

Strategic Plan for Management of Trout Fisheries in Pennsylvania

2010 – 2014

Final Status Report

November 2015

Bureau of Fisheries

Pennsylvania Fish and Boat Commission

October 2009



This status report contains excerpts from the “Strategic Plan for Managing Trout Fisheries in Pennsylvania, 2009.” The document contains the 25 priority issues that were identified in the plan, the strategies to address them, and the actions that have been taken, to date, relative to each strategy.

MANAGEMENT OF WILD TROUT WATERS

Issue 1: The PFBC has not assessed all of the streams throughout the Commonwealth. As a result, the total number of streams that support wild trout populations in Pennsylvania is unknown, which leads to inadequate protection for these streams. The PFBC does not currently have the ability to assess these most at-risk streams at a rate that outpaces the rate of degradation.

Strategies:

- By January 2010, develop a prioritized list of un-inventoried streams that are likely to support wild trout and are the most at risk from the effects of human activities.
 - Develop GIS technology to identify potential wild trout streams in association with high development areas and use a sampling approach based on priority ranking.
 - *Completed. Continuing to refine prioritization and thus included in new plan.*
- Sample 200 un-inventoried streams over the next five years.
 - *Completed; approximately 4,060 previously unassessed waters were sampled. Approximately 470 waters were added to the Wild Trout List with more pending. 68 waters were added to the Class A list*
 - *Worked with 15 schools in unassessed waters program as well as DEP, SRBC, TU, WPC, and Pa Academy of Natural Sciences.*
- Develop a status and trends monitoring program for wild trout streams.
 - *Not started*
- Develop a means to involve interested conservation and sportsmen organizations in identifying wild trout populations in un-inventoried waters.
 - *Complete*

Issue 2: There are a number of streams that may hold Class A biomass trout populations that have not been officially designated as Class A streams by the PFBC. This leads to inadequate water quality protection for these waters and inconsistent application of fisheries management strategies.

Strategy:

- By 2014, sample waters identified by PFBC staff as likely to support a Class A wild trout biomass and designate appropriately.
 - *Ongoing. Class A policy changes were made at the July 2013, Commission meeting. In September 2014, Class A policy updated*

to identify that there may be circumstances that justify stocking and that prior to granting permission to stock a Class A, Executive Director will obtain approval of the Commission. In January 2014, Class A policy was changed to address criteria that must be met to designate a stream section with a mixed wild Brown/Rainbow Trout or wild Brook/Rainbow Trout population as well as criteria for removing a water from the Class A list. In January 2015, 10 high biomass-high angler use stream sections were approved for Class A designation and continued stocking. Four additional high biomass-high angler use stream sections have been presented to the commission and since evaluated, three will be brought before the Commission at a future meeting(s) for designation.

Issue 3: Currently, the PFBC stocks adult trout in a total of 80 stream sections that support at least a minimum Class B wild trout biomass. There may be the potential to improve the wild trout biomass on some of these waters through the cessation of stocking.

Strategy:

- Beginning in 2010, evaluate at least 10 of these waters to determine if the cessation of stocking results in an increase in wild trout biomass from Class B to Class A. DFM
 - *Study initiated on 10 streams. Only six streams were found to be Class B streams. Three removed from the stocking program and three continue to be stocked as control waters for study through 2014. Data collection is complete and is awaiting analysis by Pa Cooperative Fish and Wildlife Research Unit. Results are anticipated in the near future.*

- Review wild trout biomass changes that may have occurred as a result of the cessation of stocking that has already occurred on Class B stream sections where historic data are available.
 - *Complete*

Issue 4: Anglers, as well as the general public, do not have an adequate understanding of the classification system used to define wild trout populations throughout the Commonwealth.

Strategy:

- Beginning in January 2010, identify and implement the most effective communication tools to better educate the general public of the PFBC wild trout classification system.
 - *PA's Best Fishing Waters program fully implemented on website with landing page and interactive maps. The WT and Class A classification of streams has been a topic at all Commission meetings in recent years as waters are designated via the Unassessed Waters program. Development of a fact sheet on the*

wild trout classification system has been discussed by staff but was not been completed during the term of the plan.

Issue 5: The cumulative effects of human development have been inadequately addressed in permitting actions.

