25-Year Recreational Angling Enhancement Plan
Oregon Department of Fish and Wildlife

I. INTRODUCTION

Oregon and the Pacific Northwest are well known for their vast outdoor recreation opportunities and fishing is an important part of outdoor recreation. Oregon has a wide array of freshwater and marine fishery resources that include salmon, steelhead, shellfish, numerous trout species, sturgeon, warmwater and marine fish. Participation in fishing and related activities by Oregonians and out-of-state visitors fosters a better understanding and respect for the outdoors and support for conserving our fishery resources and their habitats.

The Oregon Department of Fish and Wildlife (Department) is responsible for managing Oregon's fish and fisheries for the use and enjoyment of present and future Oregonians. For inland and estuarine species such as trout and warmwater fish and many shellfish, management authority rests primarily with the Department. For other fish species, such as salmon, steelhead, sturgeon and Pacific halibut, the Department works closely with other states and federal agencies to set regulations that protect native species and allow for equitable harvest opportunities.

Angling participation in the United States for those aged 16 and older declined 15% from 1996 to 2006 (USFWS 2006). In Oregon, license sales are variable and have dropped as a percentage of the population age 14 and older (Figures 1, 2). Many factors, such as fish abundance and the economy, may influence fishing license sales. Carter and Upton (2004) did an extensive review of trends in license sales in Oregon.

Additionally, it is likely that continued population growth will increase demand and reduce angling opportunities throughout Oregon, particularly in urban centers. Oregon's population is estimated to grow by nearly 50% by the year 2040 (Office of Economic Analysis 2004). Growth is a result of both births and immigration. Recent economic downturns may slow the population growth rate. Much of Oregon's growth is expected to in urban counties.

Reduced angling activity impacts Oregon's economy. An estimated 576,000 anglers fished for 8.4 million days and spent over $623 million in Oregon (USFWS 2006). Fisheries near rural communities provide important revenue sources for many small businesses as anglers from urban areas travel across Oregon's landscape to enjoy its freshwater and marine fisheries.

Less obvious, but perhaps more profound, is the number of Oregon residents who have lost their connection with the outdoors and the natural world. For many, fishing and hunting were their first connection to fish, wildlife, and the environments they inhabit. Concerns about fish and wildlife populations often lead to an increased interest in and sense of stewardship for the natural world. Social problems such as littering, poaching, and vandalism may be reduced. This disconnect from the natural environment is

particularly acute among young people.

Oregon's fishery managers must meet the emerging demands and expectations of anglers and continue to manage for the use, conservation, and recovery of our native fish species. The fish need healthy watersheds with adequate water quality and quantity and productive aquatic and terrestrial habitats. Hatcheries also play a key role in providing additional fish for harvest. Oregon's expanding population impacts angling opportunities and the riparian habitats and water that support the fish. Sound management of fish hatcheries, water quality and quantity, habitat, and fishing activity is needed to ensure and balance conservation and angling opportunities. Fisheries management is successful when we protect the biological and physical resources while making sustainable harvest possible.

The 25-Year Recreational Angling Enhancement Plan (Plan) outlines goals for recreational fisheries management, identifies angling enhancement strategies, and describes actions and pilot programs to accomplish the goals. It will be implemented in cooperation with citizens of Oregon and public and private partners.

The Plan covers a 25-year time period. This time frame provides the opportunity to lay the groundwork and develop funding for large projects, but we are reaching into an uncertain future. We need to initiate actions within our capacity in the predictable short-term, plan for the future, and use the long timeline to initiate projects that require major funding and planning commitments. We will build in feedback loops and regular evaluations to ensure actions are meeting plan goals and are modified where needed.

II. GOALS

Recreational Fisheries Enhancement Directive

To enhance, develop, and promote diverse and productive recreational fishing opportunities that are consistent with the conservation needs of native species; provide balanced economic and social benefits; and connect Oregonians with fish, water and the outdoors.

The Department's planning and management of recreational fishing is guided by this directive and the implementation of strategies and actions described in this plan. The policy will be used in conjunction with direction provided by the Native Fish Conservation Policy (NFCP, OAR 635-007-0502 to -0509), the Hatchery Management Policy (HMP, OAR 635-007-0542 to -0548), and fish management plans (OAR 635-500-0002 to -6500) to guide recreational fisheries management in Oregon.

Many factors influence a person's choice about fishing and spending time outdoors. We want to encourage Oregonians and others to fish by reducing barriers to participation and providing the maximum sustainable opportunities for responsible use of the state's fishery resources. In addition to responding to the Department's mission to protect and enhance fish and wildlife and their habitats for the use and enjoyment by present and future Oregonians, fishing participation is important in a society that values the outdoors

and conservation.

Goal 1: Provide diverse, stable, and productive angling opportunities

The Department seeks to maintain and restore naturally-produced fish to provide opportunities for consumptive and non-consumptive recreational fisheries and to manage non-native fish and hatchery-based fisheries to optimize user benefits. The Native Fish Conservation Policy (NFCP) obligates the Department to manage for the conservation of naturally-produced native fish species in the watersheds in which they are indigenous. Consistent with this policy, hatchery-produced fish are used to foster and sustain opportunities for sport, commercial, and tribal fisheries.

The Department must increase opportunities for fishing by increasing the quality and quantity of fisheries in Oregon and access to those fisheries. Oregon has lost angling opportunities because of reduced fish numbers, changes in use of the hatchery product, restricted seasons, lack of access, diminished quality of the fishing experience, and lack of information about harvest potential. The performance of a fishery is influenced by the ecology and natural productivity of the freshwater, marine, and riparian environment and co-existing predatory and competitive species. The Department influences fisheries in many ways including by using the hatchery system to provide fish for catch and harvest; regulating catch and harvest to spread out opportunity and allow for optimal catch; providing land access and infrastructure, and disseminating information about fishing opportunities. As angling opportunities increase, we also attempt to reduce concentrations of anglers in heavily used fisheries and maintain the quality on the angling experience.

The Department's primary conservation goal in harvest management is to ensure adequate spawning escapement of native fish species. Natural variation in survival causes harvestable surpluses of fish to fluctuate. Within this natural variation, the Department seeks to provide consistent and stable recreational angling opportunities.

Goal 2: Increase angling participation

Diverse, stable, and productive angling opportunities form the basis for increased angling participation. The Department must work to increase the number of Oregonians and others participating in these fisheries now and in the future. We need to retain our current angler base; recruit new anglers, especially young people; and anticipate future demands for angling opportunities from a growing population. Programs should foster life-long participation in fishing and the outdoors based on simple, easily available opportunities and skills that can be learned at any age. The Department must be positioned to provide an ample supply of fish available to catch. New anglers should be provided the opportunity to build skill levels that enable participation in a greater variety of fisheries.

Increased angling participation provides benefit to the individual and to society. Studies have shown that people fish for many reasons (Felder 2000). For some, it is the

challenge of the catch while others enjoy putting a meal of fresh fish on the table. Fishing is time with family and friends, a time to be outdoors, and a healthy activity. Young people surveyed thought fishing helped build confidence and problem-solving skills (Responsive Management 2003). Angling fosters understanding, respect, and stewardship of the natural environment. Angling also contributes to the economy through equipment and travel purchases by Oregonians and visitors. The Department benefits directly from the revenue brought in by license purchases.

We have identified five target areas for participation: (1) recruit young people to angling, (2) recruit anglers from non-traditional groups, (3) introduce new Oregon residents to angling, (4) encourage visitors to fish, and (5) retain our existing angler base. The tactics to reach each group will vary.

III. CHALLENGES TO THE ENHANCEMENT OF ANGLING OPPORTUNITIES

To be successful, we need to understand the challenges to and constraints on our ability to develop or enhance angling opportunities. Some circumstances are national or global in nature and not easily influenced by actions within the State of Oregon or the Department. Some limitations are dictated by Department staffing, budgets and statutory authority. We must anticipate obstacles, take best advantage of opportunities that develop, and initiate actions to be prepared for and to react to future circumstances.

