

# **Committee of Age-Reading Experts**

## **2012 Committee Report**

Prepared for the Fifty-fourth Annual Meeting of the Technical Subcommittee of the  
Canada-USA Groundfish Committee

April 30 – May 1, 2013



Prepared by  
Sandra Rosenfield  
2011-2013 CARE Chairperson  
Washington Department of Fish and Wildlife  
Fish Ageing Unit  
Natural Resources Building  
600 Capitol Way  
Olympia, Washington  
98501

## **CARE 2012 Report to the Technical Subcommittee Of the Canada-USA Groundfish Committee**

### **A.CARE Overview**

#### History

The Committee of Age-Reading Experts, CARE, is a subcommittee of the Canada-USA Groundfish Committee's Technical Subcommittee charged with the task to develop and apply standardized age determination criteria and techniques and operating within the Terms of Reference approved by the TSC in 1986 and the CARE Charter developed in 2000 and approved by the CARE in 2004.

#### CARE Workshop

CARE meets biennially for a three day workshop. Workshops typically consist of one "business" day and one and a half days of hands-on calibration at microscopes to review and standardize age reading criteria. The next CARE workshop in 2013 will focus on the readability of archived otolith samples stored in alcohol versus those stored in glycerin.

#### Report Period

This report covers the work period of January 1, 2012 through December 31, 2012. However, to promote timely reporting of work and recommendations occurring during the recent CARE workshop (April 2013), a separate Executive Summary of the 2013 CARE workshop is included in Appendix I.

### **B.CARE Subcommittee (Working Group) Reports**

1. CARE Manual/Glossary Committee – Betty Kamikawa (NWFSC), Elisa Russ (ADF&G - Homer) Betty Goetz (AFSC), Joan Forsberg (IPHC), Barb Campbell (CDFO).

The Manual/Glossary Committee working group members develop age-reading charter sections or definitions for age-reading terms suggested by CARE members. These charters sections and definitions are subsequently approved by CARE members and added to the CARE Manual/Glossary.

During 2012 the committee reviewed the two new drafts for the manual: QA/QC and halibut.

2. CARE Website Committee – Jon Short (AFSC) Chair & webmaster, Nikki Atkins (NWFSC)

The CARE website working group administers to the appearance, operation, and access to the site, through the cooperation of the PSMFC website and webmaster. The CARE web page is located at <http://www.psmfc.org/care/>.

The committee was not active in 2012.

3. Charter Committee – Kris Munk (ADFG), Betty Goetz (AFSC)

The Charter, initiated in 2000, provides a framework in which the original intent of CARE may continue. It also familiarizes new CARE members to the function of CARE and the responsibilities of its officers and members. The committee is responsible for facilitating changes and updates to the Charter.

The committee was not active in 2012.

4. Sablefish ad hoc Working Group- At the end of August Shayne MacLellan (CDFO) stepped down as chair and Delsa Anderl (AFSC) was appointed as chair. The other committee members are: Jodie Neil (ADFG), Barb Campbell (CDFO), Tom Helser (AFSC), Lisa Kautzi (AFSC), Patrick McDonald, Meredith Cavanagh (NWFSC), Kara Hilwig (ADFG), and Kevin McNeel (ADFG).

The committee was not active in 2012.

### **C. Age Structure Exchanges**

Age structure exchanges periodically occur to assess calibration among CARE age-reading agencies. Depending on results, specimens of interest (e.g. demonstrated biases) are then reviewed and discussed. Exchanges are tracked by the CARE Vice-chair. Data from exchanges are available on the CARE website. There were three age structure exchanges initiated in 2012. Species exchanged were sablefish and sardines.

### **D. Recommendations C.A.R.E. ~TSC**

In 2011 recommendations were made by CARE to CARE, TSC to CARE, and CARE to TSC. Some recommendations may take more than one cycle to complete.

CARE did not initiate any new recommendations in 2012 because they did not meet that year. TSC made a recommendation to CARE in 2012 that would not be addressed until the CARE meeting April 2013.

#### **1. 2010 Recommendations**

##### **1.1. TSC to CARE**

1.1.1. *“Recognizing the value of carbon dating and other potential uses of archived ageing material, TSC recommends that CARE examine the feasibility of preparing an on-line summary of the material that is archived by each of the West Coast groundfish research agencies.”*

##### **1.2. CARE to TSC (None made)**

##### **1.3. CARE to CARE (None made)**

#### **2. 2011 Recommendations**

##### **2.1. CARE to TSC**

2.1.1. With regards to “...examining the feasibility of preparing an on-line summary of the material that is archived by each of the west coast groundfish research agencies”:

*Most agencies do not have publicly accessible age data sample inventories now, except AFSC. CARE recognizes that there are advantages and disadvantages associated with making inventories public. A CARE portal, the website, may be a possible platform to identify inventories. CARE requests clarification on what data the TSC envisions would be made available on said inventory. Then CARE members would consult their agencies regarding the TSC recommendation and will formulate a reply by year end.*

##### **2.2. 2011 TSC to CARE Recommendations:**

2.2.1. *“TSC would like to fully endorse the activities of CARE and acknowledge their great contribution to groundfish research and stock assessment.”*