Strategy:

- By June 2010 initiate discussions with natural resource management agencies, conservation organizations, municipalities and regulatory agencies to address the cumulative impacts of development and how these might be better addressed in future permit decisions.
 - *The 2012 Keystone Coldwater Conference (February 24-25, 2012) was very successful. The conference theme was “Responsible Land Use: Protecting Habitat and Native Species.” Keynote speakers emphasized the need for responsible land development in coldwater ecosystems. Conference participants were exposed to valuable take-home information identified as key elements described in the Issue 5.*
 - *Special Features article published in the PA Angler and Boater September/October 2012 edition – Protecting our Coldwater Resources*
 - *DES continues to disseminate information to our sister resource and regulatory agencies regarding the importance of coldwater protection through the use of instream construction restriction periods, easements, riparian buffer protection, instream habitat, and water quality protection for stocked trout and wild trout resources in the State and Federal permitting processes. The permitting process provides the PFBC with an opportunity to review and comment on projects that include transportation corridors, bridge replacements, residential subdevelopment, industrial land development, mineral extraction, linear utility development, and natural gas development.*
 - *The 2014 Keystone Coldwater Conference (February 21-22, 2014) theme was - Coldwater Resources: Current practices in conservation protection and restoration. Conference attendees included resource and regulatory agencies, industry representatives, municipalities, watershed organizations, and academia.*

Issue 6: Invasive species and pathogens such as didymo, round goby, zebra mussels, and VHS threaten our trout fisheries.

Strategies:

- By December 2010, review the Fish and Boat Code and the PFBC’s fishing regulations concerning introduction, propagation, and transportation of fish in Pennsylvania’s waters and determine what changes are needed to help prevent the spread of invasive species and pathogens.
 - *Ongoing – Incomplete*

- By December 2010, implement effective outreach and education programs identified in the Aquatic Invasive Species Management Plan.
 - *Ongoing. Staff coordinated with local organizations and other state agencies to post informational signage at waters recently infected by didymo (Delaware River, Dyberry Creek, Youghiogheny River, and Pine Creek). Cooperated with PA Sea Grant on development/production of didymo-specific posters*
- Fully implement the agency's new biosecurity policy in 2010.
 - *Ongoing with further expansion as funding allows.*

Issue 7: Maintaining free public access to Pennsylvania's wild trout fisheries is important to provide trout angling opportunities.

Strategies:

- Improve public access to at least 20 wild trout streams between 2010 and 2014. Access improvements may include, but are not limited to improved parking areas, long-term access easements, and purchase of riparian lands. Highest priority will be placed on streams with high quality fisheries that can support the potential increased use resulting from improved access.
 - *To date, a total of seven permanent fishing and boating access and conservation easements have been acquired on two wild trout streams. These easements provide approximately 4.14 miles of public fishing access.*
- Whenever possible, on wild trout streams with PFBC assisted habitat improvement projects, assure public access as well as parking and signage that encourages use of the site and provides information on the benefits of the project.
 - *To date, a total of eleven agreements (10 year) have been signed for public access associated with DHM projects on WT waters (5.87 miles)*
- By December 2010, develop a landowner relations program as described in the Agency Strategic Plan to better acknowledge and show appreciation to private landowners who allow habitat improvement work and public access on their land.
 - *Complete – We provide property owners with a PA Angler and Boater subscription for one year, and posters for the property.*
- By 2014 investigate the potential to develop a dedicated source of funding to be used to improve access on public waters throughout the Commonwealth.
 - *The Commission recently partnered with the Western Pennsylvania Conservancy to submit an application to the Pennsylvania Department of Environmental Protection's Growing Greener grant program. If the application is successful, it will*

provide funding for public fishing and boating access and conservation easements on waters throughout the Commonwealth for several years.

- *Commission staff time was included in a TNC Growing Greener project proposal on HQ and EV streams that are impaired in SC PA. This proposal was not funded.*

Issue 8: The expansion of wild trout populations is impeded in streams where habitat has been identified as the primary limiting factor. Furthermore better knowledge of the effects of habitat manipulations on wild trout populations is needed.