Some challenges to the future of recreational angling in Oregon include:

- Many fish populations regularly pursued for recreational harvest are severely depressed for a number of reasons not fully understood including over-harvest, habitat loss or degradation, climate change, and invasive species.
- Water availability is reduced due to competing needs for energy, irrigation, and municipal water supplies.
- Climate change influences water supply and quality (such as temperature). Evidence suggests that changes in fish populations will be manifested as either a reduction in numbers or changes in distribution due to altered habitat suitability.
- Environmental toxins can accumulate in fish and result in reduced reproductive capacity, greater susceptibility to disease, and higher mortality. The toxins may also make fish unfit for human consumptions.
- Invasive and non-native aquatic species have been shown to reduce food availability; impair habitat quality; compete for feeding, rearing, and spawning habitat; and prey on juvenile and adult native fish.
- Threatened and endangered fish species are present in many areas where recreational fisheries occur. The presence of listed fish often limits the timing, location, number, and size of fish that can be harvested.
- Riparian habitat is being lost due to development in both urban and rural landscapes across Oregon. Conversion of riparian corridors from natural to developed or agricultural uses can reduce habitat quality through loss of shading, reduced in-stream habitat productivity due to loss of large woody debris, increased run-off, greater siltation, and other factors.

- Development and changes in ownership of private lands across Oregon can reduce the amount of land accessible to anglers. Access to public lands and waters may be reduced if financial concerns limit an owners' ability to maintain the property. There are also increased liability concerns.
- Opportunities to use hatchery fish are becoming more restrictive in order to reduce potential interactions between hatchery and wild fish. Concerns over disease and predation also limit opportunities to successfully use hatchery fish.
- Salmon, many marine fish, and some shellfish have high value for tribal and commercial use and these limited resources must be shared with recreational anglers.
- Social and economic factors may limit fishing participation. Fluctuating fuel and food prices and economic uncertainty have reduced the amount of money people are willing and able to spend on all types of leisure activities. Competing demands on free time are keeping people from going fishing. Changes in family structure may limit opportunities to learn to fish from a parent, grandparent, or other relative.
- Concern for personal safety may also be a limiting factor. Some aspects of angling are inherently dangerous. Illegal activities in some areas make chance encounters with criminals more likely. This can be especially discouraging for children who want to ride their bikes or walk to a favorite pond or stream.
- Limited and uncertain funding reduce the opportunities for the Department to pursue new technologies; acquire, develop and maintain fishery access; provide educational opportunities where needed; conduct needed assessment to manage fisheries; and provide staff support to develop or manage recreational fishery programs.

Most of these factors are national or global in nature but must be considered and addressed to make the plan a success. By carefully considering these issues, we can develop strategies and implement actions to minimize the severity of their impact and increase angling opportunities for Oregonians.

IV. STRATEGIES TO ENHANCE RECREATIONAL ANGLING

This section describes strategies the Department will use to accomplish the Plan's goals and to address the challenges to angling enhancement. These strategies underlie recreational fisheries management and will be used to implement actions and pilot programs described in Section V.

a) **Enhance natural production of fish stocks to levels that allow for recreational fishing opportunities.**

Protecting and enhancing naturally-produced fish in their native ranges is the foundation for long-term recreational fishery management in Oregon. Many native stocks of salmon, steelhead and trout are not meeting conservation goals. The Department seeks to recover threatened stocks of native fish to levels that will allow for consideration of catch and harvest. We must enhance natural

production through habitat protection and restoration, water management, and harvest regulation. Healthy populations of wild fish may allow for more alternatives for the use of hatchery fish to supplement fisheries. Recovery and conservation planning is the vehicle described in the NFCP to identify specific problems and solutions for recovery of native fish stocks.

The Department also manages for natural production of introduced game fish to provide angling opportunities in locations where they do not significantly impact native fish species. Non-native game fish, primarily in lakes and reservoirs, can provide highly successful fisheries for beginning and experienced anglers.

b) **Use hatchery fish, where appropriate, enhance recreational fisheries.**

Many of Oregon's successful recreational fishing opportunities rely on our state fish hatcheries. Hatchery-reared, catchable-sized trout provide valuable recreational fishing for Oregon anglers and fingerling trout programs provide a diversity of angling opportunities in areas capable of growing trout such as Oregon's high lakes and many of our larger reservoirs in the state. Salmon and steelhead hatcheries provide adult fish for harvest. Increasing population, new fisheries, and greater diversity of angling opportunities will place greater pressure the hatchery system to produce more fish of different sizes and species. The Department must maintain and upgrade our hatchery infrastructure, use the best available science, and adopt emerging technologies to ensure hatchery production can meet future demands.

c) **Involve the public in planning and implementation.**

The Department seeks to understand the interests and preferences of the public and incorporate that information in decisions. We will work with the public to identify, develop, enhance, and promote recreational angling opportunities to best serve Oregonians. Examples include formation of advisory boards to address issues and surveys to understand the preferences and use patterns of the public. In addition, elected officials and the Department's volunteer citizen Commission act as representatives of the citizens in Oregon governance.

d) **Use the best science available to assess fish populations, provide for maximum sustainable catch, and respond to angler preferences.**

The Department will maintain or improve assessments of fish population numbers and their performance to provide the best information possible on which to base decisions regarding harvest management. Fisheries management relies on information about fish population size, distribution, and habitat conditions to identify opportunities for catch and harvest. Scientific assessments based on these data can better inform the decision-making process. Incomplete understanding of the complex natural systems that fish inhabit coupled with the need to protect native fish stocks, may limit opportunities to allow harvest. When

planning for harvest opportunities, the Department uses precautionary approaches (Richards and Maguire 1998) to protect native species. Additionally, as our culture diversifies, fishery managers need information about non-traditional or nongame fisheries that have not been well studied in Oregon (e.g. carp, suckers, pikeminnow, shad). Well-designed monitoring programs can help the Department determine if harvest regulations are appropriate, where more regulation is required, and where additional angling and harvest can be allowed. Scientific surveys of anglers are important to understand the use, catch, and references of Oregon anglers.

e) **Actively manage fisheries to provide recreational angling opportunities.**

The Department will use available tools and resources to actively manage recreational angling in order to provide maximum sustainable opportunities for the public in accordance with the Department mission, statues, rules, and policies. Successful active management requires planning, prioritization, implementation, and evaluation to provide successful, diverse, and cost-effective angling opportunities (Pereira and Hansen 2003).

f) **Develop and maintain access to water bodies to provide diverse angling opportunities.**

Maintaining current facilities and developing new access for angling on publicly and privately owned properties is essential to meet current and future demands for recreational fishing. Important access issues include providing opportunities for disabled, beginning, and urban anglers; maintaining the number and the quality of existing sites; and strategically locating new sites on river reaches, lakes, reservoirs, and the Oregon coast. Maintenance of existing facilities is important to maintain the quality of the angling experience. The Department must work with public and private landowners to acquire access to a diversity of fishing sites through easements, agreements, and outright purchase; develop necessary infrastructure on the sites; and adequately maintain site amenities.

g) **Educate the public regarding fish, fisheries and the natural environment.**

Understanding of fish, their habitats, and the natural world is important for the Department to accomplish its mission of protecting and enhancing fish and wildlife resources for present and future Oregonians. Education programs must not only teach people about angling, but also about responsible stewardship of our natural environment. Changes in technology and increasing diversity in family structure and ethnicity require modifications in teaching methods and tools employed. The Department must have infrastructure, staff, volunteers, and partners to respond to these changes effectively and efficiently. Successful education programs to recruit and to retain anglers depend on the development and implementation of relevant, engaging programs.

h) **Promote and market fishing and outdoor activities.**

The Department must actively promote and market angling to retain and recruit anglers. The state of Oregon has many wonderful opportunities for recreational angling, but the public may not be aware of them. There are many competing demands for time, family structures are more varied than in the past, and our population is growing more diverse. Focused, persistent marketing with a consistent message targeted to appropriate audiences is needed.