*TSC thanks CARE for their discussions and consideration of the 2010 request to examine the feasibility of preparing an on-line summary of archived ageing material from their member agencies. Since most agencies do not currently maintain publicly accessible on-line inventories, TSC appreciates that this task will be laborious. “*

1. To clarify for CARE, TSC's 2010 information request includes the following by species:

Number of ageing structures collected by:

- a. structure type
- b. agency
- c. year

2. Number of structures aged by year (already on the website)

3. A link to a contact person at each agency.

2.2.2. CARE Chair query regarding 2011 archive recommendation:

*"Am I correct in assuming that the TSC is looking for numbers of fish age structures (#1) collected for all groundfish species going back as far as each agency has records for?"*

2.2.3. The TSC reply was:

*"This is something that we would like CARE to work toward beginning with the most recent years and progressing back in time if resources permit. This needn't be a scrupulously thorough and exhausting exhumation of numbers of structures and could be an effort that begins with the easiest information and gets added to as they can. But the more information, the better, eventually."*

2.3. 2011 CARE reply to TSC:

2.3.1. Three CARE member agencies are willing to compile and forward "an on-line summary of archived ageing material". This could increase as two more member agencies are willing pending approval. Each member agency has selected a contact person for the website link.

Three CARE member agencies chose not to participate. Some will link the CARE website to their agency website and provide a contact name.

The CARE executive committee is considering how to include the summary of archived ageing material on to the website. In 2012 changes will be made to the CARE website to record the summary of archived ageing material and be ready to implement after the 2013 CARE meeting, pending membership approval.

2.4. 2011 CARE to CARE:

2.4.1. Forum Working Group: CARE recommends that the Forum continue for one more rotation.

2.4.2. Website Committee: CARE recommends the website committee update the CARE website content management system from JOOMLA version 1.12 to version 1.5 to remain current with technology for security and bug fixes.

2.4.3. Manual Working Group: CARE recommends the manual working group continue revision and expansion of the CARE manual to include sections on hake, lingcod otoliths, skates, age validation, and updated rockfish ageing information. In addition, we recommend that a section on ergonomics be added. These additions or revisions should be submitted to the CARE Manual Committee (led by Kamikawa) by April 2012 for committee review. The Manual Committee will submit all changes and updates to CARE for consideration at the 2013 CARE workshop. The CARE Manual Committee will review the halibut and QA/QC sections that were submitted at the 2011 CARE meeting and distribute final drafts to the CARE membership for review.

2.4.4. CARE recommends all members review the method and validation species information on the Species Information webpage to confirm the data is current. Updates or changes should be forwarded to Short. This table will be reintroduced into the biennial meeting agenda for agency updates.

2.4.5. CARE recommends that the 2013 agenda address the effects of long-term storage of otoliths in glycerin.

### 3. 2012 Recommendation

#### 3.1. TSC to CARE

*3.1.1. The TSC thanks CARE for their continued good work and would like to acknowledge their continued work to support the online posting of otolith archives by member agencies in light of their many other work pressures.*

**APPENDIX I**  
**EXECUTIVE SUMMARY**  
**2012 CARE Workshop**

This Executive Summary of the recent 2013 CARE Workshop is appended to the 2012 CARE Annual Report to the TSC in order to promote timely reporting of work that would otherwise not be reported till 2014, and to facilitate work and action to occur over the remaining year.

Overview

The 2013 CARE Workshop was held April 16-18 at Sand Point, Seattle, WA, USA at the Alaska Fisheries Science Center, hosted by Delsa Anderl, Tom Helser and the Age and Growth program Staff. A total of 37 individuals representing seven agencies attended this year (Table 1). Two agencies were not represented because of budget constraints, SWFSC and CDFG. An agenda from this workshop follows under Appendix I-A. This was a productive workshop, highlighted by: group discussions on the condition of structures store for a long term periods of time in glycerin, addressing additions to the CARE Charter and a dogfish mini workshop. There were four scientific presentations, notable accomplishments made by the working groups and nominations to administration positions. There was one Recommendation made to TSC, and four Recommendations made by CARE to itself.

*Working Groups and Reports*

There were four working group's active that reported at the Workshop. There same four (Manual/Glossary, Website, Charter, Sablefish) will be active during the next rotation.

- A. CARE Manual/Glossary Committee – Betty Kamikawa (NWFSC) resigned as lead and these responsibilities were assumed by Elisa Russ (ADF&G - Homer) in March 2013. The other members of the manual working group include: Barbara Campbell (CDFO) [not present at the 2013 meeting] and Betty Goetz (AFSC). New members of the manual working group that joined during the 2013 CARE meeting: Willy Dunne (ADF&G), Lisa Kautzi (ODFW), and April Rebert (ADF&G).
  - a. Three sections were finalized and incorporated into the CARE Manual.
    - 1. A new Pacific Halibut Ageing Procedures,
    - 2. A new Quality Assurance and Quality Control section,
    - 3. An updated Accuracy and Precision section (including validation methods
  - b. Additional sections that were completed and reviewed by both the manual working group and the membership were Lingcod Otolith Ageing, and Thin Sectioning Method. These sections have not been incorporated into the CARE Manual because clarification is needed on how to proceed.
    - 1. Lingcod author retired and we are hoping to follow up with Kevin McNeel (ADFG-Juneau) for finalization.
    - 2. Thin Sectioning has been through final review with author; however we need to determine how to incorporate existing Rockfish Thin Sectioning information into the manual. The manual working group made decisions regarding these sections during this 2013 CARE meeting.
- B. CARE Website Committee – Jon Short (AFSC), Nikki Atkins (NWFSC)
  - a. The CARE website content has been maintained and current in the two years since the last CARE conference. The Species Info page ageing methods was updated January 2013, with many agencies reviewing and updating their species ages and ageing methods. New structure exchanges were added to the site on August 2012. We are still in the process of gathering and

compiling production numbers from all the contributing agencies and hope to have those loaded to the website before the end of April 2013.

