



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Ecosystems and  
Oceans Science

Sciences des écosystèmes  
et des océans

## **Canadian Science Advisory Secretariat (CSAS)**

---

### **Research Document YYYY/XXX**

#### **Pacific Region**

### **Evaluation of management procedures for Pacific Herring (*Clupea pallasii*) in the Strait of Georgia and West Coast of Vancouver Island management areas of British Columbia**

A.J. Benson<sup>1</sup>, J.S. Cleary<sup>2</sup>, S.P. Cox<sup>3</sup>, and M.H. Grinnell<sup>2</sup>

<sup>1</sup>Landmark Fisheries Research  
Suite 301, 220 Brew Street  
Port Moody, British Columbia, V3H 0H6, Canada

<sup>2</sup>Pacific Biological Station  
Fisheries and Oceans Canada, 3190 Hammond Bay Road  
Nanaimo, British Columbia, V9T 6N7, Canada

<sup>3</sup>School of Resource and Environmental Management  
Simon Fraser University, 8888 University Drive  
Burnaby, British Columbia, V5A 1S6, Canada

### **Foreword**

This series documents the scientific basis for the evaluation of aquatic resources and ecosystems in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

Research documents are produced in the official language in which they are provided to the Secretariat.

### **Published by:**

Fisheries and Oceans Canada  
Canadian Science Advisory Secretariat  
200 Kent Street  
Ottawa ON K1A 0E6

<http://www.dfo-mpo.gc.ca/csas-sccs/>  
[csas-sccs@dfo-mpo.gc.ca](mailto:csas-sccs@dfo-mpo.gc.ca)



© Her Majesty the Queen in Right of Canada, YYYY  
ISSN 1919-5044

### **Correct citation for this publication:**

Benson, A.J., Cleary, J.S., Cox, S.P., Grinnell, M.H. Evaluation of management procedures for Pacific Herring (*Clupea pallasii*) in the Strait of Georgia and West Coast of Vancouver Island management areas of British Columbia. DFO Can. Sci. Advis. Sec. Res. Doc. YYYY/XXX. v + 1 p.

## TABLE OF CONTENTS

ABSTRACT . . . . .	iv
RÉSUMÉ . . . . .	v
1. INTRODUCTION . . . . .	1
1.1 CONTEXT . . . . .	1
1.2 KEY CHALLENGES . . . . .	1
1.3 WHY A MANAGEMENT-ORIENTED APPROACH? . . . . .	1
1.4 ROADMAP TO THE PAPER . . . . .	1

## **ABSTRACT**

[English abstract here.]

**[French title ici.]**

**RÉSUMÉ**

[French abstract ici.]

## **1. INTRODUCTION**

### **1.1 CONTEXT**

1. What is the exact decision that has to be made?
2. What is the timeframe for the decision?
3. Overview of perceived stock history, historically strong cohorts

### **1.2 KEY CHALLENGES**

What are the key challenges to decision-making posed by Pacific Herring:

1. Stock structure
2. Lack of maturity data
3. Uncertain growth estimates
4. Spawn index..

### **1.3 WHY A MANAGEMENT-ORIENTED APPROACH?**

1. Very brief statement of MSE process and why it is applied here
2. Evaluating management procedures by closed-loop simulation (general algorithm)
3. Include technical basis and participant interaction (record of TWG, and WG meetings)
4. Should refer back to Key Challenges

### **1.4 ROADMAP TO THE PAPER**

1. Guide to the reader about what is coming and how this paper organized
2. The “worry list” and what elements are dealt with here, which are deferred pending more data or time for OM model development or analysis, some (subjective) ranking of their relative importance