International Association of Fish and Wildlife Agencies (IAFWA)
Wildlife Diversity Committee

Functional Model for an Enhanced Wildlife
Conservation, Education, and Recreation Program

Version 10.1: Adopted September 1999

OVERVIEW

This model has been developed for IAFWA's Wildlife Diversity Committee, to provide state wildlife agencies with a suggested framework for enhancing existing wildlife programs to address the full range of conservation, education, and recreation opportunities. One possible option is to establish a Wildlife Diversity Program. In their fullest capacity, Wildlife Diversity Programs embrace nongame wildlife, urban wildlife, threatened and endangered wildlife, and wildlife viewing ("watchable wildlife") responsibilities in the broad areas of conservation, education, and recreation. They may also include the state's natural areas and/or natural heritage programs. They may be fully integrated structurally and functionally with game and/or sportfish programs, or they may be distinct from, but hopefully complementary to, such programs. However, regardless of an individual state's approach to program structure, the species and activities named above are all among the primary wildlife program components that could be addressed with funding from the *Teaming With Wildlife* (*Conservation and Reinvestment Act*) initiative, or other new revenue sources for state wildlife agencies.

Whether, or how, to embrace all or any part of this model is a choice each state agency must make. Each state's decision will be affected by its legal authorities, administrative structure, agency culture, customer needs and expectations, wildlife resource needs and capabilities, and funding or other constraints. This model is merely intended to identify the full spectrum of challenges, so each state has a recommended blueprint it can adapt to meet its specific needs.

This model has been developed through three meetings of Wildlife Diversity and Nongame program managers nationwide (Little Rock, February 1998; Denver, August 1998; and Phoenix, February 1999), two rounds of comment by state wildlife agencies (July 1998 and October-December 1998), open discussion in IAFWA's Wildlife Diversity Committee (September 1998 and March and September 1999), and additional comment from other interested individuals. The model could easily be more detailed and longer, or more general and briefer. Both preferences were expressed by reviewers. The model represents a balance of the two.

Although the Functional Model is little more than a year old, and is still evolving, it is already being put to good use. More than 20 states are using it to re-evaluate existing efforts, or to shape new ones. Oregon's new *Wildlife Diversity Plan* tiers directly off the model, and in Washington the model was used for a gap analysis of current program activities and future needs. Arizona and Missouri, two states with very comprehensive diversity, urban, and nongame wildlife programs, are using the model as a framework for planning activities to implement when the *Conservation and Reinvestment Act* becomes a reality.

This Functional Model is also being used to shape other models specific to Urban Wildlife and Watchable Wildlife programs. For further information about those models, which are still in the early stages of development, please contact:

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Please Note: IAFWA's Functional Model is a "living" document that will be revised as necessary to incorporate new ideas and to address challenges that arise as Wildlife Diversity Programs evolve. Please send suggestions for improvement to:

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Revisions of the model will be cleared through the appropriate IAFWA Committee.

International Association of Fish and Wildlife Agencies (IAFWA)
Wildlife Diversity Committee

A Functional Model for Enhancement of Wildlife Conservation, Education, and Recreation Program

Version 10.1: Adopted September 1999

INTRODUCTION

This document provides <u>recommendations</u> to state wildlife agencies for determining the basic functional components of a Wildlife Diversity Program within the context of an enhanced, comprehensive wildlife conservation, education, and recreation. We emphasize "recommendations" because this model is intended as a guideline -- not a directive -- for individual states to consider in creating or expanding a Wildlife Diversity Program. It is simply a model each state can adapt and develop as appropriate to its specific needs and capabilities.

Most state agencies do not have the resources to address the 1200+ species of nongame wildlife for which they are collectively responsible, not to mention the many plants and natural communities within the mandates of some agencies. Nevertheless, the management needs of these species and communities are real. So are the increasing customer demands for state-agency contributions to maintaining and enhancing conservation, education, and recreation opportunities beyond those provided for traditional constituencies (customers), such as hunters and anglers. As stewards of these public trust resources, we face the challenge of meeting these changing needs by expanding our products and services and embracing new customers, while maintaining and improving the high quality products and services that our traditional customers have come to expect. Our legacy to the future will be a measure of our success in doing so.

Clearly, states have differing authorities and agency structures regarding wildlife resource management. However, some of the common elements and procedures can be incorporated into each agency's Wildlife Diversity Program. Whether these common elements are addressed by nongame, endangered species, urban wildlife, "watchable wildlife," sportfish, or game management programs, or by a comprehensive Wildlife Diversity Program, is less important than the fact that they are addressed somewhere within the agency.