- b. The CARE website is still utilizing the Joomla 1.12 content management system (CMS). This version is about six years old and the current version of Joomla is 3.1. Short talked with the PSMFC system administrator, Todd Kaehler, about upgrading Joomla. He said he can load the latest version of Joomla for CARE or one of the other popular CMS, such as WordPress or Drupal. My recommendation is to update to the latest version of Joomla for maximum compatibility.
- c. Future updates to the website include creating consistent capitalization on species info page, update agency production numbers and add a web page for ageing structure inventories.
- d. CARE agreed to continue the forum.

- C. Charter Committee – Chris Gburski Chair (AFSC), Elisa Russ (ADFG), Sandra Rosenfield (WDFW) all are new participants.  
They will be working on reporting obligations, and outline time lines for CARE's officers.

- D. Sablefish working group - Delsa Anderl (Chair) Tom Helser and John Brogan (AFSC), Patrick McDonald(NWFSC), Kevin McNeel (ADFG), Darlene Gillespie (CDFO), Lisa Kautzi (ODFW) and new member April Rebert (ADFG)

The sablefish working group with representatives from AFSC, NWFSC, ADFG-ADU and CDFO convened, reviewed and discussed results from a known age sablefish exchange (n=24) that was aged prior to the CARE meeting, and made a recommendation to revise the Sablefish Ageing Procedures section of the CARE manual that will be submitted to the manual committee prior to or by December 2014.

#### Age Structure Exchanges (Vice-Chair: Elisa Russ)

Russ reported no additional past Case Invoices were retrieved to add to the website. An updated summary of the exchanges is covered in Table 3. There were four exchanges in 2011 and all occurred before the 2011 CARE meeting. In 2012 there were three exchanges.

ODFW and AFSC exchanged two samples of skates sampled off the U.S coast. AFSC, ADFG and ODFW each exchanged a skate sample from the Gulf of Alaska, and AFSC, ADFG and ODFW exchanged a sample of Big Skate. In 2012 a sample of sablefish was exchanged with AFSC, ADFG and NWFSC. Two samples of sardines were exchanged with CDFO and WDFW. With respect to updating the Exchanges Table, most of the 2006 to present CASE invoices are now available on the website. Some of the pre-2006 CASE invoices have been assembled but the rest of the historic case invoices are unaccounted for.

### **Business Session Highlights and Discussion:**

#### **Scientific presentations:**

Four PowerPoint presentations were given:

- *The Spiny Issue of Ageing Spiny Dogfish: Historical Dogma vs. New Methods* by Cindy A. Tribuzio
- *Age validation using stable oxygen isotopes ( $\delta^{18}O$ ) signatures in otoliths: Comparison of secondary ion mass spectrometry and micro milling/continuous flow isotope ratio mass spectrometry*, by Tom Helser.
- *"A new bomb-radiocarbon reference curve for the Bering Sea, and age validations for two species, northern rockfish and yellowfin sole"* by Craig Kestelle
- *The Potential Long Term Effects of Otolith Storage in Glycerin* by Sandra Rosenfield

**Agency reports:** ADFG-all sites (Willy Dunne), WDFW (Lance. Campbell), AFSC (Tom Helser), ODFW (Lisa Kautzi), NWFSC (Patrick McDonald), IPHC (Joan Forsberg) and CDFO (Darlene Gillespie) provided

reports summarizing and updating agency activities, staffing, organization, new species and projects. Important to note was the retiring of Kris Munk (ADFG) and Shayne MacLellan (CDFO). NWFSC purchased elevating desks for all their employees that comply with ergonomic standards.