Strategies

- Assess watershed conditions to identify habitat limiting factors on wild trout streams. Apply a watershed-level approach, when possible, to all large-scale habitat enhancement projects.
 - *DHM & DFM established a Plan Narrative format and completed four plans on wild trout streams. Work has been initiated on numerous projects*
- By January 2011, develop an objective prioritization process for selection of habitat enhancement projects on wild trout streams.
 - *Completed – DFM & DHM have established a Priority Water selection approach that will be re-evaluated on a yearly basis.*
- Conduct at least 80 instream and/or riparian habitat enhancement projects on wild trout streams between 2010 and 2014.
 - *Completed: 119 projects completed by the DHM as of September 30, 2014.*
- Seek additional grant funding for habitat work on wild trout streams, e.g. funding available through the Eastern Brook Trout Joint Venture (EBTJV).
 - *DHM continues to work with several entities to develop funding for staff reimbursement as well as project implementation (Including, but not limited to: EBTJV, The Nature Conservancy, DEP, Loyalhanna Watershed project, NC Habitat project, Perkiomen Watershed project, Western PA Conservancy, Wildlands Conservancy).*
- Partner with 20 different conservation groups, schools, and government agencies on habitat enhancement projects on wild trout streams between 2010 and 2014.
 - *Complete: DHM has partnered with at least 80 groups*
- Provide technical assistance to project partners in identifying and prioritizing projects to most effectively assist the PFBC in enhancing and restoring habitat in wild trout streams.

- *Ongoing*
- Provide 10 workshops or presentations that include hands-on training for project partners to increase their ability to implement high quality projects on wild trout streams between 2010 and 2014.
 - *Completed: Twenty-two workshops/presentations completed as of September 30, 2014.*
- Partner with conservation groups and other agencies to obtain outside funding to help cover the cost of 15 habitat enhancement projects on wild trout streams between 2010 and 2014.
 - *Completed: partnered with 89 partners on 68 projects as of September 30, 2014.*
- By January 2011, develop a comprehensive monitoring program to evaluate the response of both wild trout populations and physical habitat conditions to the various types of habitat treatments conducted on wild trout streams.
 - *Ongoing. A variety of monitoring approaches for physical habitat and fish populations has been employed on stream habitat projects.*

Issue 9: Through their ability to impede movement, trap sediment and increase water temperatures barriers remain a deterrent to fully functional wild trout streams.

Strategies:

- When deemed biologically appropriate, remove barriers and/or improve fish passage on five wild trout streams between 2010 and 2014.
 - *Between 2010 and 2014 staff collaborated with partner organizations to remove 21 dams on 16 wild trout waters across PA*
- By December 2014, develop routine maintenance schedules for all projects completed on wild trout streams between 2010 and 2014.
 - *Project cooperators are responsible, by agreement, to provide routine project maintenance for 10 years by agreement. Staff have worked with partners, as necessary, to address maintenance*
- Support research on movement of wild trout populations in Pennsylvania streams.
 - *Through Sinnemahoning Creek Watershed Restoration Grant, funded the Pennsylvania Cooperative Fish & Wildlife Research Unit at Penn State University on study of movement of wild Brook and Brown Trout. Research has been completed and published in 2013 in Transactions of the American Fisheries Society 142 (5): 1167-1178*

Issue 10: Impairment of the natural flow regime through water withdrawals and reservoir operations threatens the quality of wild trout waters.

Strategies:

- Encourage DEP to implement the Pennsylvania Instream Flow Model and other scientifically valid instream flow protection measures in all DEP regions by December 2010
 - *Complete*

- By January 2013, develop additional instream flow methods and criteria for statewide application in concert with DEP, other government agencies, and non-governmental organizations such as The Nature Conservancy.
 - *Worked with DEP, DRBC, SRBC, and TNC to develop new instream flow methods in the three major drainage basins in PA*
 - *Initiated discussions with DEP Deputy Secretary regarding the need for a revised statewide low flow protection policy*

- Continue to work closely with the New York Department of Environmental Conservation (NYDEC) and the PA and NY parties to the 1954 U. S Supreme Court Decree to achieve greatly improved operating rules to protect and improve the upper Delaware River trout fishery.
 - *Provided protocol for emergency thermal release that was used in mid-July 2013 to request emergency thermal relief to protect trout in the Delaware River mainstem from water temperatures >75°.*
 - *Initiated upper Delaware River temperature study in 2013; ongoing*
 - *Reviewed NY state proposal for extraordinary needs thermal relief and provided counterproposal on March 24, 2014*

- Work closely with the Pennsylvania Department of Conservation and Natural Resources, DEP, Utilities, and the U. S. Army Corps of Engineers to improve tailwater fisheries through improved flow management in tailwater fisheries across the state (e.g. F. E. Walter Reservoir on the Lehigh River, Blue Marsh Reservoir on Tulpehocken Creek, and Lackawaxen River below Lake Wallenpaupack).
 - *Tailwater Work Group formed and prioritization established for future tailwater management efforts (Upper Delaware River, FE Walter, Lackawaxen, Raystown Dam, Quemahoning Creek, and also working on Youghiogheny. Work is ongoing.*
 - *Have met with F. E. Walter stakeholders to produce a Recreational Release Plan each year that attempts incremental improvements in whitewater and river augmentation releases.*
 - *Reviewed Lackawaxen Thermal Regulation Program each year with PPL (now Talon Energy).*

Issue 11: Criteria for the inclusion of waters into special regulation programs for trout fisheries are lacking and the degree to which special regulation programs are meeting management objectives needs to be fully evaluated.