Creation or expansion of a state Wildlife Diversity Program can be facilitated by drawing upon the collective experiences and recommendations of each agency's personnel in all program areas. The intent is to use that expertise to design and place the Wildlife Diversity Program within the agency in such a way that it enhances the foundation built by game and sportfish programs over the past half-century or more.

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The two primary areas to address in developing a Wildlife Diversity Program are functional and organizational challenges. The former define recommendations about what the program could do, and the latter define what should be considered in structuring the program, from programmatic, work unit, and staffing perspectives. Both areas are addressed in the following pages.

PROGRAM FUNCTIONS

These functions include the primary challenges and activities[1] of a fully comprehensive Wildlife Diversity Program. Depending upon agency culture, existence of other programs, and funding, any one Wildlife Diversity Program (hereafter WDP) might not address all these areas. However, our intent is to make program gaps the result of conscious decisions, rather than oversight.

1. **Mission:** The WDP mission is to meet the conservation needs of public trust "nongame" resources, including plants, invertebrates, fishes, amphibians, reptiles, birds and mammals; and to provide for public use (including education and recreation), understanding, and enjoyment of these resources, while ensuring they remain a rich and diverse natural legacy for future generations.

2. **Authorities:** Establish or affirm the authorities appropriate and necessary to accomplish the WDP mission. Relevant authorities include state laws, rules, regulations, policies, Cooperative Agreements, and Memorandums of Understanding (MOUs), but federal and other authorities may also be applicable (e.g. Teaming With Wildlife; Pittman-Robertson; Dingell-Johnson; Endangered Species Act and Section 6 Agreement; Migratory Bird Act; Lacey Act; CITES).

    a. **Existing authorities:** Identify the existing, relevant federal laws and state laws, rules, regulations, policies, cooperative agreements, and MOUs.
    b. **Additional authorities:** Develop any additional authorities essential to program function, including state laws, rules, regulations, and policies.
    c. **Other management agencies:** Identify areas in which the WDP will function by developing cooperative agreements and MOUs with, and thus influencing, other entities with the appropriate legal authorities (e.g. Departments of Agriculture, Environmental Quality, State Parks, Water Resources).
    d. **Nongovernmental cooperators:** Identify areas in which the WDP will function by developing cooperative agreements and MOUs with non-agency partners (e.g. Water

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[1]   See pp. 8-15 for selected examples and concerns to consider regarding each functional issue. See Appendix 1 (p. 16) for suggested "top ten" conservation, education, and recreation-oriented activities.

Management Districts, conservation organizations, private nature preserves).

  e. **Informal influence:** Work to accomplish program objectives through influence and leadership in areas where there may be no clear written authorities.

3. **Planning:** Establish a strong commitment to, <u>and provide time and budget support for,</u> strategic and operational planning.

  a. **Customer assessment (human dimensions):** Public participation should be the backbone of WDP design and implementation. Mechanisms are needed for assessing customer values, needs, and expectations regarding current and future WDP goals, objectives, activities, and accomplishments.

  b. **Strategic and operational planning:** Early in WDP development, commit to a strategic plan that includes performance measures and customer-needs assessments, is linked to the budget process, and is fully reviewed by agency leadership, the commission, and the public. Strategic planning should drive operational planning, and budget development and allocation.

  c. **Elements of biological diversity:** Develop and maintain lists of elements of biological diversity (i.e. species, species groups, natural communities) to help guide and set priorities, and to establish a baseline of information about state wildlife diversity resources.

4. **Strategies for Collaboration:** Collaboration is the key to conservation success. Make a clear commitment to collaboration with internal and external customers, programs, other agencies and states, etc. on a statewide, regional, national, and international scale.

  a. **Networking:** Build strong relationships and program support, by assigning each WDP staff member as a liaison to a key customer or cooperator (e.g. Teaming With Wildlife coalition members, businesses, corporations, conservation organizations, garden clubs, academic institutions).

  b. **Partnerships:** Develop partnerships with internal and external cooperators, including: other internal programs; federal, state, and local governments; conservation organizations; and private landowners, to collaborate in accomplishing program goals and objectives. Be flexible in determining which partner, governmental or not, would be the best lead in achieving mutual objectives.

  c. **Grants and contracts:** Use grants and contracts judiciously to accomplish program objectives in all functional areas, by building on in-house expertise. Allocate dedicated funds for contracts and grants in specific program areas, but, wherever possible, do not

become dependent on contractors for technical support essential to base program functions.

d.   **Public involvement:** Continually seek public participation and input during all stages of WDP development and implementation.