**Discussion:** Five discussion topics:

1. Members were encouraged to attend The International Otolith Symposium in Spain in October 2014. Lance Campbell (WDFW), Craig Kastle (AFSC), and Darlene Gillespie (CDFO) all expressed an interest to attend pending funding approval. Darlene said she has possession of the poster that was made for the last IOS symposium and if she is not able to attend she will relinquish it to another member who could attend. There was also mention of the 'Age Validation Conference' co-sponsored by Allen Andrews (NOAA-PIFSC) which co-insides with the IOS.
2. There was discussion about the Charter and if there was a need to continue the Charter or disband it. Members decided that it should continue and three new members joined. Additional information to include timelines for the CARE Chair regarding TSC meetings, TSC reports, and examples of oral reports given to TSC was discussed. Include a time table reference for scheduling the bi-annual meetings, draft agendas as well as promoting and encouraging the CARE sub-committees were also discussed. Timelines will be added for the Vice Chair and Secretary as appropriate. These outlines will be presented to CARE for approval in 2015.
3. CARE discussed where and how to add spreadsheets containing Archived Structures information from member agencies to the website. Jon Short (AFSC) suggested we add a link to the existing Species Info table. Members agreed this would be a temporary fix until the website is updated to accommodate a different arrangement.
4. The usefulness of the Forum was addressed. Nikki Atkins (NWFS) reported that it's rarely used by our members. However, she did say she had three requests for new accounts from otolith age readers from other states in the US and abroad. It was decided that as CARE's reputation expands the Forum will encourage outside contacts and the Forum requires little effort to maintain. Also, with sequesters and budget constraints, it may still prove useful in the future for emergency communication purposes.
5. The Focus of CARE for 2013 was the effect of otolith stored long term in glycerin. Sandra Rosenfield (WDFW) presented a PowerPoint presentation of observations made of otolith stored in glycerin since 1970. Samples from 1970 -1985 were stored in vials with the otoliths separated by paper disks and then filled with a liquid media of 30% ethanol and water or 30% glycerin, water and pinch of thymol. At the time there was no preference as to which media was used. The vials once filled were dipped in paraffin to prevent evaporation. Over the years, the samples in ethanol and water did evaporate, but there was no long term effect on the otoliths' age ability. The glycerin, water and tymol samples did not evaporate. The otoliths, when removed from the vial, appeared translucent and seeped glycerin for days. 5% were etched on the surface with a powdery residue. When broken and burnt 60% showed a cloudy band on the outer edge concealing 5 to 15 annuli. Members were asked to fill out a survey on procedures used for otoliths storage. The results showed two other agencies having issues with glycerin when used for long term storage of otoliths. Shayne McLellan (CDFO) noted hake stored from the 1970's were recently aged using the break and burn method and they also revealed a milky white band on the outer edge. The white edge was very apparent, though CDFO could age around or see through the "milky white edge." MacLellan also stated that small sablefish otoliths (stored long term in glycerin) had a white powdery film all over them and they removed them from the glycerin media and now store them dry. Joan Forsberg (IPHC) noted their juvenile halibut otoliths stored in glycerin had become pliable and coated with a white film. They also removed the otoliths from the glycerin media, rinsed them in water and then stored them dry. Forsberg was concerned because they no longer age halibut otoliths using the surface method; they recently changed to baking and breaking. She said their archives go back



to 1914 and everything is stored in glycerin. Forsberg is going to age the halibut using the bake and break method and report back to CARE in 2015. The members discussed potential causes attributing to the otoliths deterioration, potential issues for age validation, and concern for the otoliths integrity if they remain in glycerin. AFSC archives all their otoliths in glycerin because of fire regulations. They are also going to age their otoliths and report to CARE in 2015. The findings from this report and information from IPHC and AFSC will collectively be considered when a recommendation is made to the manual committee regarding the use of glycerin as a storage media.

#### **Administration nominations:**

New officers will begin their duties as of 01 July 2013 for a two year rotation. They are:

CARE Chair: Elisa Russ (ADFG-Homer)

CARE Vice-chair: Chris Gburski (AFSC)

Secretary: Lance Sullivan (NWFSC)

#### **Workshop and Hands-on Session Highlights and Discussion:**

A dogfish mini workshop lead by Cindy Tribuzio convened on Wednesday the 17th. We first discussed the spiny dogfish ageing manual from the NPRB study (April, 2013-draft). *Methods for the preparation of spines and vertebrae and an overview of age structure reading* Age structures were processed by Cal Blood for a reference collection to calibrate ages across agencies, and were aged by all attending age readers and inter-reader ageing results were compared including precision (CV) by Tribuzio. Live images for vertebrae were viewed and growth patterns and age assignments were discussed. After group agreement on an age, the consensus age was recorded.

Agencies: Nikki Atkins, Tyler Johnson (NWFSC), Beth Matta, Chris Gburski (AFSC), Sandra Rosenfield, Jennifer Topping (WDFW), Willy Dunne (ADFG) Vanessa Hodes (CDFO) and Cal Blood ( independent contractor)

A total of 27 readers reviewed 10 species during the hands on workshop. Members aged sardines, Geoduck, black rockfish, blue rockfish, rougheye rockfish, hake, yelloweye rockfish, redbanded rockfish, Pacific cod, and shortraker rockfish. All the species, members and agencies are listed in Table 2 Scope Time

#### **Recommendations C.A.R.E. ~TSC**

Status of the 2013 or previous pending recommendations are summarized below.