Strategies

- By 2011, develop specific criteria that trout waters must meet in order to be included in a special regulation program. At a minimum these objectives should include or consider the following:
 - Whether special regulations are necessary and supported biologically, e.g., to improve the quality of the fishery or to protect recovering fish populations.
 - Whether harvest or tackle types limiting factors to the potential quality of the fishery.
 - An evaluation of the potential impact on angler participation if angling regulation changes are proposed or enacted.
 - Whether the regulation exclude segments of the angling public, especially children.
 - Whether different regulations for children can be considered to encourage angling by this segment of the population.
 - What are angler opinions regarding the regulation change. This could include posting a notice of proposed new areas one year prior to implementation of the regulations in order to receive public comments.
 - What are the implications of public versus private ownership to the proposed regulation?
 - *Final draft submitted to Deputy Director. Moved task to new plan for completion.*

- By 2011, develop a sampling strategy to determine if waters currently managed under special regulations have met the developed set of specific criteria in order to remain in a special regulation program. This should include specific biological and social objectives.
 - *Not completed. Determined that all waters currently in special reg programs will be grandfathered.*

- By 2011, develop and implement a study to evaluate the use of bait and tackle restrictions (artificial lures and flies) on special regulation areas. Examinations would include areas managed under catch-and-release regulations (Catch-and-Release, Catch-and-Release Fly-Fishing Only, and Catch-and-Release All Tackle) and areas where some harvest is permitted under elevated minimum length limits and reduced creel limits, such as All Tackle Trophy Trout and Trophy Trout areas.
 - *It was determined not to pursue an evaluation of these specific regulations. Instead, a miscellaneous special regulation (harvest slot limit) was approved for Penns Creek (effective Jan 1, 2014). Evaluation of the new regulations began with sampling prior to initiation of the regulation 2013 with a creel survey and sampling of treatment and control sites in 2012-2015. Monitoring will continue on Penns Creek through 2019.*

- By 2011, complete an assessment of the Wild Brook Trout Enhancement program and determine if the program should be continued, modified, or

eliminated.

- *Completed study results were presented to the PFBC Board of Commissioners and PA Council of Trout Unlimited. The manuscript of this research was published in the North American Journal of Fisheries Management. The wild Brook Trout Enhancement regulation program was discontinued at the July 2015 commission meeting. A subset of the streams that was included in this regulation program in the upper Kettle Creek drainage will be proposed for addition to the Catch and Release All Tackle regulation program at the January 2016 Commission meeting. This task will then be complete.*

MANAGEMENT OF STREAMS WITH TROUT FISHERIES MAINTAINED BY STOCKING

Strategies

The following strategies address the highest priority threats and opportunities to the provision of high quality trout angling opportunities on the Commonwealth's streams with no wild trout reproduction. These priorities are designed to protect, conserve and enhance water quality in streams with no wild trout reproduction while providing enhanced fishing opportunities for the anglers of the Commonwealth. General needs already identified above related to protection of these waters, such as water quality and water quantity protection, and the control of aquatic invasive species, will not be repeated here.

Issue 12: New and innovative technology is needed to ensure protection of aquatic resources downstream of PFBC trout hatcheries.

Strategies:

- Annually evaluate the effect of hatchery upgrades and operational changes on effluent water quality and production efficiency.
 - *Ongoing*
- Continue to evaluate current hatchery infrastructure in order to prioritize future hatchery renovations. Implement operational changes with the goal of increasing production efficiency as measured by cost per fish raised.
 - *Infrastructure upgrades accomplished through F-74-D grants as funding allows. Five trout effluent management upgrades are complete and Reynoldsdale SFH upgrades are scheduled to be complete in the spring of 2016.*

Issue 13: PFBC hatchery water quality and quantity will affect future operational capability.