5.   **Information (Data) Management:** Design and maintain computerized and manual storage, retrieval, and analysis systems and databases for resource information vital to conservation and management. Ensure appropriate compatibility and integration with existing systems within the agency and among external cooperators. Provide land management agencies and other cooperators with appropriate electronic or mechanical access to information.

6.   **Inventory and Monitoring:** Inventory and monitoring are long-term commitments essential to ensuring that accurate status information is readily available. A WDP should commit appropriate resources to gathering basic occurrence, distribution, and natural history information on species, habitats, natural communities, problem exotic species and other threats to wildlife diversity. Structure data gathering to close information gaps (state-owned or managed lands should be an early priority), clarify element status, establish a solid national baseline for trend analysis, monitor impacts of human use, and guard against (or reverse) population and status declines.

7.   **Research:** Commit resources to accomplishing WDP goals and objectives by gathering detailed information on wildlife diversity elements to clarify life history and management questions, formulate management guidelines, and assess public values, needs, and impacts on natural resources. Research should be driven by management challenges; recommended application methods and limitations should be included in all reports.

8.   **Natural Resource Management and Protection:** Maintain programs for habitat, species, and special features management on public and private lands, in both urban and rural settings, using ecosystem approaches where appropriate. Ensure consideration of WDP values in agency land-protection programs. Use the full spectrum of habitat protection tools, such as stewardship agreements, conservation easements, land acquisition, natural area and nature preserve programs, special use permits, landowner recognition and incentives, and voluntary participation agreements. Emphasize protection and management of wildlife diversity resources as components of natural communities. Integrate WDP efforts fully with existing programs for stewardship of private and public lands (e.g. Farm Bill). + I W J V

9.   **Recreation:** Establish the WDP's role as an advocate for responsible and ethical wildlife-oriented outdoor recreation. Help identify and meet public needs for facilities (e.g. trails, viewing blinds) and opportunities for enjoyment and learning (e.g. events, workshops). Direct such activities, and work with communities and nature-based tourism interests, to ensure

compatibility with biological program objectives. Use surveys and other appropriate means to assess program effectiveness.

10. **Public Outreach:** Establish a comprehensive public outreach program that continually informs internal and external customers about the WDP mission, goals, and functions. Promote active public involvement in the WDP. Report accomplishments in a timely manner. Focus outreach efforts on important challenges, and incorporate methods to evaluate effectiveness of outreach techniques.

11. **Education:** Establish objectives for, and enhance, environmental literacy among children and adults through education programs that include formal (curriculum-based) and informal (workshops and clinics) approaches. Formal educational assistance includes training linked to existing primary, secondary, or post-secondary education, and for adults. Informal assistance includes efforts outside the classroom or structured school environment. In both approaches, encourage use of nature centers, outdoor classrooms, learning centers, and other outdoor facilities. Ensure that all new activities are appropriately integrated with existing education and conservation programs.

12. **Law Enforcement:** Provide support for law enforcement actions that effectively address specific nongame wildlife, endangered species, and habitat challenges. Set priorities and evaluate actions as appropriate to ensure a reasonable return for the funds invested. Measure success, not just effort.

13. **Training and Human Resources:** Provide training to develop the skills that WDP staff and cooperators need to make the program effective and efficient. Hire employees who are technically competent, skilled at interpersonal relations and teamwork, and who will work well in an agency environment.

14. **Promotion, Marketing, and Public Relations:** Ensure agency-wide efforts to promote and market the WDP as a comprehensive conservation program, to maintain internal and external support for authorities, actions, and funding. Secure buy-in from employees at various levels to ensure success. Use professional marketing expertise and all available tools, including mass media, Internet resources, department magazines, news releases, public speaking, professional publications, technical reports, pamphlets, brochures, etc. Assess public interests, and develop programs and materials to meet customer demands.

PROGRAM ORGANIZATION

These challenges pertain to how the Wildlife Diversity Program (WDP) fits into the agency's structure. They must be addressed forthrightly, to ensure that the program is smoothly integrated into the agency in regard to structure, role, and function, so existing sportfish and game management programs are enhanced, rather than disrupted.

1. The agency must be fully committed to the WDP for it to succeed. Agency leaders must affirm to all employees and cooperators that the WDP is equal in stature (importance and value) to the agency's game and sportfish programs, and full collaboration among all three is essential to accomplishing the agency's mission. Ecosystem management cannot be attained without that collaboration.

2. The WDP should be established in a manner that ensures internal and external program advocacy, identity, and presence equal to game and sportfish programs.

3. Centralized and de-centralized staff should be established as appropriate to the scale and scope of the agency's WDP. Centralized staff can provide leadership in statewide program planning, oversight, support, and special technical expertise. De-centralized staff can provide generalist presence in regional/district program implementation.