#### **2010 TSC to CARE**

*Recognizing the value of carbon dating and other potential uses of archived ageing material, TSC recommends that CARE examine the feasibility of preparing an on-line summary of the material that is archived by each of the west coast groundfish research agencies*

#### **Initial CARE Reply to TSC to CARE 2010 Recommendation**

*With regards to "...examining the feasibility of preparing an on-line summary of the material that is archived by each of the west coast groundfish research agencies":*

*Most agencies do not have publicly accessible age data sample inventories now, except AFSC. CARE recognizes that there are advantages and disadvantages associated with making inventories public. A*

CARE 2012 Report to the Technical Subcommittee of the Canada-USA Groundfish Committee - April 2013  
*CARE portal, the website, may be a possible platform to identify inventories. CARE requests clarification on what data the TSC envisions would be made available on said inventory. Then CARE members would consult their agencies regarding the TSC recommendation and will formulate a reply by year end.*

## **2011 TSC to CARE Recommendations:**

*TSC would like to fully endorse the activities of CARE and acknowledge their great contribution to groundfish research and stock assessment.*

*TSC thanks CARE for their discussions and consideration of the 2010 request to examine the feasibility of preparing an on-line summary of archived ageing material from their member agencies. Since most agencies do not currently maintain publicly accessible on-line inventories, TSC appreciates that this task will be laborious.*

To clarify for CARE, TSC's 2010 information request includes the following by species:

- 1. Number of ageing structures collected by
  - a. structure type*
  - b. agency*
  - c. year**
- 2. Number of structures aged by year (already on the website)*
- 3. A link to a contact person at each agency*

## **CARE Chair query regarding 2011 archive recommendation:**

*"Am I correct in assuming that the TSC is looking for numbers of fish age structures (#1) collected for all groundfish species going back as far as each agency has records for?"*

## **The TSC reply was:**

*This is something that we would like CARE to work toward beginning with the most recent years and progressing back in time if resources permit. This needn't be a scrupulously thorough and exhausting exhumation of numbers of structures and could be an effort that begins with the easiest information and gets added to as they can. But the more information, the better, eventually.*

## **2011 CARE reply to TSC:**

Three CARE member agencies are willing to compile and forward "an on-line summary of archived ageing material". This could increase as two more member agencies are willing pending approval. Each member agency has selected a contact person for the website link.

The CARE executive committee is considering how to include the summary of archived ageing material on to the website. In 2012 changes will be made to the CARE website to record the summary of archived ageing material and be ready to implement after the 2013 CARE meeting, pending membership approval.

## **2011 CARE to CARE**

1. Forum Working Group: CARE recommends that the Forum continue for one more rotation.
2. Website Committee: CARE recommends updating the CARE website content management system from JOOMLA version 1.12 to version 1.5 to remain current with technology for security and bug fixes.

3. **Manual Working Group:** CARE recommends the manual working group continue revision and expansion of the CARE manual to include sections on hake, lingcod otoliths, skates, age validation, and updated rockfish ageing information. In addition, we recommend that a section on ergonomics be added. These additions or revisions should be submitted to the CARE Manual Committee (led by Kamikawa) by April 2012 for committee review. The Manual Committee will submit all changes and updates to CARE for consideration at the 2013 CARE workshop. The CARE Manual Committee will review the halibut and QA/QC sections that were submitted at the 2011 CARE meeting and distribute final drafts to the CARE membership for review.
4. CARE recommends all members review the method and validation species information on the Species Information webpage to confirm the data is current. Updates or changes should be forwarded to Short. This table will be reintroduced into the biennial meeting agenda for agency updates.
5. CARE recommends that the 2013 agenda address the effects of long-term storage of otoliths in glycerin.

## **2012 TSC to CARE**

The TSC thanks CARE for their continued good work and would like to acknowledge their continued work to support the online posting of otolith archives by member agencies in light of their many other work pressures.

## **CARE to TSC 2013**

At the 2013 CARE meeting, the manual working group drafted a section on Ergonomics for inclusion in the CARE Manual on Generalized Age Determination. It is important that agency leaders recognize the health risks associated with age reading and equipment options that may be available to mitigate these risks.

## **CARE to CARE 2013**

1. CARE recommends the manual working group post archived editions of the CARE Manual on the website with a link to the year of publication.
2. **Manual/Glossary Committee:** CARE recommends the Manual/Glossary continue revision and expansion of the C.A.R.E. Manual on Generalized Age Determination (CARE Manual) as described here. Finalize the draft on Lingcod Otolith Ageing and incorporate into the CARE Manual by June 1, 2013. Edit the draft for the updated Thin Sectioning Method and include in the General Ageing Procedures section in the manual to reference all age structures (otolith, vertebrae, and fin rays) and then edit the Rockfish Ageing Thin Section Method section to avoid redundancy. Write a section to be included in General Ageing Procedures describing baking otoliths and collaborate with other agencies that utilize that method for rockfish. Additionally, revise the remaining sections of the Rockfish Ageing Procedures section and move some information to the Otolith Ageing Procedures section where appropriate (e.g. microscope equipment information). Write a short section on Ergonomics and include with general information on equipment. Draft a new section on Walleye Pollock Ageing Procedures with collaboration with other agencies that age Pollock. Revise the Sablefish Ageing Procedures section. Additionally, we recommend removing the documentation sections at the beginning of the manual (describing participants and contributors) because the documentation is incomplete, and then add an Acknowledgements section at the end of the document listing contributors to the manual. However, in order to maintain the CARE Manual as a historical reference, it is also recommended to post the old version(s) of the CARE Manual (when new versions are produced) to the website with links referencing their year of publication. The Thin Sectioning, Baked Otolith methods, updated Rockfish Ageing Procedures, Ergonomics, and Acknowledgments sections are assigned and to be submitted to the

lead of the Manual Working Group (Elisa Russ) by October 2013, and the Walleye Pollock and sablefish sections are to be submitted by December 2014. After review and approval by the Manual Working Group, all revisions will be submitted to the full CARE membership for final review and approval followed by incorporation into the CARE Manual.