We also have many public and private partners that have a vested interest in angling participation. The Department should be cooperating with existing partners at a greater level and developing new partnerships to promote angling.

i) **Reduce barriers to fishing participation.**

People do not participate in angling or stop angling for many reasons. The Oregon Licensed Angler Survey (Responsive Management 2006) identified time as the primary reason limiting angling, followed by age and health. In 2008, the economic climate may be a limiting factor. The complexity of angling regulations and language may be barriers to some. The challenge for the Department is to identify barriers to participation and act to overcome those barriers.

j) **Develop partnerships.**

The Department must maintain and strengthen existing partnerships and develop new partnerships to accomplish its goals. Partnerships with other state agencies, other states, federal agencies, municipal and county governments, schools, outdoor-oriented non-profits, conservation groups, retail stores, and equipment manufacturers based on shared or similar goals enhance recreational angling opportunities and allow the Department to achieve more with limited resources.

k) **Incorporate information from other disciplines.**

Managing fish is managing people (Hilborn 2007) and is done in increasingly complex economic and social circumstances. The Department will incorporate information from other disciplines of study such as recreation planning, sociology, and economics into recreational fisheries management.

l) **Staff and organize the Department to support recreational fishing.**

Good recreational fisheries management relies on adequate staffing that is able to plan, investigate, and implement actions. We must be able to respond quickly and efficiently to opportunities and questions. The Department must work to ensure funding and staffing to support recreational fisheries.

V. ACTIONS AND PILOT PROGRAMS TO ENHANCE RECREATIONAL ANGLING

This section describes actions and pilot programs that will accomplish the goals of providing diverse, stable and productive angling opportunities and increasing angling participation. A variety of actions are needed to provide good opportunities. These are suite of actions to be initiated in the next five years. Additional actions will be developed when we fully evaluate specific fishery opportunities throughout the state (see below). Additionally, the Plan and its associated strategies and actions will be reviewed every five years to identify and describe future actions.

Evaluate existing fisheries and identify new opportunities (Goal 1, Strategies c, d, e, and f)

Problem: Angling opportunities can be limited for many reasons, including low fish numbers, reduced seasons, lack of access, diminished quality of the fishing experience, or lack of information about harvest potential. Oregon's population increase coupled with low fish numbers concentrates anglers into existing sites. Public and private landowners may limit access, sell property, or reduce maintenance due to budget constraints, liability concerns, and other reasons. These actions reduce fishing opportunities and the quality of the fishing experience.

Action: The Department will systematically evaluate opportunities to improve or initiate fisheries and access to fisheries in waters throughout the state. The Department will identify the management actions needed and the constraints limiting the waters of Oregon to realize their fishery potential. Enhancement opportunities will be prioritized for implementation in the short-, mid-, or long-term (next 5 years, 5-10 years, or greater than 10 years, respectively)

To maintain the existing angler base and to recruit new anglers, the Department should identify new fisheries, maintain existing fisheries, ensure access for boat and/or bank anglers to those fisheries, and work to ensure fisheries are performing at their potential. This evaluation would be based on existing information and District knowledge of the status of recreational fisheries and would identify the resources needed to optimize specific recreational fisheries. Short-term efforts by the Department to optimize recreational fisheries would be strategic in nature and focus on fisheries that are in high demand by anglers, serve target participants (e.g. youth, families, non-traditional anglers), and have high likelihood of success. The Department would be guided by the NFCP, the HMP, and conservation and basin management plans to identify actions appropriate for specific fisheries.

A fishery performing up to its potential is one that anglers are able to effectively access and that is providing the product that is sought by anglers. Factors controlling the performance of a fishery include the ecology and natural productivity of the water body and the presence of competitive or predatory species. The Department should work to understand factors influencing the productivity of a system, the numbers of fish available for catch, and the likely impact of catch on a fish population. The Department

can influence a fishery by regulating consumptive and non-consumptive harvest, supplying hatchery fish, providing or brokering access for anglers, and disseminating information regarding the fishery.

District staff in the Department will evaluate angling access points within each Watershed District to identify opportunities and barriers to angling. We will identify strategically located access points, the ownership, and infrastructure and maintenance needs. Access can be achieved through outright purchase, easements, and less formal agreements. Public agencies, counties, cities, and others will be important partners to acquire and/or maintain fishing sites. Prioritization criteria should include, but not limited to: 1) proximity to large population centers such as Portland, Salem, Eugene, Bend, Klamath Falls, and Medford; 2) availability of easily accessible, high-success fisheries for the beginning angler; 3) likelihood of developing additional bank access in existing fisheries that may be dominated by boat fisheries due to limited bank access points; 4) suitability of sites to deploy infrastructure that improves fishing opportunities such as piers and platforms for bank anglers, ADA facilities, restrooms, and boat ramps; 5) possibility for new types of angling opportunities; 6) lack of nearby sites; and 7) availability of other related fish, wildlife and outdoor activities.

Additionally, anglers value the outdoor experience associated with fishing. Nefarious behavior such as vandalism, fighting, and poaching, sometimes discourages anglers using Oregon waters. We must develop a code of "Angler Ethics" and use law enforcement, when and where necessary, to maintain the quality of the angling and outdoor experience.

Fishery evaluations and enhancements are in progress on several lakes in Oregon. For example, the trout fishery on Philips Reservoir was degraded due to illegally introduced yellow perch. In cooperation with the county, the Department is developing a plan for removing perch and enhancing the trout fishery.

Timeline: The statewide, systematic evaluation will begin in early 2009 and will identify opportunities, type of fishery, enhancements needed, expected benefits, estimated costs, desired timeline, and priority. Infrastructure and program development will be initiated within staffing and funding limits. The acquisition of new sites is ongoing and will be opportunistic. During development of this Plan, an initial list of sites has been identified.

Budget: Systematic evaluation of needs and opportunities can be accomplished by existing staff as time allows or using new Recreational Fishery Specialists (see below, staffing). Some actions can be accomplished within existing budgets by developing appropriate regulations, stocking hatchery fish at different locations, and/or increasing public awareness of opportunities through education and marketing. Infrastructure development, hatchery fish, and program development will require additional funds and will be funded using Department-managed funds such the Restoration and Enhancement Program (R & E) or Sport Fish Restoration (SFR), partnerships with like-minded groups, and appropriate grants that may become available. A two-rod

endorsement and an increase in the R & E fee are being considered as part of the Department's 2009-11 budget. Funding from these sources could improve the Department's ability to monitor, evaluate, and enhance recreational fisheries as well as provide for new recreational fishing opportunities.

Evaluation: Evaluation will be specific to each fishery and will be commensurate with the magnitude of the actions taken. Plans for monitoring and measuring success must be part of any significant management action. Periodic review of statewide fishery development will be concurrent with review of this Plan.

Develop and implement actions within the hatchery system to enhance angling opportunities (Goal 1, Strategy b)

Problem: Oregon hatchery programs face increasing challenges to produce the quantity and quality of fish to meet diverse, statewide angling demand. These challenges include reduced water quality and quantity, concern over interaction with native fish stocks, increased prevalence of diseases, and demand for more specialized hatchery products to meet specific fishery management needs. Increasing population, new fisheries, and greater diversity of angling opportunities will place greater pressure on producing more fish of different sizes and species within the existing system.

Action: The Department's hatchery system will, using guidance provided by the NFCP and the HMP, implement the following actions.

- *Increase hatchery production to meet growing needs:* Developing new fisheries or expanding existing ones may require more hatchery fish for stocking. In addition, there may be a growing demand for stocking larger fish (as opposed to fingerling size) that are immediately available to harvest by anglers – the so called "put and take" fishery. In some fisheries larger hatchery fish are also stocked to better compete with non-native, illegally introduced fish species such as bass or yellow perch.