Strategies:

- By 2013 complete development of a database to track water quantity and quality at each hatchery in order to more effectively comply with environmental regulations and plan future production capacity.
 - *As of October 2015, a Water Quality database application has been created and is in the testing phase*
- Monitor hatchery influent and effluent water quality and flows using updated measuring equipment that will allow for more accurate monitoring of hatchery operations.
 - *Complete*
- Hydrologic studies of the water sources for the Reynoldsdale, Benner Spring, Bellefonte State and Pleasant Gap Fish Hatcheries have been completed. Studies of the water sources at the four remaining trout hatcheries will be completed by 2014.
 - *Hydrologic studies for Corry, Pleasant Mount, Tionesta, Fairview, Linesville, Oswayo, and Union City SFH's have been completed*

Issue 14: Cooperative Nurseries provide considerable support to the PFBC's ATW program. Additional PFBC support of this program is warranted.

Strategies:

- Annually review the Cooperative Nursery program with an emphasis on optimizing production capacity at individual facilities and adding additional nurseries. – Complete
 - *Ongoing. A Cooperative Nursery workgroup has been formed.*
- Evaluate production capacity at existing facilities and investigate all requests to establish new nurseries.
 - *Most nurseries are operating at peak capacity or at a capacity where they feel comfortable, based on volunteer manpower. Two nurseries are in the early stages of raceway expansion projects. Requests for new nurseries are being processed as staff time permits and as requested by prospective sponsors.*
 - *By December 2016, the CNU will perform an analysis of existing cooperative nurseries and recommended production levels as stated in the Strategic Plan.*
 - *The CNU has investigated all requests that have been made, to date, to establish new nurseries.*
- Assess wastewater handling practices at each nursery. Provide technical assistance and increased funding to improve nursery effluent water quality.
 - *All sponsors and nursery managers have been notified of the CNU's increased emphasis on improving waste management handling procedures at the nurseries. During routine inspections and at regional seminars staff has provided guidance and training on improved methods. Sponsors are aware of the increased grant*

Issue 15: The cost to operate the stocked trout program is significant and as such, the PFBC must investigate ways to optimize hatchery operations and program efficiency.

Strategies:

- Limit trout production cost increases to the greatest extent feasible.
 - Utilize the computerized trout production program to improve the efficiency of fish feed use.
 - *Complete. Program is in use at all trout hatcheries except RSFH which will transition to program after renovations*
 - By 2014, purchase mechanical egg pickers and fish pumps to reduce labor costs in incubating trout eggs and moving fish between rearing units.
 - *Being done as funding allows. Two hatcheries have been equipped with pumps and several with pickers*
 - By 2014, investigate the use of technological advancements as well as part-time employees instead of full-time staff to further limit increases in overall costs.
 - *Hatchery staffing has been reduced*
- Beginning in the 2011-12 fiscal year, conduct a study in cooperation with the USFWS Northeast Fishery Center to genetically identify current brood strains used at PFBC hatcheries. Results will be used to plan future production with available brood lines and/or introducing new strains into the trout production system as part of a comprehensive broodstock management plan.
 - *Eggs are being received from USFWS brood program*
- Optimize the trout distribution system in order to decrease the current cost of trout production.
 - By January 2010, analyze post-stocking data to determine the percentage of trips made with distribution trucks at full capacity and reconfigure stocking assignments and schedules to maximize full capacity truck trips.
 - *Complete*
 - By January 2010, contract with the Department of Supply Chain and Information Systems at Penn State to conduct an analysis of our distribution assignments and travel routes. Stocking assignments, schedules, and travel routes will be revised pending results of this study.
 - *Study complete. Basic findings of the study were implemented. Stocking schedule revisions were based on CDL mileage and hours of operation regulations.*
- By January 2011, develop stocking program modifications based on the 2008 stocked trout cost study. Possible options include:

- Eliminate stream sections from the stocking program that have negative cost/benefit ratios.
 - *25 stream sections have been removed from the stocking list for a variety of reasons since 2010, but four sections have been added and stocking extensions were made on five stream sections with a better likelihood of high angler use.*
- Evaluate the cost/benefit of the fall and early-winter stocked trout program and adjust the program if not cost effective.
 - *Complete - 55 waters have been removed from the fall stocking program due to poor angler use. DFM will continue to evaluate the appropriateness of this and all other programs on an ongoing basis.*
- To reduce transportation costs and concentrate stocking during the period of highest angler use, concentrate inseason stocking during the first three weeks of the spring inseason stocking period.
 - *Complete*
- Reduce the number of stream sections that receive inseason stockings based on low inseason use or on the proximity of other inseason stocked trout stream sections DFM
 - *Complete – four sections have been removed from inseason stocking. We’ve consolidated inseason stockings from two plants to one plant on eight stream sections.*

Issue 16: Maintaining free public access to Pennsylvania’s stocked trout fisheries is important to maintain Pennsylvania’s angling heritage.