3. CARE recommends that the Forum continue.
4. CARE recommends the Website committee load a new version of Joomla for the CARE website or one of the other popular CMS, such as WordPress or Drupal. Future planned updates to the website include creating consistent capitalization on Species Info page, update agency production numbers and add a webpage for ageing structure inventories.
5. CARE to CARE Several agencies have observed otolith degradation from long-term storage in glycerin-thymol. Propose further study of otoliths stored long term in glycerin-thymol, from IPHC and AFSC. At the next CARE, their observations regarding the media of water glycerin-thymol combined with reports from 2013 will collectively result in a recommendation to the manual committee in 2015.
6. Charter Working Group: The charter will be expanded to include timelines for reports and meetings for possible additions to the charter pending CARE membership approval.



## **APPENDIX-II**

### Seventeenth Biennial Meeting of the Committee of Age Reading Experts

C.A.R.E. Agenda  
Canada – US Groundfish Committee  
April 16 – 18, 2013  
AFSC, Sand Point, Seattle, WA, USA  
Traynor Room

**Tuesday April 16, 2013 (8:30 am - 4:30 pm)**

#### **I. Welcome and Opening Statements (8:30 – 9:15)**

- A. Call to Order (Sandra Rosenfield, CARE Chair)
- B. Host Statements
  - 1. Opening statements (Theresa Tsou and Thomas Helser)
  - 2. Host information (Delsa Anderl)
- C. Introductions
  - 1. Round-table introductions (name, agency, location)
  - 2. Attendance, address, phone, email
- D. Approval of the 2013 agenda
- E. CARE to CARE recommendations from 2011
  - 1. Review the usefulness of the Forum
  - 2. Update website version from 1.12 to 1.5
  - 3. Review the method and validation in Species Info on the website (for updates and changes contact Jon Short)
  - 4. Update the manual to include:
    - a. Sections on Halibut
    - b. QA/QC
    - c. Draft a hake section, skate section and ergonomics section
    - d. Lingcod otoliths added to the lingcod finray section,
    - e. Updated rockfish section to include thin sections and baked otolith
  - 5. Age validation section reviewed for updates and revisions

#### **II. Working Group Reports / Activity Since CARE 2011 (9:15 - 10:00)**

- A. 2012 TSC Meeting (Sandra Rosenfield)
- B. Age structure exchanges (Elisa Russ)
- C. CARE Manual (Elisa Russ)
- D. Website (Jon Short)
- E. Forum (Nikki Atkins)
- F. Sablefish (Delsa Anderl)

*Break (10:00-10:15)*

### III. Agency Overviews and Updates (10:15-11:00)

\*No PowerPoint; 5 minute updates (staffing, organizational, new species/projects, etc.)

- A. CDFG
- B. SWFSC
- C. CDFO (Darlene Gillespie)
- D. IPHC (Joan Forsberg)
- E. ODFW (Lisa Kautzi)
- F. AFSC (Tom Helser)
- G. NWFSC (Patrick McDonald)
- H. WDFW (Lance Campbell and Jennifer Topping)
- I. ADFG (Willy Dunne)

### IV. Topics for Discussion / New Business (11:00-12:00)

- A. Otolith Symposium 2014 and other symposiums
- B. Conferences since 2011
- C. Charter: "The purpose is to familiarize new CARE members with the function of CARE and the responsibilities of its officers and members. The committee is responsible for facilitating changes and updates to the Charter." Kris Munk suggested:
  - 1. Define working groups
  - 2. Work and reporting obligations
  - 3. Suggest time limits
  - 4. Add new members or disband the committee
- D. Should the Manual include potential differences between stocks within species?
- E. Archive structures added to the website:
  - 1. Location on the CARE website
  - 2. Agency contacts
  - 3. Link to other websites (AFSC)
- F. Species Info on the website - needs Agency updates
- G. Additional topics
- H. Non-agenda items

*Lunch (12:00-1:00)*

### V. Scientific PowerPoint Presentations (1:00 – 2:00pm)

- A. The Spiny Issue of Ageing Spiny Dogfish (Cindy Tribuzio)
- B. A new bomb-radiocarbon reference curve for the Bering Sea (Craig Kastle)
- C. High resolution  $\delta^{18}\text{O}$  sampling of otoliths for age validation – a comparison using micromilling/continuous flow mass spectrometry and secondary ion mass spectrometry (Thomas Helser)

### VI. Work Shop Focus (2:00 – 2:30)

- A. Longtime storage of otolith in glycerin using WDFW's samples from the 1970s (Sandra Rosenfield)
- B. Discussion

*Break (2:30-2:45)*

VII. Working groups & Hands-On Workshop (2:45 – 4:30 pm)

- A. Working groups:
  - 1. Meet and formulate written recommendations
  - 2. Prepare the recommendations electronically (to be presented Thursday morning)
- B. Hands-on scope work
  - 1. Sign up for scope station space and time

Wednesday April 17, 2013 (8:30 am - 4:30 pm)