4. Define clear programmatic and supervisory lines of authority, responsibility, accountability, and communication within and among the WDP, and the agency's other programs and work units. Lines of command among and within programs should be clear, and full collaboration in program planning, development, and implementation must be stressed.

5. Provide adequate work space, equipment, and supplies (including uniforms, as appropriate) for WDP staff. Space needs include: offices, laboratories, libraries, map rooms, meeting rooms, work rooms, storage space, etc. Equipment needs include: office equipment, computers and electronic data management support (e.g. PCs, LAN/WAN, GIS, hardware, software), vehicles, field equipment, communication equipment (e.g. phones, cellulars, portable radios, local and remote e-mail access). Ensure that the work space allocation places WDP staff with other agency staff (especially game and sportfish staff). Proximity leads to cultural and programmatic integration.

6. While the WDP is starting up, provide time and staff for long-term planning, but also ensure that the program quickly demonstrates its value to internal and external customers through short-term actions (e.g. protection of important habitats). The immediate need is for high-impact, high-profile actions (projects) that have lasting value, but which can be accomplished quickly to show the program is "up and running productively." Ensure that staffing occurs at a pace that allows for orderly program development and for the new employees to adjust to

the agency culture (and vice versa).

Examples and challenges to consider
a.   Assess agency values and organizational cultures. Much can be learned from existing programs within the agency and in other states.
b.   Survey internal work units and employees to identify their personal expectations of WDP with regard to role, function, and placement within the agency.
c.   Assess external customer needs and expectations.

7.   The following staff functions or capabilities should be considered while developing the WDP. They may be addressed through personnel assigned to a WDP work unit, in de-centralized WDP offices, in other work units within the agency, or even by personnel employed by collaborating agencies, organizations, or contractors. Staffing functions can be addressed by an appropriate blend of permanent, limited appointment, temporary, seasonal, contract, and student intern employees.

Centralized functions or capabilities to consider
a.   Program leader.
b.   Administrative support: clerical, budget oversight, procurement, grants and contract management, planning, program promotion and marketing, information and education, publications, legislative and regulatory process, live wildlife permits administration, customer assessment (human dimensions).
c.   Statewide program specialties: aquatics, invertebrates, fishes, amphibians, reptiles, birds, mammals, plants, natural communities and ecology, hydrology, wildlife viewing ("watchable wildlife"), urban wildlife.
d.   Technical support: statistics, GIS technology, information (data) management.
e.   Environmental review.
f.   Natural areas and land protection-planning (Land trusts)

De-centralized functions or capabilities to consider
a.   Regions/districts: generalists and specialists may be needed, as appropriate to the individual state's needs and capabilities.
b.   Clerical support: addition of WDP staff in decentralized offices will cause local budget, clerical support, and work-space concerns. These must be addressed by budget allocations; do not leave those work units to absorb these costs within their existing budgets.
c.   Other: the WDP must be able to secure time from employees agency-wide to support its activities, within the context of their individual duties and work plans. For example: allocate "pick-off" funds for planned participation, such as by a district wildlife manager in a Breeding Bird Atlas project. The same opportunities also should exist for WDP staff to participate in other programs agency-wide. Operational collaboration is

essential to program integration.

SPECIFIC ACTIVITIES AND CHALLENGES TO CONSIDER

1. **Mission:** None.

2. **Authorities:**
   a. Establish statutory definition for Wildlife Diversity Program, biodiversity, and nongame wildlife.
   b. Establish desired authority over invertebrates, plants, and all vertebrates.
   c. Establish desired authority and goal/policy statement for preserving biodiversity, including functioning natural communities or ecosystems.
   d. Establish desired authority to maintain state lists of special concern, rare, sensitive, and endangered species and ecological classification systems, and to use such lists as a framework for conservation planning (with region-specific goals and objectives).
   e. Establish desired authority to respond to petitioned listing/delisting actions.
   f. Establish adequate civil and criminal penalties for all nongame species.
   g. Establish appropriate restrictions for "take" (e.g. collecting), possession, importation, exportation, commercialization, captive breeding, pet trade, and/or live release of native and non-native species.
   h. Ensure that "take" of wildlife is statutorily defined to include habitat destruction and scientific or educational salvage of dead wildlife.
   i. Establish authority to appropriately restrict public access to sensitive species information, and to recoup costs of providing information to the public.
   j. Establish desired authority to provide incentives (e.g. payments or habitat enhancements) on private lands or technical assistance to private property owners to benefit wildlife resources.
   k. Establish in-lieu tax payment authority for use in acquiring lands.