- *Develop more reliable, tested, and cost-effective ways to produce hatchery fish that complement, rather than compete with, existing wild populations of fish:* Where native fish inhabit the same waters, stocking hatchery fish requires careful consideration to avoid negative impacts on the native fish. Options may include producing sterile trout that will not reproduce or spawn with native fish, selecting hatchery brood fish from the fish stocks where the progeny will be released, and developing angling regulations that favor hatchery fish and minimize impact to native populations. The Oregon Hatchery Research Center is conducting research to improve the Department's ability to produce hatchery fish that are not detrimental to wild fish and to produce and use triploid trout.

- *Monitor, evaluate, and work to minimize the impact of fish pathogens on the hatchery product and on co-existing species in Oregon waters:* Most pathogens are treatable but therapeutics are expensive, reduce growth in fish during epizootic

events, and can amplify the pathogen. Concern about water quality has reduced options for treating diseased fish in hatcheries. Some pathogens are untreatable and in some cases can cause serious fish loss and create problems with production objectives, transfers, and use of fish in waters of the state. Using springs and wells for hatchery water supplies is one solution, but if that is not possible, ultraviolet treatment is a tested and workable solution to clean water supplies. Additionally, the horizontal movement of pathogens in the waters of Oregon can impact native fish stocks and locations to use hatchery product. Careful assessment of fish pathogens is needed to effectively control their proliferation and impact.

- *Install technologies that improve the efficiency of hatchery production:* These technologies include, but are not limited to, low-head oxygen structures to reduce water demands (available water is a limiting factor at many hatchery facilities) and ultraviolet water treatment to reduce pathogens. The Department will continue to pursue implementation of appropriate, cost-effective technologies to improve hatchery production.

Timeline: This effort is ongoing. The Department hatchery system continually seeks to provide the species and size of fish needed and improve operations. Plans to increase trout production will be implemented if funding becomes available. Specific research tasks are designed and executed when a need is demonstrated and funding, through Department programs or partners, becomes available. Evaluation of treatment and impact of fish diseases is conducted by the Department's Fish Pathology Program in coordination with District and Research field staff.

Budget: The estimated cost to increase trout production to meet identified needs is $400,000. This is part of the Department's budget proposal, but is unfunded at this time. Costs for new technologies, research on new spawning and rearing techniques, and new facilities are highly variable. Limited work can be absorbed in the Department's Fish Propagation Program budget. Other activities are funded through grants from R & E or SFR grants or from outside sources.

Evaluation: Fish stocking programs should be evaluated based on angler surveys. Most the research activities require direct evaluation of their effectiveness. Other actions will be reviewed based on anecdotal information from District and Propagation staff.

Develop a program for ongoing maintenance of angling sites (Goal 1, Strategy f)

Problem: Some angling sites are poorly maintained and reduce the quality of the angling experience or prevent people from participating in a fishery.

Action: The Department will develop a funding and administrative mechanism to ensure maintenance of existing properties.

The lack of dependable funds has been a chronic problem and currently most of the

maintenance functions receive limited, piecemeal funding. Consistent, dedicated funding would alleviate erratic maintenance efforts. This effort should identify critical areas that provide maximum angling benefits to a wide spectrum of anglers. Well maintained access points will help recruit and retain anglers.

Timeline: An approach to maintain Department sites will be developed in 2009.

Budget: No additional funding is required to identify problem areas and develop access agreements with public and private partners. Cost to purchase and construct access on new sites is high and will use existing partnerships and funds managed by the Department such as R & E and SFR. Improvement of existing sites will require significant additional operating funds and staffing, but a systematic program to maintain infrastructure is likely to be cost-effective in the long run.

Evaluation: The Department will periodically survey, to the extent practical, use of new sites. This might include metrics such as number of anglers on index day, such as opening day or holiday weekends. The Department will also provide voluntary reporting cards at selected new sites. Landowners will be asked to assist. If sites are developed at publicly-owned properties with existing infrastructure such as state or county parks, evaluation could use existing fee or registration procedures.

Use the Salmon and Trout Enhancement Program (STEP) to enhance recreational angling ("STEP into the Future with Kids", Goal 2, Strategies a, b, c, and g)

Problem: Fewer young people in Oregon are fishing today and are losing their connection to the outdoors. STEP, although effective on many fronts, has approached its charge in a variety of ways with no defined strategy for encouraging youth participation in angling.

Action: The Department proposes modifying the current STEP implementation to directly address recreational fishing priorities of providing opportunity, access, and mentoring. This restructuring would focus on youth anglers but would provide direct and indirect benefits to all anglers.

The Oregon Legislature established STEP in 1981 as a program of the Department that seeks to achieve the recovery and sustainability of the state's native salmon and trout through the education of Oregon's citizens and their involvement with fish management. Annual volunteer efforts lend critical support to the management programs of the Department and contribute to the more extensive statewide efforts toward fish and watershed restoration under the Oregon Plan for Salmon and Watersheds (OPSW).

The current categories of STEP activities are:

- *Education and Program Development* informs the public about Oregon's salmon and trout resources, their habitats, and STEP. Projects include classroom fish egg incubators, presentations, classes, volunteer training, tours, displays, printed

materials, and equipment construction and maintenance.

- *Inventory and Monitoring* activities characterize fish populations and their habitats. Projects include stream and riparian habitat surveys and other methods used to study, monitor, or inventory salmon and trout.

- *Habitat Improvement* activities enhance, restore and protect habitat for native stocks of salmon and trout. Projects include the placement of large woody debris in streams, riparian protection and restoration, fish passage improvement, and fish carcass placement for stream nutrient enrichment.

- *Fish Culture* activities produce fish to supplement natural fish production, augment fisheries, or provide educational opportunities.

Modifications to the STEP program will include activities in all these categories, but will target youth and family involvement and trout fisheries. Focus on understanding natural ecosystems and habitat improvement will remain a priority. Under this proposal, we would modify the work duties for the Department's eleven STEP biologists to accomplish the following priorities:

- *Locate, develop, and promote simple, low cost fishing opportunities for youth and families:* These would typically be still-water, "bait and bobber" opportunities. Fisheries in streams would be pursued when possible. Regulations in these areas would be simple and easy to understand, and the fisheries would be managed to have easy-to-catch fish.

- *Locate, develop, and promote close and easy access to angling opportunities:* Ideal sites would consist of creeks and ponds close to urban and rural communities and easily accessible on foot or by car, bicycle, skateboard, bus, etc. Other key features include plentiful bank access; safe, clean, secure locations; and network of "youth (< age 18) and family only" angling locations throughout the state.

- *Establish a formal youth mentoring program:* The mentoring program would be designed to provide prospective young anglers instruction on fishing techniques, angling and environmental ethics, species identification, basic aquatic biology and ecology, and other topics. This program would emphasize nurturing and follow-through with individual youth to help fully develop their interest in angling and the outdoors. Parents and other relatives, Department staff, partners in other agencies and groups (e.g. Oregon State Police, Oregon Parks and Recreation, Boy Scouts of America, Oregon Trout), and specially-trained volunteers would serve as the mentors.

Timeline: Initial work to define goals and responsibilities for STEP and the STEP biologists will begin immediately. The mentoring program should be implemented during 2009. Work to develop angling locations will be ongoing and opportunistic.

Budget: Current funding for STEP staff, supplies, and services is provided by federal SFR dollars. We proposed additional spending of $240,000 per biennium to develop and maintain new youth angling sites, purchase angling supplies, provide educational materials, and provide training to volunteers and mentors. These additional funds will enhance STEP programs by increasing service and supplies and could also increase the probable hiring of additional seasonal personnel to accomplish new program objectives. Funds may be obtained from available SFR program funds, from the Restoration and Enhancement Program funds for specific projects – or a combination. Strong involvement of volunteers and grant funding for specific projects will offset some costs. If duties for the eleven STEP biologists change significantly, there will be added cost for Department staff to pick up essential duties that are dropped. Additional hatchery production of trout will be needed, although existing STEP groups experienced with fish culture will be encouraged to develop trout programs.