I. Working groups & Hands on Workshop Continued

- A. Dogfish working group (Room 2079)
- B. Working Groups
- C. Hands-on Workshop

Thursday April 18, 2013 (8:30 am – 12:00 noon)

I. Recommendations (8:30 – 9:00)

- A. 2013 CARE to TSC
- B. 2013 CARE to CARE

II. Concluding CARE business (9:00 -10:00)

- A. Administration nominations
- B. Schedule and location of 2015 meeting

III. Working groups & Hands on Workshop (10:00 – 12:00 noon)

- A. Working Groups
- B. Hands-on Workshop

IV. Adjourn (12:00 noon)



**Table 1 Attendees of the 2013 CARE Workshop April 16-18 2013**

<b>Last name</b>	<b>First name</b>	<b>Agency</b>	<b>Location</b>	<b>Country</b>	<b>Email</b>
McNeel	Kevin	ADFG	Juneau	USA	<a href="mailto:Kevin.McNeel@alaska.gov">Kevin.McNeel@alaska.gov</a>
Rebert	April	ADFG	Juneau	USA	<a href="mailto:April.Rebert@alaska.gov">April.Rebert@alaska.gov</a>
Russ	Elisa	ADFG	Homer	USA	<a href="mailto:elisa.russ@alaska.gov">elisa.russ@alaska.gov</a>
Pollak	Andrew	ADFG	Homer	USA	<a href="mailto:andrew.pollak@alaska.gov">andrew.pollak@alaska.gov</a>
Dunne	Willy	ADFG	Homer	USA	<a href="mailto:willy.dunne@alaska.gov">willy.dunne@alaska.gov</a>
Anderl	Delsa	AFSC	Seattle	USA	<a href="mailto:delsa.anderl@noaa.gov">delsa.anderl@noaa.gov</a>
Goetz	Betty	AFSC	Seattle	USA	<a href="mailto:Betty.Goetz@noaa.gov">Betty.Goetz@noaa.gov</a>
Kastelle	Craig	AFSC	Seattle	USA	<a href="mailto:Craig.Kastelle@noaa.gov">Craig.Kastelle@noaa.gov</a>
Short	Jon	AFSC	Seattle	USA	<a href="mailto:Jon.Short@noaa.gov">Jon.Short@noaa.gov</a>
Hutchinson	Charles	AFSC	Seattle	USA	<a href="mailto:Charles.Hutchinson@noaa.gov">Charles.Hutchinson@noaa.gov</a>
Gburski	Chris	AFSC	Seattle	USA	<a href="mailto:Christopher.Gburski@noaa.gov">Christopher.Gburski@noaa.gov</a>
Piston	Charlie	AFSC	Seattle	USA	<a href="mailto:Charlie.Piston@noaa.gov">Charlie.Piston@noaa.gov</a>
Johnston	Chris	AFSC	Seattle	USA	<a href="mailto:Chris.Johnston@noaa.gov">Chris.Johnston@noaa.gov</a>
Brogan	John	AFSC	Seattle	USA	<a href="mailto:john.brogan@noaa.gov">john.brogan@noaa.gov</a>
Matta	Beth	AFSC	Seattle	USA	<a href="mailto:Beth.Matta@noaa.gov">Beth.Matta@noaa.gov</a>
Colman	Jamie	AFSC	Seattle	USA	<a href="mailto:jamie.colman@noaa.gov">jamie.colman@noaa.gov</a>
Helser	Tom	AFSC	Seattle	USA	<a href="mailto:Thomas.Helser@noaa.gov">Thomas.Helser@noaa.gov</a>
Gillespie	Darlene	CDFO	Nanaimo	Canada	<a href="mailto:Darlene.Gillespie@dfo-mpo.gc.ca">Darlene.Gillespie@dfo-mpo.gc.ca</a>
Hudson	Mary-Jane	CDFO	Nanaimo	Canada	<a href="mailto:Mary-Jane.Hudson@dfo-mpo.gc.ca">Mary-Jane.Hudson@dfo-mpo.gc.ca</a>
Hodes	Vanessa	CDFO	Nanaimo	Canada	<a href="mailto:Vanessa.Hodes@dfo-mpo.gc.ca">Vanessa.Hodes@dfo-mpo.gc.ca</a>
Forsberg	Joan	IPHC	Seattle	USA	<a href="mailto:Joan@iphc.int">Joan@iphc.int</a>
Gibbs	Linda	IPHC	Seattle	USA	<a href="mailto:linda@iphc.int">linda@iphc.int</a>
Tobin	Robert	IPHC	Seattle	USA	<a href="mailto:robert@iphc.washington.edu">robert@iphc.washington.edu</a>
Atkins	Nikki	NWFSC	Newport	USA	<a href="mailto:Nikki.Atkins@noaa.gov">Nikki.Atkins@noaa.gov</a>
McDonald	Patrick	NWFSC	Newport	USA	<a href="mailto:patrick.j.mcdonald@noaa.gov">patrick.j.mcdonald@noaa.gov</a>
Whiteside	Cassandra	NWFSC	Newport	USA	<a href="mailto:cassandra.whiteside@noaa.gov">cassandra.whiteside@noaa.gov</a>
Sullivan	Lance	NWFSC	Newport	USA	<a href="mailto:lance.sullivan@noaa.gov">lance.sullivan@noaa.gov</a>
Higgins	Brooke	NWFSC	Newport	USA	<a href="mailto:brooke.higgins@noaa.gov">brooke.higgins@noaa.gov</a>
Johnson	Tyler	NWFSC	Newport	USA	<a href="mailto:tjohnson@psmfc.org">tjohnson@psmfc.org</a>
Kautzi	Lisa	ODFW	Newport	USA	<a href="mailto:lisa.a.kautzi@state.or.us">lisa.a.kautzi@state.or.us</a>
Rosenfield	Sandy	WDFW	Olympia	USA	<a href="mailto:Sandra.Rosenfield@dfw.wa.gov">Sandra.Rosenfield@dfw.wa.gov</a>
Topping	Jennifer	WDFW	Olympia	USA	<a href="mailto:Jennifer.Topping@dfw.wa.gov">Jennifer.Topping@dfw.wa.gov</a>
Campbell	Lance	WDFW	Olympia	USA	<a href="mailto:Lance.Campbell@dfw.wa.gov">Lance.Campbell@dfw.wa.gov</a>
Tsou	Tien-Shui	WDFW	Olympia	USA	<a href="mailto:Theresa.Tsou@dfw.wa.gov">Theresa.Tsou@dfw.wa.gov</a>
Claiborne	Andrew	WDFW	Olympia	USA	<a href="mailto:andrew.claiborne@dfw.wa.gov">andrew.claiborne@dfw.wa.gov</a>
Tribuzio	Cindy	NMFS-Auke Bay	Juneau	USA	<a href="mailto:cindy.tribuzio@noaa.gov">cindy.tribuzio@noaa.gov</a>
Blood	Cal	Contractor	Seattle	USA	<a href="mailto:calb640b@hotmail.com">calb640b@hotmail.com</a>



