

Report of the
Stock Identification Methods
Working Group

By correspondence

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International Council for the Exploration of the Sea

Conseil International pour l'Exploration de la Mer

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1 MAIN TASKS AND PARTICIPANTS

At its 2000 Annual Science Conference, ICES resolved (C.Res. 2000/2G08) that a Working Group on Stock Identification Methods will meet by correspondence under the chairmanship of Dr. K. Friedland (USA), Dr. J. Waldman (USA), and Mr. S. Cadrin. The terms of reference indicated that the Working Group would continue to develop the Stock Identification Methodology and advise on future meetings of the Working Group (Appendix 1):

The Working Group participants in 2000-2001 were as follows, with addresses given in Appendix 2.

Participants

S. Cadrin (Co-Chair)	USA
K. Friedland (Co-Chair)	USA
J. Waldman (Co-Chair)	USA

2 STOCK IDENTIFICATION METHODOLOGY

The Working Group continued work on producing a publication on Stock Identification Methodology. All draft chapters were edited and authors for newly proposed chapters were solicited. The revised Table of Contents can be found in appendix 3, with notes on authorship and chapter status. Of the 37 chapters proposed for the volume, 15 have completed drafts that require only minor editorial revision, nine have drafts that require more extensive revision, five are in preparation, and authors need to be solicited for eight. Working group co-chairs prepared editorial comments on all draft chapters and will be distributing comments to authors along with plans for publication and a deadline for final drafts sometime in spring 2001. Co-chairs are also actively soliciting authors for the few remaining chapters.

3 FUTURE MEETING

The Working Group did not identify the need for a meeting at this time, but would recommend that the subject remain on the terms of reference for future consideration.

4 RECOMMENDATION

The Working Group recommends:

The Stock Identification Methods Working Group [SIMWG] (Co-Chairs Dr. K.D. Friedland, Dr. J. Waldman, and S. Cadrin, USA) work by correspondence in 2002 to:

- a) prepare a complete draft of the Stock Identification Methodology publication;
- b) advise on the need for future meetings of the SIMWG, and prepare appropriate Terms of Reference if required.

SIMWG should report on progress to the Living Resources Committee at the 2002 Annual Science Conference.

APPENDIX 1

TERMS OF REFERENCE

The **Stock Identification Methods Working Group** [SIMWG] (Co-Chairs Dr K.D. Friedland, Dr J. Waldman, and S. Cadrin, USA) will work by correspondence in 2001 to:

- a) continue development of the Stock Identification Methodology;
- b) advise on the need for future meetings of the SIMWG, and prepare appropriate Terms of Reference if required.

SIMWG will report by 31 May 2001 for the attention of the Living Resources Committee.

APPENDIX 2

LIST OF PARTICIPANTS

Name	Address	Phone	Fax	e-mail
Steve Cadrin	National marine Fisheries Service 166 Water Street Woods Hole, MA 02543 USA	508-495-2335	508-495-2393	scadrin@whsun1.wh.whoi.edu
Kevin Friedland	UMass/NOAA CMER Program Blaisdell House University of Massachusetts Amherst, MA 01003-0040 USA	413-545-2842	413-545-2304	friedlandk@forwild.umass.edu
John Waldman	Hudson River Foundation 40 West 20th Street Ninth Floor New York, NY 10011 USA	212-924-8290	212-924-8325	john@hudsonriver.org

APPENDIX 3

STOCK IDENTIFICATION METHODOLOGY (with notes on authorship and status of chapter drafts)

TABLE OF CONTENTS

INTRODUCTION

Overview (Friedland, Waldman and Cadrin; 1st draft in preparation)
Definition of Management Units, Stock Units, and Populations (Waldman; 1st draft in preparation)
Environmental versus Genetic Influence on Identification Characters (Swain; 1st draft 1997, minor revisions needed)

LIFE HISTORY TRAITS

Distribution of Life Stages (Hare and Begg; 1st draft 1997, moderate revision needed)
Growth and Reproductive Characteristics (Hare and Begg, 1st draft in preparation)
Life History Parameters in Fish Stock Identification (Begg and Hare; 1st draft 1998, minor revisions needed)

NATURAL MARKS-MORPHOLOGICAL ANALYSES

Outline Methods (Friedland; 1st draft 1993, moderate revision needed)
Landmark Methods (Cadrin; 1st draft 1997, moderate revision needed)
Texture Methods (Friedland; 1st draft 1994, minor revision needed)
Meristics (Waldman; 2nd draft 1996, minor revision needed)

NATURAL MARKS-ENVIRONMENTAL

Parasites as Biological Tags (MacKenzie and Abuanza; 2nd draft 1995, minor revision needed)
Elemental composition of body parts (Campana; 2nd draft 1998, minor revision needed)
Fatty Acid Profiles (Grahl-Nielsen; 1st draft 1997, moderate revision needed)

NATURAL MARKS-GENETIC ANALYSES

Chromosome Morphology (Phillips; 1st draft 1997, minor revisions needed)
Allozymes (Koljonen; 1st draft 1994, moderate revision needed)
Mitochondrial DNA (Magoulas; 1st draft 1995, minor revisions needed)
Nuclear DNA (Wirgin and Waldman; 2nd draft 1996, minor revisions needed)
Random Amplified Polymorphic DNA (RAPD) (Smith; 2nd draft 1995, minor revisions needed)
Amplified Length Polymorphic DNA (AFLP) (Liu; 1st draft 2000, minor revisions needed)

APPLIED MARKS

Finclipping (author to be solicited)
Pigments, Dyes, and Brands (Schroeder and Knudsen; 1st draft 1997, moderate revisions needed)
Internal and External Tags (author to be solicited)
Electronic Tags (Bain; 1st draft 1999, moderate revisions needed)
Otolith Thermal Marking (Volk, Schroeder, and Grim; 1st draft 1995, moderate revisions needed)

STOCK IDENTIFICATION DATA ANALYSIS

Exploratory Analyses of Stock Identification Data (Cadrin; 1st draft in preparation)
Statistical Algorithms for Stock Composition Analysis (Prager; 1st draft 1994, minor revisions needed)
Discriminant Function Analysis (author to be solicited)
Neural Networks in Classifying Biological Populations (Saila; 1st draft 1998, minor revisions needed)
Maximum Likelihood Estimators of Stock Composition (Brodziak; 1st draft 1995, minor revisions needed)
Non-parametric Methods of Estimating Classification Variability (author to be solicited)
Analysis of Outlines and Profiles (Ong and Saila; 1st draft 1995, moderate revisions needed)
Analysis of Tagging Data (author to be solicited)

APPLICATION OF STOCK IDENTIFICATION DATA IN RESOURCE MANAGEMENT

Application of Stock Identification Data in Resource Management (author to be solicited)
Stock Identification Data Requirements in Quantitative Assessments (Fabrizio; 1st draft 1998, minor revisions needed)
The Role of Stock Identification Data in Formulating Fishery Management Advice (Hammer and Zimmermann; 1st draft in preparation)
Identifying Fish Farm Escapees (author to be solicited)
Real Time Application of Stock Identification Information (author to be solicited)