Evaluation: The STEP biologists and STEP coordinator will define measurable goals and conduct a full assessment of the program using metrics such as number of youth mentored, frequency and duration of mentoring contact, number of new youth and family opportunities developed, extent of volunteer involvement, cost to the Department, changes in angler effort and license sales, and other factors.

Initiate an inland sport fisheries advisory board (Goal 2, Strategies c, e, g, h, and i)

Problem: The Department's ability for organized two-way communication with groups and individuals advocating for freshwater sportfishing opportunities is limited and not well-structured.

Action: The Department will improve communication with stakeholders by developing the framework and initiating an inland sport fisheries advisory board that will provide a voice for a wide range of recreational angling interests and complement other Department advisory boards.

The advisory board is intended to provide a forum for the exchange of ideas, concerns, and solutions for management of recreational fisheries. An active, ongoing advisory board develops a broad base of knowledge and experience upon which to base recommendations for Department fisheries managers.

In an advisory role, the responsibilities of the board may include:

- Identifying recreational fishing opportunities;
- Identifying and recommending actions on fishery management issues and policies;
- Acting as a liaison between the Department and the angling public to help inform the angling public on fish management policies;
- Identifying and recommending short-, mid- and long-term goals and approaches for recreational fishery management;
- Developing and recommending specific tasks and opportunities for enhancement

of recreational fisheries ;

- Providing oversight, guidance, and accountability for implementation of Plan actions by assisting with prioritization of projects, plan implementation, and public awareness of Plan activities;
- Reviewing angling regulations and proposed changes to the process to develop angling regulations;
- Providing input for acquisition of angler access sites;
- Providing input into the Department's budget development and budget priorities;
- Identifying and recommending strategies and tactics for marketing;
- Identifying and recommending strategies and tactics for angler education;;
- Identifying and recommending strategies and tactics for retaining and recruiting new anglers;
- Advocating for recreational angling opportunities in appropriate forums;
- Identifying opportunities to provide diversity in recreational angling opportunities;
- Initiating partnerships to facilitate angling opportunities; and
- Facilitating two-way communication between the Department and users.

For an advisory group to be effective, the members must be well-informed on issues and able to thoughtfully discuss solutions. This requires commitment both from the Department and from group members. A public advisory board has been used to help guide the Department's warmwater game fish management since November 2002. The Warmwater Working Group is comprised of members of the warmwater angling community and has been effective in addressing many public concerns regarding the Department's warmwater fish management program. Public advisory boards have been formed or are being formed for recreational groundfish management, for shellfish management, and for all species in the Portland metro area. A similar approach is anticipated for the inland sport fisheries advisory board but the scope of activities will be greater.

Timeline: In early 2009, Department staff will formally define group membership criteria and responsibilities, solicit members and begin regular meetings.

Budget: The primary expense will be staff time and will be absorbed by shifting responsibilities of current staff. Small meeting expenses will be absorbed in current budgets.

Evaluation: The group will develop goals and tasks that will form the basis for evaluation.

Develop and implement a marketing plan (Goal 2, Strategies g, h, and j)

Problem: The Department is not adequately reaching the public to promote angling in a coordinated way, using tools appropriate to different age and user groups, and partnering fully with groups with similar objectives.

Action: The Department will develop and implement a marketing plan aimed at the

retention and recruitment of anglers.

The marketing plan will target recruitment toward youth, non-traditional anglers, newcomers, and visitors. The marketing plan will identify the best opportunities and tools to promote angling in ways that are appropriate for different ages and user groups. Marketing strategies will include developing partnerships with government agencies, non-governmental organizations, and private industry. Marketing actions within the Department will be coordinated with the Department's angler education.

The Department's marketing strategies will focus primarily on partnerships. Working with agencies such as the Oregon Department of Parks and Recreation and the Oregon State Marine Board, we can reach individuals and families that are most likely to fish or continue fishing. Working with the Oregon Tourism Commission (dba Travel Oregon), the statewide entity that promotes tourism, is an opportunity for the Department to promote fishing among both in- and out-of-state travelers. The Department will also explore working with non-sporting or non-recreational state agencies, such as the Department of Health and Human Service and the Department of Education.

The Department can also leverage the strength and resources of federal agencies. We will work closely with the U.S. Fish and Wildlife Service, the U.S. Forest Service, the U.S. Bureau of Land Management and other federal agencies to promote fishing. Federally funded organizations such as the Recreational Boating and Fishing Foundation can provide added resources and expertise to implement marketing campaigns.

Non-profit and non-governmental organizations represent opportunities to reach segments of our target market that the Department traditionally has difficulty reaching. Organizations such as Big Brother/Big Sister, 4-H, Girl Scouts/Boy Scouts, Boys and Girls clubs, summer camps, community organizations, and college clubs have the audience, knowledge, and logistical capabilities to reach and motivate some of the often-missed target groups.

The Department will seek partnerships with Oregon fishing industry leaders, such as Columbia Sportswear, Joe's, Sportsman's Warehouse, and other retailers. Industry leaders can augment the Department's message with their resources and marketing expertise. Non-fishing related industries such as realty groups, chambers of commerce, corporate event planners, and other groups represent an opportunity for the Department to promote fishing as an activity to enjoy in Oregon.

Timeline: Marketing is ongoing. The Plan will provide the framework to identify priorities. Some actions, such as recruiting lapsed anglers, are in progress. Individuals within the Department are developing activities and partnerships within their geographic areas.

Budget: Estimated cost for a Department marketing specialist is $154,000 per biennium. An estimated $200,000 for supplies and services associated with marketing

will be shared with participating partners. The cost of specific strategies and tactics for each target market will be developed based on cost-effectiveness and the availability of resources.

Evaluation: The success of the marketing plan will be evaluated across a spectrum of indicators. Total angler participation, annual changes, and participation by user group and geographic location each year will be lead indicators. Secondary indicators will include license sales, program participation rates, and the willingness of our partners to continue working with the Department. As specific tactics are implemented, a targeted monitoring or evaluation program will be developed.

Improve existing and develop new angler education programs (Goal 2, Strategies g, h, and j)

Problem: The Department is not adequately delivering education programs to the public that respond to clearly defined goals, are planned and coordinated with other Department programs, and use evaluation tools to determine their effectiveness.

Action: The Department will implement a coordinated approach to angler education that is closely aligned with STEP, uses new and existing education programs, targets youth and non-traditional anglers, is coordinated with the marketing program, and includes evaluation of the success of each activity. Angler education programs will include "Angler Ethics" as a component.

The Department currently offers hunting, angling, and other recreational training to people of all ages through specialized outdoor skills and educational programs such as Youth Angler Enhancement Program (YEAP), Aquatic and Angler Education (AAEP), and Becoming an Outdoors Woman (BOW). These programs are taught by Department employees and specially trained volunteer instructors. In addition to current offerings, proposed new pilot projects include:

- *Partnering with non-profit, non-governmental organizations*: Organizations such as Big Brother/Big Sister, 4-H, Boys and Girls Scouts, summer camps, community organizations, and college clubs that work with youth in a long term mentoring capacity can be important and willing partners. Currently, the AAEP and STEP are collaborating with the Boys and Girls Club of Corvallis, where there has been a successful program for the last two years. Evaluation will include measuring attitudes and skills around angling from program entry to program exit. Participants will be tracked to show if such programs lead to increased awareness of and participation in outdoor activities and to future license purchases.

- *Educating parents to enhance continued angling opportunities for youth:* The "Learn To Take a Child Fishing" program will pilot in Salem and Portland and will focus on increasing the angling skills of adult caregivers, creating successful field trips for youth, and promoting family-based activities. This will be led by existing

trained Angler Education Instructors (Instructors). Follow up surveys will be sent to adults and families to find out if they fished more and/or purchased a fishing license after these experiences.