**Table 2. 2013 CARE Scope Time**

<b>Species</b>	<b>Participants</b>	<b>Agency</b>	<b>Comments</b>
Sardine	Jennifer topping	WDFW	Sample exchange
	Vanessa Hodes	CDFO	
Sardine	Sandra Rosenfield	WDFW	Sample exchange
	Vanessa Hodes	CDFO	
Pacific cod	Chris Johnston	AFSC	Calibration
	Elisa Russ	ADFG	
	Andy Pollak	ADFG	
Yelloweye	Elisa Russ	ADFG	Calibration
	Andy Pollak	ADFG	
Shortraker	Charles Hutchinson	AFSC	
	Jeremy Harris	?	
Rougheye	Betty Goetz	AFSC	Calibration
	Lance Sullivan	NWFSC	
	Cassie Whiteside	NWFSC	
	Charles Hutchinson	AFSC	
	Mary Jane Hudson	CDFO	
Redbanded	Betty Goetz	AFSC	Calibration
	Lance Sullivan	NWFSC	
	Cassie Whiteside	NWFSC	
	Charles Hutchinson	AFSC	
	Mary Jane Hudson	CDFO	
Black rockfish	Elisa Russ	ADFG	Calibration
	Andy Pollak	ADFG	
	Willy Dunne	ADFG	
	Mary Jane Hudson	CDFO	
Geoduck	Darlene Gillespie	CDFO	Calibration
	April Rebert	ADFG	
	Kevin McNeel	ADFG	
Geoduck	Darlene Gillespie	CDFO	Calibration
	April Rebert	ADFG	
Dogfish	Patrick McDonald	NWFSC	Spines
	Chris Gburski	AFSC	
	Vanessa Hodes	CDFO	
	Beth Matta	AFSC	
Dogfish	Cindy Tribuzio	NNFS-Juneau	Vertebrae
	Patrick McDonald	NWFSC	Training
	Chris Gburski	AFSC	
	Vanessa Hodes	CDFO	
	Beth Matta	AFSC	
	Sandra Rosenfield	WDFW	
	Jennifer topping	WDFW	
	Willy Dunne	ADFG	
	Cal Blood	contractor	
Blue rockfish	Jennifer topping	WDFW	Cross training
	Lisa Kautzi	ODFW	
Black rockfish	Sandra Rosenfield	WDFW	Cross training
	Lisa Kautzi	ODFW	
Hake	Mary Jane Hudson	CDFO	
	Darlene Gillespie	CDFO	

**Table 3. CARE age structure exchanges initiated/completed from 2011-2013**

Exchange ID No.	Exchange Year	Species	Stock	Originating Agency	Coordinator	Coordinator (s)
12-003	2012	Sardine	Astoria OR	WDFW	S. Rosenfield	CDFO
12-002	2012	Sardine	British Columbia	CDFO	V. Hodes	WDFW
12-001	2012	Sablefish		ADFG	Munk	AFSC, NWFS
11-004	2011	Longnose Skate	US West coast	ODFW	J. Thompson	AFSC
11-003	2011	Longnose Skate	US West coast	ODFW	J. Thompson	AFSC
11-002	2011	Longnose Skate	Gulf of Alaska	AFSC	C. Gburski	ADFG, ODFW
11-001	2011	Big Skate	Gulf of Alaska	AFSC	C. Gburski	ADFG, ODFW