3. **Planning:**
   a. **Customer assessment (human dimensions):**
      (1) Customer assessment is a core process in all program areas, and all outcomes should be data driven.
      (2) Public comment is not synonymous with public participation (= involvement). Solicit comment, but get people involved.
      (3) Use standardized responsive management approaches, such as surveys, focus groups, etc., to develop information for use in program planning and evaluation.
      (4) Ensure that customer assessment activities address the full spectrum of customers, including the general public, conservationists, academics, researchers, governmental and nongovernmental cooperators, non-traditional customers (e.g. garden clubs), etc.
      (5) Close collaboration with regional and national partners will enhance perspectives, efficiency, and effectiveness (e.g. regional wildlife agency

associations, IAFWA, Management Assistance Team).

b. **Strategic and operational planning:**
   (1) Secure agency leadership buy-in for WDP plans before completing them.
   (2) Use planning to increase cooperation with other programs and agencies.
   (3) Set clearly stated, sound, realistic goals and objectives for which progress and accomplishments can be objectively measured.
   (4) Establish an evaluation process for measuring program success in meeting performance measures.
   (5) Develop state and regional biodiversity plans.
   (6) Develop recovery plans, recovery guidelines, and conservation agreements for species, habitats, and biotic communities.
   (7) Develop state conservation plans for Partners in Flight, shorebirds, and colonial nesting waterbirds, and for other species groups as appropriate.
   (8) Develop statewide aquatic resource management plans.
   (9) Develop plans to manage undesirable nonnative and irruptive species to minimize their impacts on native biota.

c. **Elements of biological diversity:**
   (1) Focus on habitat in addressing species conservation needs.
   (2) Tie lists of species and species assemblages to habitats, natural communities, ecological classification systems, and/or state natural regions or divisions.
   (3) Develop state and regional lists of species, by taxonomic group, with multiple status categories (e.g. rare, game, keystone).
   (4) Develop a status list for all species by state - using an objective process – cross referenced to global ranking and other listing systems.
   (5) Develop objective criteria and procedures for responding to listing petitions.
   (6) Consider the needs of common species during planning for rare species, to ensure that they are not overlooked.
   (7) Develop or adopt an ecological classification system and a system for dividing the state into natural resource regions as a framework for conservation planning (perhaps with region-specific goals and objectives). Examples of such lists include: state and regional lists of aquatic and terrestrial species, marine resources, natural communities, exotic/invasive species, and special features such as colonial nesting/roosting sites and bat hibernacula; lists of elements with special legal status and priority lists for conservation action; endangered and threatened species; species of special concern; candidate species; Natural Heritage Program special element lists and rankings; biotic communities of special concern; and protected species (those not open to take under hunting, fishing, or trapping licenses).

[handwritten margin note:]
* Better integration w/ Habitat Program and Private Lands.

[handwritten margin note: CWCS]

4. **Strategies for Collaboration:**
    a. **Networking:**
        (1) Reimburse WDP liaisons for organizational dues and allow them to claim hours for planned participation.
        (2) Use regional citizen committees with agency staff to promote and coordinate project involvement.
    b. **Partnerships:**
        (1) Establish partnerships with conservation organizations, industry, the business community, and state, federal, and local governments.
        (2) Develop partnerships within the agency for rare species conservation projects on lands managed for traditional game or sportfish values.
        (3) Secure corporate sponsorship for high-dollar projects, such as educational and interpretive nature centers, and inventory, monitoring, and research projects.
        (4) Develop stewardship partnerships with private landowners.
        (5) Give landowners recognition for voluntary habitat protection.
    c. **Grants and contracts:**
        (1) Establish procedures for soliciting and reviewing proposals, contract/grant development and administration, and ensuring contractor/grantee compliance in meeting their obligations.
        (2) Provide grants and contracts for species inventories, natural history studies, management studies, research, public attitudes surveys, development of education products (e.g. curriculum components), etc.
        (3) Provide grants to local communities or businesses for wildlife festivals or to develop nature-based tourism materials.
        (4) Support focused research projects to address important management challenges.
    d. **Public involvement:**
        (1) Involve customers and get feedback from them through workshops, public meetings, surveys, questionnaires, focus groups, and newsletters.
        (2) Use surveys of customer expectations and preferences to help develop program goals, objectives, strategies, and approaches.
        (3) Build advisory committees around specific challenges or projects.
        (4) Conduct workshops and focus groups on specific management challenges to identify solution strategies, or ways to develop information for designing programs, projects, etc.