- *Partnering with local businesses to host booths at events at a popular public fishing lakes:* Working with STEP biologists, trained Instructors, employees from the businesses, and other volunteers, the AAEP will coordinate activities to teach youth anglers how and where to fish. Parents will know there will be someone at the lake on a regular basis to help their children fish. An initial project is being planned with Instructors partnering with staff from the Sportsman's Warehouse to host a booth every Saturday at Walter Wirth Lake near Salem from April 15 to August 31. There will be an evaluation of number of anglers served, the amount of time spent on planning and execution, and an on-site survey of participants to rate the value of such a service.

- *Focused outreach to minority and urban populations:* These would be focused outreach to targeted communities around the state, including limited production of materials in other languages. This program is currently being piloted by the AAEP in the Portland and Salem areas. These programs will have an evaluation component that will measure the program's value to the community and increased participation and/or license sales.

Timeline: The projects will be implemented in 2009 and will be continued indefinitely if the evaluations determine the projects are successful.

Budget: The angler education programs in the Department are primarily funded with an SFR grant and use volunteer participation. The costs are approximately $321,000 per biennium, supplemented by an estimated equivalent of $107,000 through volunteer donations of time. Expansion of the angler education programs will require additional funding.

Evaluation: Each project will have evaluations specific to the task and are listed above.

Develop resource centers for angling (Goal 2, Strategies g, h, and j)

Problem: Becoming an angler and feeling comfortable in the outdoors can be intimidating, especially if the nature of one's family background, culture, and experiences does not encourage angling. Oregon has few ongoing, easily accessible facilities to provide Oregonians opportunities to learn about fish, fishing and the outdoors.

Action: To promote public interest for angling and involvement in outdoor activities, we propose interactive and comprehensive fishing learning and resource centers.

This concept addresses the objectives of Oregon angler recruitment, education, and retention. The goals are a more diverse and informed angler base, improved access to

angling information (techniques and opportunities), better angling ethics, and increased understanding of angling regulations. If strategically developed and promoted, angling centers will enhance opportunities for youth and minority anglers. We expect these centers will increase angling license sales and, in turn, improve the Department's ability to effectively manage fisheries.

Interpretive center activities will complement and be modeled from existing Department programs, including STEP, YAEP, AAEP, and BOW, among others. While the primary intent will be to provide basic angling instruction and information (with a focus on recruiting new anglers, especially young people), the center(s) will serve as a resource for anglers of all experience levels. Example topics, activities, and information include:

Angler ethics
Angling maps and brochures
Angling regulation explanation
Angling techniques
Aquatic flora and fauna identification
Aquatic habitat education
Careers in natural resources
Casting instruction & demonstration
Catch and release techniques
Clinics facilitated by angling organizations
Family fishing destinations
Fish identification
Fly tying instruction
Latest angling reports
Live fish displays
Live fishing instruction
Loaner equipment
"Master Angler" certification
Resources for aquatic educators
Staff advice
Trout stocking schedules
Video instruction
Volunteer opportunities
Youth angling opportunities

Angling centers can be developed in a number of ways described in the following concepts:

- *Concept 1 - Expand opportunities at hatcheries and wildlife management areas to include year-round, or at least more extensive, opportunities for fishing.*

  The Department sponsors activities at many of these sites on "Free Fishing Day" or other events oriented toward youth and families. Under this option, we would enhance the infrastructure at the sites, recruit volunteers to assist in teaching participants about fish and fishing, and use staff when available.

- *Concept 2 - Develop partnerships with nature centers, parks, and other endeavors to include information and activities about fishing.*

  Many opportunities exist throughout Oregon such as the Oregon Coast Aquarium, Sunriver Nature Center, the Salem Kroc Center (under construction), and many small facilities. Forming partnerships will decrease the cost to the Department and will clearly demonstrate the relationship of fishing, ecology, and resource conservation.

- *Concept 3 - Develop a traveling fishing and nature center.*

The Department would purchase, develop, and maintain a mobile fishing center such a large semi-truck and bring the information where there is a need and interest. This option would provide access to large numbers of people, especially young people. The mobile center would get a great deal of attention, both at its destination and while on the road. The Alaska Department of Fish and Game (ADFG) has a mobile aquatic education classroom that travels to streamside, lake, or coastal locations for youth and adult education. The truck and its operation are paid for by ADFG, federal and state grants, and private contributions. Purchase, design, development, operation, and maintenance would require full-time Department staff.

- *Concept 4 - Build a statewide center in Portland or Salem*

A center in the population centers of Portland or Salem would allow access for the large numbers of people. Additionally, urban dwellers have fewer easily accessible opportunities than smaller Oregon towns.

Locating the interpretive center in Salem at or near the Department headquarters office presents a number of advantages including: (1) existing space on the first floor that could serve as the hub of the program, offering small instructive clinics, displays, video instruction, and advice from staff; (2) large, maintained lawns for casting practice and other outdoor instruction; (3) existing staff from relevant programs (e.g. the Aquatic and Angler Education Coordinator); (4) angling and hunting licenses available for purchase on site; (5) proximity to population centers in the Willamette Valley and near Interstate 5; (6) a large meeting room; (7) easy access to Department literature; (8) high exposure because the office already serves many customers; and (9) ample parking usually available nearby. There is a privately-owned property including a large pond within walking distance of the headquarters building that may be available for lease. Several other properties with ponds are a short distance away and could provide similar opportunities.

The Department could seek a stand-alone facility in the Portland metropolitan area. The Department's Northwest Region offices in Clackamas do not have space to accommodate such a program, so a site on Department or private property near a pond or lake would be needed. A Portland facility would be more difficult to staff with existing Department employees, but could take advantage of the large, diverse volunteer base near Portland.

An existing program in Boise, Idaho provides an example of this type of facility. The Morrison Knudsen Nature Center (MKNC) is located on a 4.6-acre greenbelt site near downtown Boise and opened in 1990. It was conceived and developed by local Idaho Department of Fish and Game (IDFG) volunteers and constructed with state, federal, private, and public donations. Now owned and operated by the IDFG, the center is supported by hunting and angling license dollars, U.S. Fish and Wildlife Service grants, nongame funds, donations, nominal tour fees, and revenue from an on-site gift shop. Staffing includes 3-5 full-time IDFG employees, a number of work-

study students, and many volunteers. Major MKNC components include an education building with displays and hands-on activities, a gift shop, a self-guided "stream walk", and hosting for seasonal special events, such as "Idaho Salmon and Steelhead Days". Fee programs include school field trips (at a cost of $1.00 per student), custom student activities (e.g. native plant identification, owl pellet dissection) at a cost of $1.50 per student, and group tours ($1.00 per individual). By all accounts, the MKNC is a successful and popular program, annually welcoming about 300,000 visitors and providing tours for about 15,000 students.

At either a Salem or Portland location, staffing required to run the facility and associated activities would depend on the hours of operation, level of interest, and involvement by volunteers. A minimum of one staff person and one or two volunteers would likely be required for operation of the indoor facility during a five-day, 40-hour week and additional staff or volunteers would be required for off-site angling.

- *Concept 5 - Build an indoor instructional and informational facility (and staff) as described in option 4 but without centralized live fishing instruction.*

  Participants interested in real-time angling instruction or youth opportunities could be directed to existing programs. This approach would result in lower operating costs but would likely be less effective at training and retaining anglers.

- *Concept 6 - Build regional facilities as described in concepts 4 and 5 at locations such as Newport, Astoria, Bend, Eugene, Medford, Klamath Falls, or LaGrande.*

  Under this option, the Department would work to include centers within regions of the state. Regional facilities would be able to tailor programs to local fish species and opportunities.

Timeline: Increasing opportunities at Department-owned facilities could be done during 2009 if we had adequate volunteer recruitment. Timelines to upgrade infrastructure will be highly variable and dependent on funding through Department programs or grants. Partnerships with like-minded groups can be initiated in 2009, although planning and developing specific programs will depend on their complexity. Stand-alone centers, both centralized and regional, or a mobile center will be initiated as funding is found and will take considerable planning.