Strategies:

- Improve public access to at least 10 stocked streams with no wild trout reproduction between 2010 and 2014. Access improvements may include, but are not limited to improved parking areas, long-term access easements, and purchase of riparian lands.
 - Work with PFBC access coordinators to create greater public awareness of the need to secure public access; be proactive in pursuing landowner easements along streams with no wild trout reproduction.
 - *To date, a total of 38 fishing and boat access and conservation easements have been obtained along ten stocked trout streams. These easements provide approximately 24.14 miles of permanent public fishing access along the stocked trout streams. As part of the easement acquisition process, the Commission requires that the property provide some way for anglers to get from the nearest road to the stream. In some cases, this has resulted in the development of a parking area and a foot trail that leads from the parking area to the stream. All easements are marked with signs that identify them as a public fishing area*

- Whenever possible, on stocked trout streams with PFBC assisted habitat improvement projects, assure public access as well as parking and signage that encourages use of the site and provides information on the benefits of the project.
 - *New access agreement developed that requires provision of public access on properties on which habitat projects have been completed.*

- By December 2010, develop a program to better acknowledge and show appreciation to private landowners who allow habitat improvement work and public access on their land.
 - *Complete; see issue 7 above.*

Issue 17: Success of the stocked trout program requires that a significant proportion of the trout that are stocked into a water are available to anglers to catch when the season is opened. There have been problems identified with the residency of stocked trout in some waters.

Strategies:

- By December 2014, assess 100 approved trout waters where residency problems are suspected.
 - *Complete*

- By April 2011, report on sampling and analysis conducted to determine total and dissolved aluminum concentrations in streams that have exhibited consistent trout residency problems to determine if this factor is playing a role in trout residency in Pennsylvania streams.
 - *Complete*

- By April 2011, identify the minimum level of trout residency that a stream section must achieve for continued preseason stocking.
 - *Complete. The DFM has identified 40% residency as the minimum acceptable level of preseason trout residency.*

Issue 18: Recent generations are increasingly disconnected from the Commonwealth's aquatic resources.

Strategies:

- By December 2012, investigate the feasibility and social acceptance of developing new trout fishing opportunities for individuals, families and children.
 - *Education staff have conducted 38 fly fishing programs, reaching 483 participants during the period. Most of these programs include assistance from local Trout Unlimited Chapters, and or Federation of Fly Fishers members/casting instructors.*

- *Education staff have presented no less than 8 promotional presentations on fly fishing at teacher conferences, in-service, and other professional gatherings. The purpose of the presentations is to show teachers (primarily Phys Ed) how fly fishing/casting can be introduced in the formal education setting, and to introduce them to PFBC training and resources.*
 - *Staff conducted five basic fly fishing skills workshops for PFBC and DCNR staff since Oct 2011;*
 - *Provided program materials to Project Healing Waters, Women in the Outdoors and Casting for Recovery.*
 - *Provided fishing license exemptions for approximately 100 educators delivering angler education programs.*
 - *Fly fishing equipment has been purchased annually, thanks to substantial discounts from manufacturers, retailers, and distributors. This equipment was used for staff-led programs, and equipment loans*
 - *In partnership with the Pennsylvania Institute for Conservation Education, staff conducted various sessions for the “PA Bookies” Field School which annually reached up to 20 students age 14-17 year*
 - *Staff developed and placed radio PSAs and print advertisements for regional and regular trout opening days.*
 - *In partnership with National Trout Unlimited, staff coordinated a Trout Fishing Spring Training presentation on the evening of the January 2013 Commission Meeting with 72 people in attendance.*
 - *Completed the development of “PA’s Best Fishing Waters” website.*
 - *Instituted Keystone Select Stocked Trout Program, in which 3,200 age 14-20”+ fish will be stocked into 8 selected DHALO waters distributed statewide.*
- *Continue to work with Trout Unlimited to expand the Trout in the Classroom program.*
 - *Ongoing. 289 classrooms are participating in TIC in the 2015-2016 school year. TIC teachers reached an average of 21,000 students each year, and provided nearly 7,000 hours of instruction/learning experiences related to trout, trout fishing, and coldwater conservation.*
- *Investigate the feasibility of developing a new angler mentoring program.*
 - *PFBC is involved in the Angler’s Legacy program, a mentoring program. To date, PA has the most sign-ups for this program of all other states involved.*
 - *Family Trout Fishing Programs based on the success of the May 2012 Family Fishing Festivals.*

- *Developed and conducted the first Mentored Youth Trout Fishing Day on March 23, 2013 at 12 select waters in the early regional trout opening counties. Conducted follow-up survey with program participants and prepared evaluation report. Program expanded to include Traditional Opening Day region in 2014 and the program was expanded statewide in 2015.*

Issue 19: Fingerling trout stocking may provide an opportunity to provide fisheries of high quality at lower costs than stocking with adult trout in some circumstances. Our knowledge of the success of fingerling trout stocking programs in streams to meet management objectives is inadequate.