5. **Information (data) management:**
    a. Provide centralized and dispersed staff with adequate wide-area and local-area network, and local and remote e-mail support.
    b. Ensure that data entry and updating keep pace with data gathering; data must be current to be valuable.

    c.   Maximize information system compatibility, to facilitate environmental review, and to develop state, regional, and national element status perspectives.

    d.   Address locational and GIS issues, and compatibility with cooperator systems.

    e.   Provide "read-only," user-friendly electronic access to information (e.g. wildlife-watching data layer in GIS system; element distribution and natural history information), with appropriate security protocols and guidelines for interpretation.

    f.   Produce GIS covers for wetlands, riparian areas, managed areas, and other important or sensitive areas.

    g.   Help local organizations and governments with planning, and with using WDP databases and GIS.

6.   Inventory and Monitoring:

    a.   Develop effective, efficient inventory and monitoring techniques, and set statistically sound standards and guidelines.

    b.   Consider scale and scope in inventory and monitoring. Not everything should be measured in the same detail, or at the same frequency.

    c.   Explore new technologies for more efficient ways to survey and monitor (e.g. remote sensing, with ground-truthing, to survey and monitor habitat types).

    d.   Inventory and develop monitoring programs for state-owned lands. WMAs (birds done)

    e.   Develop and implement standard protocols for nationwide atlas and monitoring programs for native aquatic species (including fish and invertebrates), amphibians and reptiles (Partners in Amphibian and Reptile Conservation), breeding birds, bats (North American Bat Conservation Partnership [Masters of the Night Sky]), butterflies, shorebirds, colonial nesting waterbirds, etc.

    f.   Inventory species groups, such as butterflies, terrestrial mollusks, colonial waterbirds, shorebirds, neotropical migratory birds, forest carnivores, bats, natural communities, etc. through county biological surveys, and other coordinated, broad-scale efforts.

    g.   Emphasize volunteer participation and collaborative efforts, including wildlife atlases, Breeding Bird Surveys, Christmas Bird Counts, North American Butterfly Association 4th of July Count, International Migratory Bird Day Count, bird feeder counts, "citizen-science" wildlife monitoring programs, etc.

    h.   Gather information on key lands, species groups, or other features, such as wetlands, state lands, species of special concern, species-rich areas, natural communities, invasive exotic species, cyclically-irruptive species, water quality, groundwater recharge areas, and caves.

    i.   Monitor success of community restoration, and species/habitat responses to management practices.

7. **Research:**
    a. Evaluate the impact of existing management practices on wildlife (e.g. wildlife management, silviculture, agriculture, grazing, mining, urban growth).
    b. Evaluate the impacts of outdoor recreation activities on wildlife (e.g. camping, canoeing, horse riding, mountain bikes).
    c. Determine the causes and effects of habitat fragmentation.
    d. Evaluate the impacts of exotics or irruptive native species.
    e. Study the basic life histories of various species (e.g. species of special concern).
    f. Develop restoration techniques for species and communities.
    g. Identify the best management practices to resolve species conflicts.
    h. Evaluate how to modify flow regimes in rivers to benefit native fish.
    i. Determine the effects of environmental contaminants on aquatic species.
    j. Identify customer demographics, preferences, expectations, and communication or learning methods.
    k. Study the genetics of plants and animals, to clarify demographic and population viability issues, and resolve important taxonomic questions.
    l. Study disease and parasite occurrence and transmittal mechanisms, and develop prevention and treatment methods.
    m. Evaluate the effectiveness and efficiency of current management programs and planning approaches (e.g. species management guidelines, wilderness as a wildlife refuge, urban buffer zones, Farm Bill program, recovery planning, conservation agreements, law enforcement).

8. **Natural Resource Management and Protection:**
    a. Recover species of wildlife and restore natural landscapes.
    b. Secure habitat for wildlife in collaboration with federal, state, and private partners (e.g. through the Wetlands Reserve and Farm Bill programs, and by other means).
    c. Provide incentives for wildlife stewardship on private lands.
    d. Implement the national Partners in Flight, shorebirds, and colonial nesting waterbirds conservation plans, and other similar broad-scale efforts.
    e. Decrease fragmentation of urban landscapes through backyard habitat programs, and by helping towns and land trusts develop wildlife-friendly "green" space.
    f. Improve and expand state natural areas programs.
    g. Develop conservation agreements and plans for keystone species, riparian and wetland habitats, and species of special concern.
    h. Develop habitat prescriptions, and enhance, restore, and protect habitats.
    i. Purchase conservation easements for priority species and habitats.
    j. Diversify state forestry/land department plant nursery products to promote use of native grasses, wildflowers, shrubs, trees.
    k. Integrate species-oriented management (e.g. neotropical migrants, goshawks, elk, and

turkey) into an ecological community-based approach to land management.

l. Address human-wildlife conflicts, and conflicts among management programs for different species of wildlife, different land uses, and recreational activities.

m. Establish partnerships with County Extension Service programs, and provide necessary technical assistance, cost-share opportunities, and access easements.

n. Evaluate the effectiveness of environmental review and mitigation compliance in achieving program objectives.

o. Allocate funds for operation and maintenance costs on protected lands.