Budget: Costs for the range of options are highly variable. Cost to add programs and infrastructure at facilities that already exist, such as Department hatcheries and those run by other groups, would be relatively small. Some could be absorbed in existing budgets if volunteers were available to staff the site. Purchasing or leasing, building, and staffing dedicated sites would be expensive to develop and operate. It is expected that these would require new staff, such as the Recreational Fisheries Specialists, to initiate and plan and grant funding to develop.

Evaluation: The Department would tally use of the center(s), including measures such

as number of participants, hours of instruction, volunteer hours donated, numbers of licenses sold on site, and demographic information about participants. Follow-up interviews would be conducted to determine angling activities of the participants after visits to the center.

Evaluate and improve the mechanism to update fishing regulations and revise the fishing regulation document into a more user-friendly format (Goal 2, Strategy i)

Problem: Complex fishing regulations may be a barrier to fishing, can detract from the ease and enjoyment of fishing, or may discourage anglers from trying a new location or type of fishing. Angling regulations are probably the most frequently used tool provided to the angling public by the Department, yet some are frustrated with the development and the format of the angling regulations.

Action: The Department will evaluate the process for developing angling regulations and recommend changes. Goals include ensuring the process is efficient, that regulations are based on the best science available, and there is opportunity for broad public participation. Regulations should be formatted to be clear and user-friendly and be available using modern communication media.

The Department will continue to work with anglers and interested parties to make the regulations more readable and understandable. We will solicit ideas from other state agencies that have had some success improving the formatting and readability of their regulations. The Department is also investigating contracting with an outside source to review our existing angling regulation pamphlet and identify revisions that address concerns of the public and staff regarding the pamphlet's complexity and format.

Timeline: This project will be initiated in 2009. Changes to the process for regulation development and adoption will be completed and implemented for next cycle in 2013. Modification and simplification of the regulation booklet will be implemented by 2011.

Budget: A limited review and revision can be accomplished with current Department staff. Major revisions to the angling regulation booklet will require outside expertise on design and presentation. It is estimated that a contract of this nature would cost $25,000 - $40,000.

Evaluation: Users will provide anecdotal information regarding regulations. Future angler surveys will assess improvements to the regulations.

Evaluate the use and accuracy of the Combined Angling Tag and Hatchery Harvest Tag (Goal 1, Strategies d and e)

Problem: The Combined Angling Tag and Hatchery Harvest Tag (Tags) are not accurately reflecting catch and harvest of salmon, steelhead, sturgeon, and halibut.

Action: The Department will evaluate the use, return rate, and means to improve the

accuracy and timeliness of information reported on the Tags.

The Department uses information from the Tags to identify trends in angler catch in water bodies throughout the state. Anglers use this information to identify and evaluate fishing opportunities. Return of Tags in Oregon is voluntary and return rates range from 25% to 40%. Calvin and Hicks (1964) evaluated the non-response bias and estimated a correction factor for information obtained from Tags that were returned to the Department. That same correction factor is still used, even though the changes have occurred in the species reported, catch-and-release fisheries, the price of the Tag, the addition of a Hatchery Harvest Tag in 2001, and other factors. The Tags are also used by law enforcement for compliance with harvest limits. Mandatory reporting has also been discussed and is used in other states. Members of the public have suggested that a refundable deposit ($5-10 dollars) when purchasing tags. Changes in the fees or fee structure would require Legislative authorization. To ensure this tool provides the best information to fishery managers, to law enforcement, and to anglers, the Department must reassess use and options for the Tags.

Timeline: This project will begin in early 2009, with a report on recommended actions completed by August 2009. Implementation will depend on the scope of the project.

Budget: The initial scoping can be completed by existing staff. Additional surveys, incentive programs, and other actions will require additional funding. Estimates of costs of a statewide survey of Tag holders can be up to $300,000. Mandatory reporting will include unknown implementation costs.

Evaluation: An initial report and assessment by Department staff will identify use of the Tags and future actions. A survey to estimate non-response bias will contain statistical evaluations.

Increase use of information from disciplines such as sociology, economics, recreational planning and other areas in recreational fisheries management (Goal 2, Strategy d, k, and j)

Problem: A broad range of information, in addition to biological information, is required to manage recreational fisheries and those skill sets are not readily available within existing Department structure.

Action: The Department should routinely seek information from professionals with appropriate economic, social, or other expertise to aid in management decisions regarding recreational angling. This can be accomplished either through training current staff, hiring new staff, working with staff from other state agencies or other states, and contracting with outside consultants. The Department will develop programs with universities to train student in these fields. Active involvement of Department staff with the American Fisheries Society, the Western Association of Fish and Wildlife Agencies and similar groups also provides opportunities to incorporate additional knowledge into decision-making.

Timeline: Training of current staff will begin with Plan implementation and is ongoing. Academic programs to educate students have been initiated.

Budget: Training costs for staff are variable, with workshop prices ranging from free to several thousand dollars. Hiring specifically-trained staff costs roughly $200,000 per position per biennium. Providing input on curriculums can be done by current staff. Supporting a graduate student through an advanced degree program currently can cost up to $40,000-$50,000 per student per year. Cost to hire consultants varies and depends on the scope of work.

Evaluation: The Department will anecdotally evaluate the inclusion of broader information into management decisions.

Increase Department staffing to improve support for recreational fishing (Goals 1 and 2, Strategies a - l)

Problem: The Department does not have the staffing to address many of the state's complex recreational fisheries issues. The Department may not be able to adequately plan for and quickly respond to recreational fisheries management issues. We recognize that to have a good recreational fisheries program, we need to use the best science available to understand fish populations and the impact of fisheries on those populations. Lack of staff dedicated to this purpose makes fish management more imprecise and reactionary.

Action: The Department will seek to increase staffing devoted to managing recreational fisheries and providing opportunities. The goal of these actions is to provide the Department with the tools to use the best science in managing recreational fisheries. We propose to:

- *Increase Department staffing devoted to recreational fisheries management:* We seek to hire three Recreational Fisheries Specialists, one Natural Resource Specialist (NRS) 3 and two NRS 1 level positions, to begin implementing the Plan. Duties for these positions include planning, coordinating, and implementing inland recreational fisheries management projects. The NRS 1 positions would each be assigned responsibilities for eastern or western Oregon. These staff will work with District and STEP Biologists, Fish Division staff, and Department partners to provide technical support and assistance for implementing projects to restore and enhance recreational fisheries consistent with direction provided in the Plan. These positions would complement and build upon the work done by the Department's east-side and west-side Warmwater Biologists.

  For full implementation of the Plan, the Department would seek an NRS 4 position at the Department Headquarters, add another NRS 3 (2 total) positions to initiate, plan and coordinate implementation for east-side and west-side angling enhancement projects, and include 24 months of seasonal staff time for field sampling. The

Headquarters Recreational Fisheries Specialist would develop fishery assessment and restoration projects; coordinate with other Department programs; and have expertise in limnology, trout biology, population dynamics, and other aspects of fish ecology and management. Duties for the other positions would remain as described above, but with regional (east side and west side) responsibilities.

Increase seasonal staff devoted to recreational fisheries studies: Temporary, seasonal staff are needed to inventory streams to understand the status of local fish populations, to monitor harvest to allow maximum harvest opportunities within conservation objectives, and other related activities.

- *Use permanent or ad-hoc work groups:* The workgroups proposed would be technical teams composed of Department staff, staff from other state and federal agencies, and qualified volunteers that would address issues related to recreational fisheries management. Examples of topics include the use of sterile fish, chemical treatment of water bodies, management of lakes and reservoirs, control of unwanted predators or invasive species, or human dimensions of angling. These work groups would organize and produce results rapidly.

Timeline: Evaluation of the current organization is ongoing and is often emphasized during budget development.

Budget: Additional staff positions and associated operating expenses to begin implementing the Plan cost approximately $740,000 per biennium. Full implementation of the Plan would require an additional $424,000 for two permanent staff and $140,000 for 24 months of seasonal staff time. These positions were in the budget approved by the Commission in June 2008, but are not part of the 09-11 Governor's Recommended Budget due to constraints on General Fund dollars. Reassigning duties to existing staff is budget-neutral. Additional seasonal staff and operating expenses for specific projects would be variable and would come from R & E, SFR, or other funding sources identified for each project.

