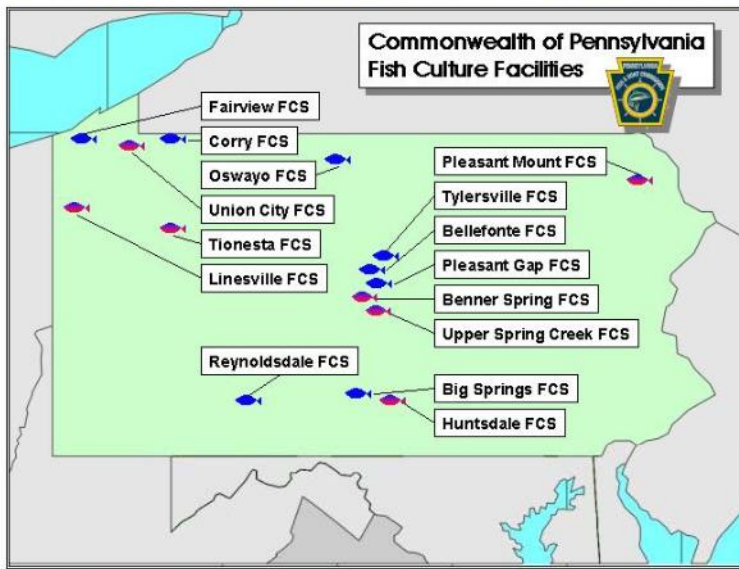


EXECUTIVE SUMMARY REPORT

JUNE 2002



Pennsylvania Commonwealth Fish Culture Station



EVALUATION

Prepared by



5201 South Sixth Street Road
Springfield, IL 62703-5143
(217) 585-8300
FAX (217) 585-1890

REPORT TABLE OF CONTENTS

Page

About This Document.....	1
Preface.....	1
Project Description & Study.....	2
State Hatchery System Production and Stocking Overview.....	3
System Infrastructure Overview.....	5
Coldwater Fish Production System Overview.....	5
Cool/Warmwater Fish Production System Overview.....	7
Future Fish Production and Stocking Summary.....	7
Facility Operation Cost & Production Cost Summary.....	9
Hatchery Wastewater and Effluent Analysis.....	10
Biological Assessments.....	12
Privatization Analysis.....	14
Recommendations, Improvements and Opinions of Probable Cost.....	14
Implementation Plan.....	22
Implementation Plan Benefits.....	23
Action Needed by PFBC.....	24
Acknowledgments.....	24

List of Tables

- Table 1. PFBC Fish Culture Stations
- Table 2. PFBC Fish Culture Station Infrastructure Summary
- Table 3. PFBC Cool/Warmwater 2000-2001 Production
- Table 4. Relative Priority of Importance for Cool/Warmwater Fish Production and Fish Trading
- Table 5. A Comparison of DMR Exceedences from 2000 through 2001 and Impairment of Receiving Streams Identified by DEP Bioassessments
- Table 6. Wastewater Treatment Tiers In Place and Proposed at PFBC Fish Culture Stations
- Table 7. Opinions of Probable Cost for PFBC Fish Culture Station Improvements/Renovation

List of Figures

- Figure 1. PFBC Fish Culture Station Locations
- Figure 2. Total Coldwater Production for F.Y. 2000-2001 Compared to the Maximum and Minimum Values from 1996-2001
- Figure 3. Average Annual Expenditures for All PFBC Fish Culture Stations for F.Y. 2000-2001
- Figure 4. Tier 1 & Tier 2 Existing PFBC Effluent Treatment
- Figure 5. Proposed Tier 3, 4 & 5 Effluent Treatment Enhancement
- Figure 6. Typical Fish Hatchery Improvement Project Flow Chart

Improvement Drawings

I. INTRODUCTION

About This Document

In March of 2001, the Pennsylvania Fish & Boat Commission (PFBC) contracted FishPro/Cochran & Wilken, Inc., Consulting Engineers and Scientists of Springfield, IL to complete a Commonwealth Cold and Cool/Warmwater Fish Culture System Evaluation. This Executive Summary Report provides a brief overview of the study, and summary of findings and recommendations contained within the **Pennsylvania Fish & Boat Commission, Commonwealth of Pennsylvania Fish Culture Station Evaluation**. This Executive Summary Report is intended to highlight the findings contained within the report; however, the reader is strongly encouraged to review the main document for clarification of details.

It is recommended that the PFBC use this document and its supporting information as a framework and guideline to direct the capital improvements to the Pennsylvania Fish Culture Station system. This is a planning tool and is not intended to be used as a substitute for Construction Phase Documents, which provide detailed drawings, specifications, and opinions of probable cost, and are developed as a component of the Planning and Design Phase of each project. Construction documents must be developed to specifically define construction details, as-built conditions and to be in full compliance with all applicable Commonwealth and local codes, permitting requirements, and Pennsylvania Department of General Services (DGS) and PFBC guidelines.