9. **Recreation:**

a. Develop or enhance facilities at wildlife viewing sites, and provide viewing blinds, field guides, self-guided tours, and on-site guides.

b. Update state viewing guides for wildlife, wildflowers, etc.

c. Provide special events, such as outdoor skills workshops ("how to" and "where to" clinics) for birdwatching, nature photography, hiking, camping, canoeing, birdfeeding, backpacking, "Becoming an Outdoors Woman," building bird and bat houses, landscaping and gardening for wildlife, etc.

d. Increase public access for wildlife viewing and other outdoor recreation through easements, facilities development, and land protection.

e. Cooperate in development and maintenance of national wildlife viewing trails (e.g. Appalachian, Ozark, Rocky Mountain, Lewis and Clark, Pacific Crest).

f. Develop local trails for outdoor recreationists, including traditional hiking trails, but also new kinds, like the Great Texas Birding Trail and Tennessee's Mississippi River Wildlife Viewing Trail.

g. Promote economic development through nature-based tourism consistent with conservation objectives.

h. Support wildlife festivals, special wildlife viewing events, and nature-oriented photography contests.

i. Promote volunteer stewardship of recreation sites.

j. Acquire lands for different recreational uses to avoid conflicts (consider "sacrifice" areas for habitat-destructive activities).

k. Inform outfitters on the value of wildlife-viewing trips.

l. Inform outdoor retailers on outdoor recreation techniques and opportunities as they relate to wildlife.

10. **Public Outreach:**

a. Publish comprehensive state Wildlife Diversity Program performance reports every five years.

b. Publish state field guides for species groups.

c. Establish linked state-websites for information on wildlife diversity, including natural history and status of endangered species, species of special concern, and common or

popular species.

d. Provide a full range of popular and technical publications, including books, reports, pamphlets, posters, brochures, and newsletters.

e. Develop brochures on wildlife identification, conflict avoidance, feeding, and other popular wildlife topics.

f. Provide information on how the public can get wildlife information (e.g. reference catalogues, brochures about wildlife websites and how to use reference librarians).

g. Disseminate information, using websites, newspaper and magazine articles, radio and television, videos and compact disks, "canned" slide shows, and news releases.

h. Work with Chambers of Commerce, Welcome Wagons, and Offices of Tourism to develop an outreach program for new residents and tourists.

i. Use workshops and special events so the public can increase their knowledge of WDP activities and interact with program staff.

j. Encourage WDP staff to publish in professional journals, and establish an internal series of technical reports.

k. Partner with state parks, schools, and local communities to help them build, maintain, and operate nature centers, dioramas, amphitheaters, shelters, and trails. The WDP should focus on providing wildlife information, interpretive signs, kiosks, blinds, observation towers, interpretive programs, and staff training opportunities.

l. Update state wildlife viewing guides and develop or enhance recreation facilities and interpretive signs at each site.

11. **Education:**

a. **Formal education**

Collaboration w/ Communication Bureau

(1) Enhance Project WILD, Project Wet, Project Learning Tree, and other education programs.

(2) Develop planning materials and training programs for program administrators, teacher trainers, and teachers that help link environmental literacy components to existing curriculum standards.

(3) Provide wildlife teaching packets and other materials (e.g. trunks).

(4) Provide outdoor classrooms and other (_)outdoor education opportunities for urban and rural schools (e.g. develop programs targeting urban, rural, and minority youths, who are future land/wildlife stewards).

(5) Link outdoor activities to curriculum standards (e.g. nature mapping – train teachers who train students who learn how to gather and analyze data).

(6) Use "watchable wildlife" viewing sites to develop a basis for curricula focused on ecosystem management.

(7) Fund a scholarship for 4th year university journalism students through a contest for analysis of a specific policy issue or wildlife management conflict.

(8) Create information for university classes that teach teachers, and recommend curriculum improvements for natural resource professionals.

b. **Informal education**
  (1) Inventory and assess effectiveness of existing nature centers, environmental learning centers, public zoos, aquariums, museums, and state parks.
  (2) Develop and implement strategies for partnering with learning centers for adults and children (including providing financial or other support).
  (3) Find ways to reach the uninvolved adult population, and non-traditional outdoor recreationists.
  (4) Provide teacher workshops on wildlife diversity, with credit for re-certification.
  (5) Develop citizen-scientist programs to monitor wildlife diversity.
  (6) Develop Master Naturalist volunteer programs.
  (7) Conduct workshops for staff, agency leaders, volunteers, and the public.
  (8) Fund student intern and residency programs.
  (9) Provide summer and weekend nature and science camps.
  (10) Develop slide programs/lesson plans, and make them available through loaning programs for anyone to use.
  (11) Encourage wildlife friendly architecture, buildings, and landscaping.