Evaluation: Annual workplan reviews of individuals and overall evaluation by Department leadership will be used.

VI. MONITORING PROGRESS OF THE PLAN AND SUCCESS OF THE ACTIONS UNDERTAKEN

Successful management requires evaluation of actions taken followed by modification of strategies and actions as needed. As described in association with each of our actions in Section IV, we will use appropriate monitoring tools to measure the success of each action. Monitoring and evaluation will include identification of the expected outcomes, methods to monitor outcomes, and timely evaluation of the results. After the evaluation, the Department should expand actions that are successful and modify or drop activities that are not effective.

In addition to evaluating outcomes of specific activities listed, some items can be monitored to measure success of the Plan overall, including:

- number of licenses sold by user group,
- number of access enhancements developed by each district, and
- participation in angling education programs and outreach activities.

The Department will also pursue avenues to monitor and understand interests of anglers (young people and certain seniors) and non-anglers who do not purchase licenses.

A cornerstone in our ongoing management will be the inland sport fish advisory board and other advisory groups. These groups will review activities, examine the success rates, and recommend further actions to appropriate fish managers within the Department. Broad representation and adequate Department staff support to provide regular updates with new information will allow these groups to be the eyes and ears of the Department with regard to recreational angling opportunities and issues. Most situations will not be simple. Monitoring, accompanied by the professional judgment of District and Fish Division staff and the Commission will balance competing demands for the resource. Our management strategies must evolve in response to changing social and environmental conditions.

At five-year intervals through next 25 years, the Department will review and modify, if needed, the Plan goals and strategies in the context of current biological, social, and economic circumstances. We will examine progress toward implementation of the pilot programs and actions. New pilot programs and actions will be developed at that time.

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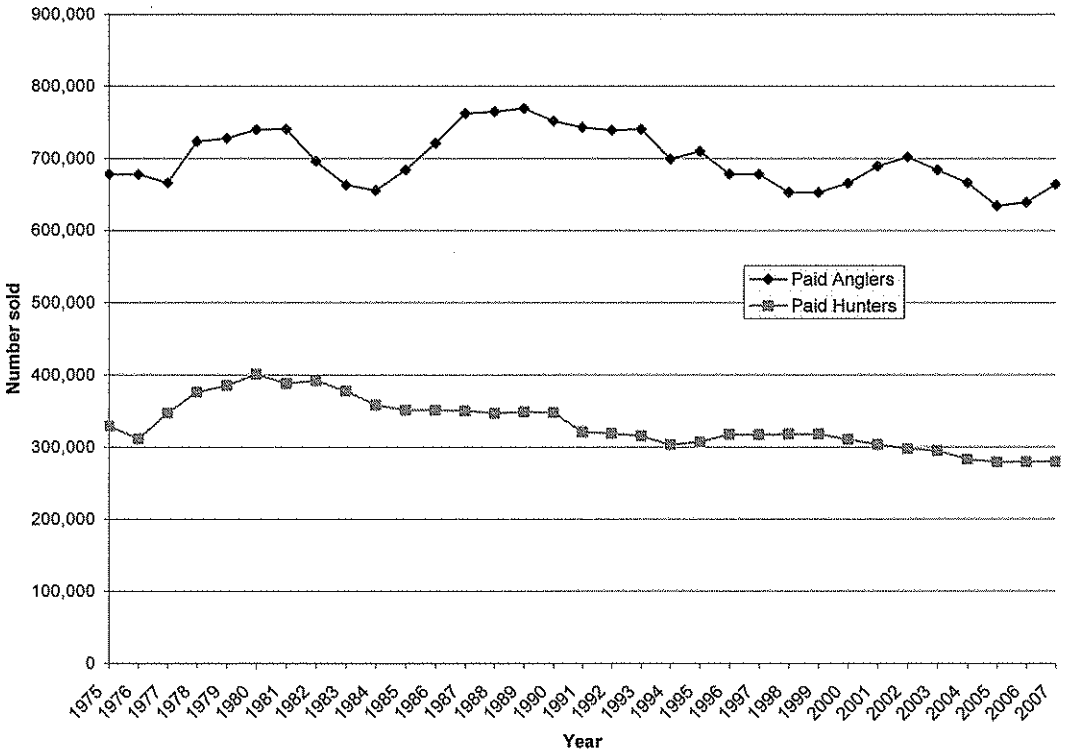

Figure 1. Number of paid anglers and hunters in Oregon, 1975 – 2007.

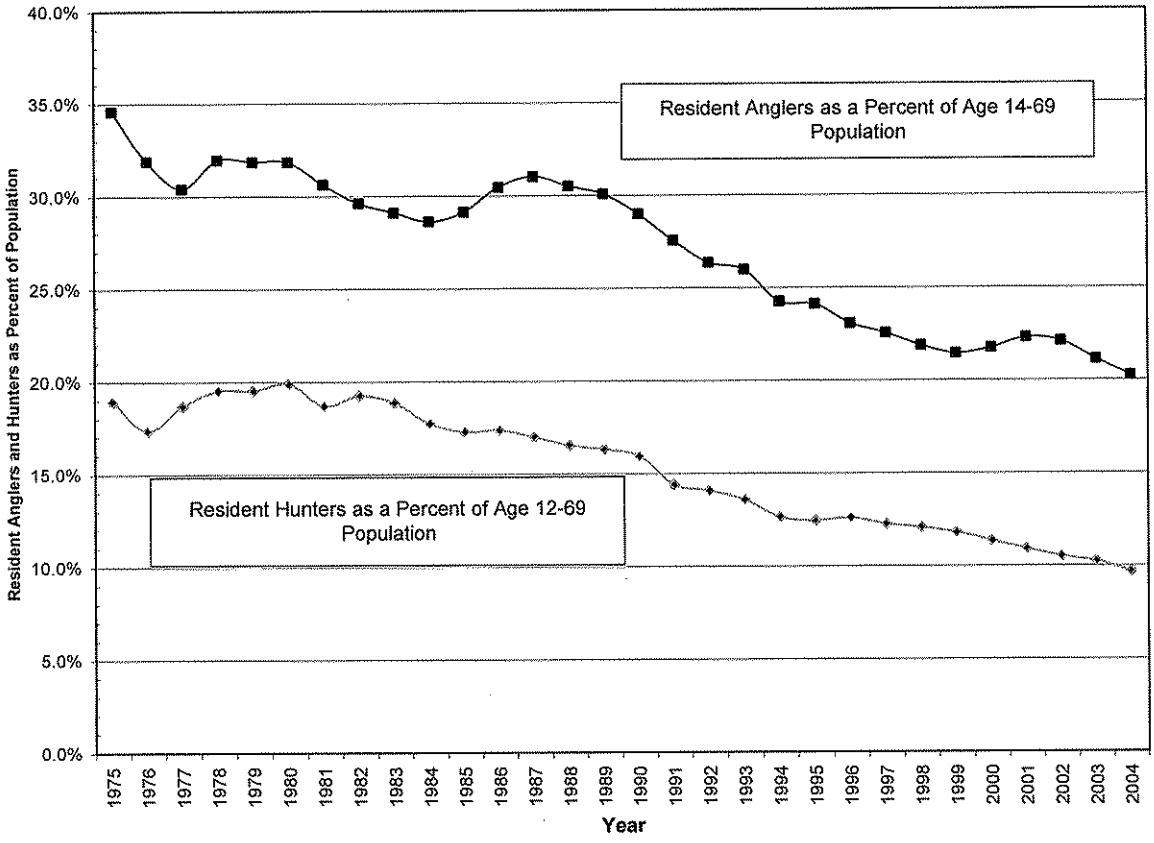

Figure 2. Trend in resident paid anglers and hunters in Oregon as a percent of the license-buying age population.