Preface

Recreational fishing in the United States has grown to become the most popular recreational activity in the country, second only to swimming. According to a 1996 National Survey conducted by the U.S. Department of the Interior, Fish and Wildlife Service, and the U.S. Department of Commerce, Bureau of the Census, 35.2 million U.S. residents 16 years of age and older engaged in fishing activities throughout the country. Of the 35.2 million, 1.35 million residents and nonresidents enjoyed fishing activities throughout the Commonwealth of Pennsylvania. Approximately 1.1 million (81%) of those fishing the state were Pennsylvania residents, while 260,000 (19%) were nonresidents. Those fishing the Commonwealth averaged 15.6 days per angler and almost 21.1 million total fishing days.

The popularity of recreational fishing has increased the demand for goods and services by an estimated 37 percent nationwide between 1991 and 1996. In Pennsylvania alone, anglers spent approximately \$649 million on fishing related items that included \$296 million on trip related expenditures, \$124 million on equipment, and \$229 million in other expenses such as magazines, club memberships and tours. These expenditures translated to over 16,677 Pennsylvania jobs in 1996 (American Sportfishing Association, 1996). Therefore, it is very important to protect, manage, and enhance the fisheries resources throughout Pennsylvania.

Fisheries management programs utilize fish stocking from Pennsylvania Fish & Boat Commission (PFBC) operated fish culture stations as one of several essential tools to provide fisheries resource management throughout the Commonwealth. The major objectives of public fish culture stations include:

- Production of fingerling fish for stocking new waters open to public fishing and fish Co-ops
- Supplementation of existing fish populations in public waters where natural recruitment is low
- Restoration of populations following fish kills
- Production of selected predatory sport fishes in order to control over-abundant forage species and provide additional recreational opportunities
- Restoration of various fish populations where human-influenced factors caused declines in fish abundance

These produced fish must meet very specific requirements including species, numbers, size, genetic integrity, disease-free status, and proper timing for stocking. Stocking requires significant knowledge of Commonwealth aquatic resources and a high degree of coordination between fish culturists and fisheries management biologists to successfully raise, transport and stock high-quality, healthy fish.

For more than one hundred years, Game and Fish agencies across the country have successfully integrated fish stocking requirements with the operation of public fish hatcheries. All fifty states and the Federal government operate public hatcheries that are designed and operated to provide a highly flexible, but also consistent, wide variety of fishes.

Project Description & Study

The **Commonwealth of Pennsylvania Fish Culture Station Evaluation** consisted of a review and analysis of identified major problems and potential solutions at fifteen (15) PFBC fish culture stations. The areas of critical review included water supply and treatment, effluent management, supplemental dissolved oxygen management of the aquaculture water supplies, rearing unit improvements, rearing unit expansion, general hatchery operations, and a variety of selected infrastructure improvements including expansion potential. The fish production program was evaluated utilizing historical and current (2000-2001) production numbers and projected future requirements. Potential solutions and possible options to the hatchery infrastructure problems and deficiencies were also provided. Construction cost opinions and projected time frame requirements for implementation were included. Operational constraints associated with effluent treatment systems and water supplies were reviewed.

The project scope, as specified in the contract, focused on items within each of the following broad tasks.

Task 1. Data Collection

- A. Orientation Meeting & Initial Transfer of Data, Drawings & Reports with Q&A session.
- B. Field Inspection of Facilities
- C. Facility Infrastructure Data Collection & Questionnaires
- D. Data Collection - Historical System-Wide Fish Production Data & Cost of Operation & Report / Document Review
- E. Privatization Questionnaire & Data Collection on Commercial Aquaculture Capabilities

Task 2. Review and Evaluation

- A. Review of Current & Future Fish Production Requirements
- B. Cost of Operations & Cost Efficiency Analysis and Review of Personnel Needs
- C. Facility Infrastructure Assessment, Documentation & Potential Repairs & Improvements (wastewater, infrastructure cost analysis)
- D. Facility Effluent Assessment & Potential Treatment & Costs. Discharge License Compliance Recommendations

Task 3. Findings

- A. Objective Presentation of Study Findings & Evaluation Criteria & Recommendations

Task 4. Alternatives / Options Analysis

- A. Options to Meet Current & Future Production Needs Efficiently & Effectively
- B. Opportunities to Utilize Private Sector Aquaculture in Meeting PFBC Fish Requirements.
- C. Options to Improve Operation, Effectiveness & Efficiency of the Statewide PFBC Hatchery System

Task 5. Management Recommendations

- A. Recommendations & Implementation Plan, Costs & Benefits (monetary, social, political, resource mgt.)

Task 6. Report Preparation / Review Coordination, Project Control & Staff / Legislative Presentations