12. **Law Enforcement:**
  a. Evaluate current law enforcement techniques for efficacy in addressing wildlife diversity and environmental challenges.
  b. Train officers on nongame wildlife identification and management.
  c. Integrate enforcement personnel into nongame wildlife management activities, and education programs.
  d. Investigate illegal commercial trade, such as in amphibians and reptiles.
  e. Increase environmental enforcement efforts.

13. **Training and Human Resources:**
  a. Provide training for program staff in: program administration and management; personnel management and supervision; technical and popular writing; verbal communication and public speaking; planning; meeting facilitation and management; conflict resolution; time management; budgeting and project management; problem solving; institutional and cultural awareness; customer assessment; technical skills (e.g. fieldwork, resource management, computers, GIS); outdoors skills; and "working with the media."
  b. Provide training for internal and external collaborators in inventory, monitoring, and management techniques, and species identification.
  c. Use contract, continuing education, and out-of-state training to enhance professional advancement opportunities.
  d. Train volunteers to give "how to" and "where to" workshops to the public.

14. **Promotion, Marketing, and Public Relations:**
   a. Program marketing is essential to securing program support from the public and agency employees.
   b. Every WDP employee must market the program daily, to make marketing productive.
   c. Tie the strategic plan to a promotional plan with specific message points.
   d. Market the agency as a full-service conservation organization, with well integrated programs (including the WDP).
   e. Build job descriptions and budgets so all employees can work on WDP activities, and so all WDP employees can work on activities in all other programs.

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Work w/ Communication to accomplish this.

Appendix 1: Suggested "Top Ten" Activity Lists for *Teaming With Wildlife*
(these are not priority ranked)

Conservation

Jeff & Don

Colleen

1. Recover species and restore natural landscapes.
2. Secure habitat for wildlife in cooperation with federal, state, and private partners (e.g. through the Wetlands Reserve and Farm Bill programs, and by other means).
3. Implement national conservation programs such as Partners in Amphibian and Reptile Conservation, the North American Bat Conservation Partnership, Partners in Flight, and comparable efforts for shorebirds and colonial nesting waterbirds.
4. Initiate a coordinated second nationwide breeding bird atlas program, and support the annual national Breeding Bird Survey.
5. Develop and implement nationwide atlas programs for amphibians and reptiles, small mammals, and native aquatic species (including fish and invertebrates).
6. Investigate illegal trade in nongame wildlife, and enforce existing laws and regulations.
7. Provide incentives for stewardship of private lands.
8. Support a nationwide butterfly count.
9. Develop statewide aquatic resource management plans.
10. Decrease fragmentation of urban landscapes through backyard habitat programs.

Education

Commun- unications

Commuelce

Deniz Sara

1. Enhance Project WILD, Project Wet, Project Learning Tree.
2. Provide outdoor classrooms for public schools.
3. Provide outdoor education opportunities for urban youths.
4. Support nature centers and environmental learning centers.
5. Provide teacher workshops on wildlife diversity.
6. Develop citizen-scientist programs to monitor wildlife diversity.
7. Develop Master Naturalist volunteer programs.
8. Publish comprehensive state Wildlife Program performance reports every five years.
9. Enhance educational programs at public zoos, aquariums, museums, and state parks.
10. Establish linked state-websites for information on wildlife diversity, including natural history and status of endangered species, species of special concern, and common or popular species.

Recreation

Sara

1. Develop or enhance facilities at wildlife viewing sites and update state viewing guides.
2. Develop trails for outdoor recreationists.
3. Provide skills workshops for birdwatching, photography, hiking, camping, canoeing, etc.
4. Increase public access for wildlife viewing and other outdoor recreation through easements, facilities development, and land protection.
5. Promote economic development through nature-based tourism consistent with conservation objectives.
6. Collaborate on community-based local and regional public recreation opportunities such as the Great Texas Birding Trail and Tennessee's Mississippi River Wildlife Viewing Trail.
7. Develop and maintain national wildlife viewing trails (e.g. Appalachian, Ozark, Rocky Mountain, Lewis and Clark, Pacific Crest).
8. Support wildlife festivals and wildlife viewing special events.
9. Support nature-oriented photography contests.
10. Promote volunteer stewardship of recreation sites.