlife refuges, and the beneficial effect they have on property values. (p.36)

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4.17 Recommendation: Engage communities to identify what is important to them and articulate the ecosystem services that their wildlife refuge(s) provide(s). As a pilot effort to quantify these benefits, the Refuge System will prepare an ecosystem services benefit report for 10 wildlife refuges in every region within the next 10 years. If successful, these benefit reports will become a standard part of the Refuge System comprehensive conservation planning. (p.36)

4.18 Recommendation: Every staffed national wildlife refuge should have a Friends organization. (p.37)

4.19 Recommendation: The Service will support Friends organizations with education, training, and capacity building resources and provide incentives for Service staff to work closely with Friends and volunteers. (p.37)

4.20 Recommendation: The Service will provide assistance and networking opportunities to fledgling Friends groups in marketing and diversifying their membership and leadership. (p.37)

4.21 Recommendation: The Service will partner with the National Wildlife Refuge Association to create a campaign to grow the Refuge Friends membership to 100,000 people within a decade. (p.37)

4.22 Recommendation: To fulfill the National Wildlife Refuge System Volunteer Improvement Act, signed January 4, 2011, the Refuge System must develop a national strategy for the coordination and utilization of volunteers. (p.37)

4.23 Recommendation: The Refuge System will aggressively implement the plan to engage youth in a diverse array of work and volunteer programs. (p.38)

4.24 Recommendation: In locations where top quality environmental education programs are working, develop clear research-based documentation of the viability and effectiveness of using the outdoors as a classroom. (p.39)

4.25 Recommendation: Develop an Environmental Education Strategy that inventories existing efforts, identifies priorities for investment of staff and funds, and outlines basic standards for all national wildlife refuges. (p.39)

4.26 Recommendation: Support programs that offer opportunities for wildlife refuges and communities to engage in meaningful conversations about shared stewardship responsibilities (e.g., *Land Ethic Leaders* program of the Aldo Leopold Foundation). (p.39)

4.27 Recommendation: Develop an Interpretation Program Strategy to build meaningful interpretation opportunities at all wildlife refuges that support visitation. (p.40)

4.28 Recommendation: Train all front line staff in the basic concepts of interpretation. (p.40)

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4.29 Recommendation: The Refuge System needs an integrated strategy that assures a consistent and professional refuge brand is developed, including publications, websites, signs, facilities and uniforms. (p.41)

4.30 Recommendation: The Refuge System must create a multi-faceted, long-term communication strategy, identifying key, targeted audiences and incorporating the newest communication technologies. (p.41)

4.31 Recommendation: Join and leverage marketing opportunities with a broader array of groups, including private companies/organizations to promote the System conservation message as well as visits to national wildlife refuges. (p.41)

Chapter 5
Organizational Excellence

5.1 Recommendation: Review the Refuge System organizational structure and design a business model that more efficiently meets the needs of employees and accomplishes its wildlife conservation mission. (p.44)

5.2 Recommendation: Identify needed staffing levels for wildlife refuges and ensure that the appropriate range of skills and expertise are available on the ground, at the wildlife refuge level. (p.44)

5.3 Recommendation: The Refuge System will find innovative and efficient ways to work with other agencies to establish positive relationships and partnerships. (p.45)

5.4 Recommendation: Become more productive and efficient in internal and external communications and business processes, using new social media tools, web-based communications and online training. (p.46)

5.5 Recommendation: Antiquated data systems will be replaced with technology that shares and manages data effectively. (p.46)

5.6 Recommendation: Identify data management technologies that improve on-the-ground conservation delivery capabilities and empower managers to use them risk-free. (p.46)

5.7 Recommendation: Mandate an annual review of each Refuge unit's activities to ensure that operations are compliant and mission critical. (p.46)

5.8 Recommendation: Invest in providing executive management training to the Refuge System's workforce, especially to those in supervisory positions, and in developing systems to track effective supervisory performance. (p.46)

5.9 Recommendation: Evaluate the training opportunities at the National Conservation Training Center and other venues in order to ensure that adequate and appropriate training is available for the skills sets that will be needed in the future. (p.47)

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5.10 Recommendation: Work with colleges, universities and technical schools to build the knowledge base of future employees while developing programs that develop mission critical skills and abilities. (p.47)

5.11 Recommendation: The Service must ensure basic employee training explains the North American Model of Wildlife Conservation while also offering training courses on hunter safety and managing hunting programs on national wildlife refuges. (p.47)

5.12 Recommendation: Design a knowledge management strategy for the Refuge System that supports communities of practice open to all Service employees and other groups that are relevant and appropriate, including partners, other agencies, and interested citizens. (p.48)

5.13 Recommendation: Develop and mandate system-wide leadership and position succession processes to ensure learning and knowledge is passed from the departing employee to the successor. (p.48)

5.14 Recommendation: Support and implement the goals in the Service's 2010 *Strategic Plan for Responding to Accelerating Climate Change* as they apply to mitigation. Specifically, contribute to Goal 5 to achieve carbon neutrality by the year 2020. (p.48)

5.15 Recommendation: Develop a 5-year plan for greening the Refuge System. (p.49)

5.16 Recommendation: Establish, communicate and track the current baseline and future goals for employee recruitment and retention, especially within specific functions where recruitment has been problematic. (p.50)

5.17 Recommendation: The Refuge System must develop effective strategies for recruiting and deploying specialists as a fundamental part of its workforce planning efforts. (p.450

5.18 Recommendation: Place special emphasis on reaching youth at the high school and college levels in diverse communities to expose them to conservation careers and promote the Service as the conservation employer of choice. (p.50)

5.19 Recommendation: More than double the number of minorities and people with disabilities working for the Refuge System within the next 10 years, resulting in a workforce representation matching the civilian labor workforce in the System's main occupation series. (p.51)

5.20 Recommendation: Develop and implement a Service-wide strategy for targeting diverse groups of conservation professionals in government and beyond to assist in raising awareness about conservation careers with the Service and develop sustainable relationships with minority-focused conservation organizations. (p.51)

5.21 Recommendation: Implement a mentoring program that supplements the Department of the Interior mentoring program and other efforts underway in the Service. (p.51)

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<u>**Chapter 6**</u>
Leadership in a Landscape of Change

6.1 Recommendation: Encourage qualified employees to apply in greater numbers for leadership training and development programs. Also encourage employees to apply for the Department of the Interior's Senior Executive Service Candidate Development Program. (p.55)

6.2 Recommendation: Develop executive leaders who can guide the work of a variety of specialists toward broad, landscape-level conservation goals. (p.55)

6.3 Recommendation: Mandate the use of the Service's Leadership Competency Development Model and the Leadership Pathways reports as part of all employee development planning and implementation. (p.56)

6.4 Recommendation: Review the Service's Leadership Competency Development Model and, if needed, supplement it to reflect additional priority competencies identified for future leaders of the Refuge System. (p.56)

6.5 Recommendation: Mandate enrollment in the Project Leader Academy for all new national wildlife refuge or complex managers within their first 12 months. (p.56)

6.6 Recommendation: Invest in and mandate coaching and conflict management training for all supervisors. (p.56)