Strategies:

- By December 2010, develop a set of minimum criteria that a must be attained for the continuation of fingerling stocking in a water.
 - *Complete. The DFM has determined the 25% annual survival is the minimum requirement to continue stocking fingerling trout. This value represents the cost equilibrium with stocking adult trout.*
- By December 2014, evaluate all current fingerling stocking efforts and provide recommendations on the continuation and possible expansion/reduction of these programs.
 - *30 waters have been evaluated. 19 have been removed from the fingerling stocking program due to low fingerling survival. Additional work is planned on six waters.*
- By December 2014, conduct chemical water quality analyses and habitat analyses on additional waters with potential to be managed using stocked fingerlings. For those waters that meet adequate year-round water temperatures, physical habitat, and/or biological characteristics, attempt to establish new fingerling stocked fisheries.
 - *Six waters were added to the fingerling stocking program and are currently being evaluated. Four were added in 2014.*

LAKES MANAGED FOR TROUT

Strategies

The following strategies are designed to address the highest priority threats and opportunities to the Commonwealth's one and two-story lakes as they pertain to the management of trout.

Issue 20: Maintaining free public access to Pennsylvania's lakes is important to maintain Pennsylvania's angling heritage.

Strategy:

- Improve public access to at least 10 lakes between 2010 and 2014. Access improvements may include, but are not limited to improved parking areas, long-term access easements, and purchase of riparian lands.
 - *The Commission improved access at seven lakes that are managed for trout. The access improvements included the construction of boat launch facilities and parking areas for boaters and anglers*
- Work with PFBC access coordinators to create greater public awareness of the need to secure public access; be proactive in pursuing landowner easements along and access to privately owned lakes.
 - *Incomplete*
- By December 2010, develop a program to better acknowledge and show appreciation to private landowners who allow habitat improvement work and public access on their land.
 - *Complete – We provide property owners with a PA Angler and Boater subscription for one year, and posters for the property*
- By 2014 investigate the potential to develop a dedicated source of funding to be used to improve access on public waters throughout the Commonwealth.
 - *Incomplete*

Issue 21: The cost to operate the stocked trout program on lakes is significant and as such the benefits of providing recreational angling opportunities with stocked trout should, at a minimum, equal the costs.

Strategies:

- By January 2011 develop stocking program modifications on trout stocked lakes based on the 2008 stocked trout cost study. Possible options include:
 - Eliminate lakes from the stocking program that have negative cost/benefit ratios.
 - *Complete; lakes are determined to be high efficiency programs and only two were eliminated from the stocking program (other*

than those affected by drawdowns for dam repair). Efficiency work focused on streams

- Stock trout in waters that receive better angler use, or in the cases of new waters, those that are anticipated to receive better usage.
 - *The evaluation that will allow poor performing stocked trout waters to be removed from the stocking program has been completed. The PFBC now has a defensible approach for recommending and removing waters from the stocked trout program and evaluating the addition of new waters. We have determined that there is no current need to reduce the number of lakes being stocked as a result of this analysis. While the methodology is complete, implementation is not complete.*
- To reduce transportation costs and concentrate stocking during the period of highest angler use, concentrate inseason stocking during the first three weeks of the spring inseason stocking period.
 - *Complete*
- Reduce the number of lakes that receive inseason stockings based on low inseason use or on the proximity of other inseason stocked trout waters.
 - *Complete*
- By June 2014, conduct angler surveys to provide a statewide assessment of spring angler use, angler catch, angler opinions, and an economic contribution of trout angling on trout stocked lakes in order to make informed decisions regarding future trout stocking allocations in lakes.
 - *Not completed – No funding available to complete this work. The development of a study design for this task is included in the new trout plan but not the implementation.*

Issue 22: The Early Season Trout Stocked Waters program is the biggest obstacle to stocking more streams closer to opening day and thus minimizing trout residency problems. Nevertheless, the program is very popular among trout anglers and among anglers who fish for other species such as perch and crappie.

Strategy:

By January 2010, provide an analysis and recommendations for the possible elimination of the Early Season Trout –Stocked Waters program and moving the waters in this program into either the Approved Trout Waters Open to Year Round Fishing program or the Approved Trout Waters program.

- *Complete. The Early Season-Trout Stocked Waters program has been eliminated.*

TROUT MANAGEMENT IN LAKE ERIE

Strategies

The following strategies are designed to address the highest priority threats and opportunities to Lake Erie as they pertain to the management of trout.

Issue 23: The PFBC does not have a long term source of disease free brown trout eggs or an isolated facility to raise fingerling Brown Trout for stocking Lake Erie. Addressing these issues is critical to the development of an expanded Lake Erie Brown Trout fishery within the guidelines of the Great Lake Fish Health Advisory Committee.

Strategies:

- By 2013, develop an in-house source of disease free Brown Trout eggs.
 - *The PFBC continues to receive eggs from NYDEC but has initiated a disease from broodstock effort at the Reynoldsdale SFH*
- By 2013, develop an isolated rearing facility capable of raising 75,000 Brown Trout fingerlings for stocking into the waters of Lake Erie.
 - *Due to insufficient funding an isolated rearing facility was not completed. The PFBC will continue to rear approximately 40,000 yearlings at Linesville SFH and provide Erie coops with approximately 40,000 fingerling Brown Trout for the Lake Erie program. This is a cost effective approach to reach the goal*
- Strictly adhere to the Great Lakes Fish Disease Control Policy and Model Program supplied through the Great Lakes Fish Health Committee.
 - *The PFBC is following the GLFH Committee guidelines.*

Issue 24: Maintaining public access to Pennsylvania's portion of Lake Erie is important to maintain Pennsylvania's angling heritage.

Strategy:

- Improve public access to Lake Erie and its tributaries. Access improvements may include, but are not limited to improved parking areas, long-term access easements, and purchase of riparian lands.
 - Work with PFBC access coordinators to create greater public awareness of the need to secure public access; be proactive in pursuing landowner easements along and access to privately-owned tributary corridors.
 - *The Commission has acquired 31 fishing and boating access and conservation easements along the Lake Erie tributaries.*
 - *The Commission has helped fund the acquisition of 12 properties along Lake Erie tributaries which resulted in the Commission being granted fishing and boating access and conservation easements on those properties.*
 - *The Commission funded nine development projects that improved public access along Lake Erie and the tributary streams.*
 - *The total amount of stream frontage obtained through the acquisitions and easements is 19.70 miles.*

- *The Commission acquired one fishing and boating access and conservation easement along Lake Erie and helped fund the construction of a 300 foot long ADA accessible fishing pier that provides access to Presque Isle Bay*
 - *In 2010, the Commission developed a Rating Criteria system that increased the amount of compensation that could be offered to landowners that are interested in fishing and boating access and conservation easements to ensure that the Commission is offering fair market value for the easements.*
- By December 2010, develop a program to better acknowledge and show appreciation to private landowners who allow habitat improvement work and public access on their land.
 - *Complete – see Issue 7 above.*

Issue 25: Invasive species and disease pathogens such as didymo, round goby, zebra mussels, and VHS threaten our trout fisheries.

Strategies:

- Continue to work with the Great Lakes Fishery Commission to ensure the effective suppression of the sea lamprey population in Lake Erie to allow for the restoration of lake trout and improved survival of stocked salmonids.
 - *GLRI grant application was submitted to evaluate all blockages in Lake Erie basin and develop a prioritization process for barrier removal based on improved passage of Steelhead Trout, protection against invasive species, and protection of rare species. Funding was not approved by the USFWS.*
- By December 2010, implement effective outreach and education priorities identified in the Aquatic Invasive Species
 - *PA Sea Grant has been the lead on this item since it involves the statewide AIS management plan but PFBC contributed to the effort by devoting a full page (page 43) in the 2013 PA Fishing Summary which covers exposure/access of the online AIS action plans. Additionally, PFBC is in the process of purchasing 10,000 Asian carp ID cards (coordinated for production by PA Sea Grant) for primary distribution at educational events and sport shows in 2013. Also, in conjunction with the new amphibian and reptile book in development, a section of the book will be devoted to AIS identification and management practices.*
- Fully implement the agency's new biosecurity policy in 2010.
 - *Ongoing with further expansion as budgets allow.*
- Work with federal agencies, neighboring states, and other Pennsylvania state agencies to establish regulations to help reduce the introduction of new AIS and control the spread of established AIS in the Great Lakes.
 - *Ongoing*