

Committee of Age-Reading Experts

2011 Committee Report

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

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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. Members are charged with the task of developing and applying standardized age determination criteria and techniques. CARE members operate within the Terms of Reference approved by the TSC in 1986 and the CARE Charter developed in 2000, and approved by 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, 2011 through December 31, 2011. The most recent biennial CARE Workshop was held April 11 through April 15, 2011. It was attended by 38 agency members from Washington, Oregon, Alaska, California and British Columbia. This reporting period included information from the Executive Summary (prepared by past Chair MacLellan) dated May 3 through May 5, 2011. *For meeting details see the 2011 workshop minutes posted on the CARE website at www.psmfc.org/care/.*

B. CARE Subcommittee (Working Group) Reports

- 1. CARE Manual/Glossary Committee** – The committee consists of Kamikawa, Goetz, Forsberg, and three incoming members in 2011 (Russ, B. Campbell, and Failor).

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 the 2011 CARE meeting, the rockfish section was reviewed and updated. Revisions were identified and Goetz agreed to update the section as necessary. The committee is currently reviewing two new drafts for the manual: the QA/QC techniques by B. Campbell and age determination of halibut by Forsberg.

These agencies plan to work on the following new species: a hake section by NWFSC and CDFO members, a lingcod otolith section by ADFG members and a skate section by AFSC. Minor revisions and updates to the age validation section will be done by AFSC.

Goetz offered to draft a section on ergonomics. The committee generated a CARE to CARE recommendation for 2011 to present the latest ergonomic information at the next CARE meeting.

2. **CARE Website Committee** – Short, Atkins

The appearance and operation of the CARE website is maintained with the cooperation of the PSMFC.

In 2011 the structure exchanges were updated to include aged PDFs of completed historical case invoices (1998-2009) linked to the table on the CARE website. The CARE charter, the citation, and the disclaimer were added to the footer. The 2011 minutes were also posted.

Atkins recommended the CARE Forum continue for one more rotation and asked that the members post general communications and check for new information on a regular basis.

The committee will continue to add the following information to the website: the 2011 photos, the 2010 production numbers, the 2010 structure exchanges, and the completed case inventory samples Russ (Vice-chair) recovers from the 1998-2005 historical case inventories. The committee is also looking into the feasibility of preparing an on-line summary of the material that is archived by each of the West Coast groundfish agencies in reply to TSC to CARE 2010.

Short recommended updating the version of JOOMLA to 1.5 for security reasons and submitted a CARE to CARE recommendation to that effect.

3. **Charter Committee** – Munk, Goetz

The Charter, initiated in 2000, provides a framework in which the original intent of CARE may continue. It also hastens familiarization of 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.

There was little activity to report in 2011. MacLellan stepped down from the committee in April. There was a call for new members and none stepped forward.

The committee recommends adding a working group section to highlight the purpose of the group and current activities with a link to past achievements.

4. **Sablefish ad hoc Working Group**- MacLellan, Neil, B. Campbell, Anderl, Helser, Kautzi, McDonald, Cavanagh, Hilwig, McNeel

The group reviewed the **WebEx** meeting and identified issues with examples of the known-age imaged sablefish otolith. The group outlined items for documentation to be developed into a scientific manuscript. The group discussed many ageing issues: burning techniques, breaking strategies, storage strategies, and identifying annuli versus checks. They generally agreed upon criteria documenting patterns and where they were unable to agree suggestions of possible interpretations were noted.

The group plans to develop a technical document and to update the CARE manual. They continue to work identifying the 1st annulus size range, discuss the pros and cons of each agency's storage methods, and each agency's protocols of Q/C.

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.

Seven age structure exchanges initiated in 2010 are now complete. The species were Pacific whiting (CDFO, NWFSC), Pacific ocean perch for training (WDFW, CDFO) and lingcod for training (ADFG, ODFW), Pacific hake (NWFSC, CDFO), big skate (AFSC, CDFO), Longnose skate (AFSC, CDFO) and Longnose skate (ADF&G between the labs in Homer and Juneau).

Four exchanges initiated in 2011 are not yet completed. These exchanges are Big skate stained thin sections (AFSC, ADFG, ODFW), Longnose skate stained thin sections (AFSC, ADFG, ODFW) Longnose skate stained thin sections (AFSC, ODFW) and Longnose skate unstained thin sections (AFSC, ODFW) (Table 3).

D. Business Session Highlights and Discussion:

Demonstrations: There were three notable demonstrations during the CARE meeting. These demonstrations included imaging, (Anderl) micro-milling, (Kastelle) and elasmobranch vertebrae staining (Matta, Gburski). Anderl demonstrated AFSC's imaging system and the associate hardware and software. The demonstrations included information on Photoshop (image manipulation, hot keys, macros, annotation, layers, stitching, scale bars) and Portfolio image storage. Gburski and Matta demonstrated their staining technique for vertebrae. In their demonstration, the thin sections were decalcified, stained, restained, soaked in glycerin, and slide mounted. Kastelle demonstrated AFSC's new micro-mill instrumentation.

Scientific presentations: Six PowerPoint presentations were given: (1) CDFO's new groundfish age data sheet (MacLellan), (2) Preliminary age validation of Pacific cod using stable oxygen isotopes (Kastelle), (3) AFSC imaging system and its uses (Anderl), (4) digital reference collections via Photoshop (Wischniowski), (5) management of AFSC images (Short) and (6) digital camera and AFSC new micromill (Kastelle).

Discussion: There were three noteworthy topics of discussion. First, concern was expressed that CARE was not following its mandate. Members conferred and concluded the concern to be unfounded. Second, the CARE forum's usefulness was discussed. The members agreed to continue supporting the forum and evaluate its usefulness again at the next CARE meeting in 2013. The last topic - imaging - was the main focus for the 2011 CARE meeting. Discussions about software (image editing, tagging metadata, archiving), hardware, and image-taking protocols were facilitated through the PowerPoints presented. Imaging was recognized as a powerful tool for exchanges and documentation but members clearly stated that imaging could not be substituted for actual scope work.

Workshop: Twenty-seven CARE members utilized the hands-on session to review sablefish, skate, Pacific ocean perch, dogfish, and geoduck, Albacore tuna, Pacific cod, yelloweye rockfish, shortraker rockfish, and salmon shark. (Table 2)

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.

2009 CARE to CARE

1. Charter Working Group: No advancement has been made to add a working group section to the charter to highlight their purpose or current activities with a link to past achievements (“archive”) on the website. Charter members present at the 2011 meeting discussed this and suggested this information might be better located somewhere else on the website other than the charter. The committee needs to discuss this further and make a recommendation at the next CARE meeting in 2013.

2011 CARE to CARE

1. Forum Working Group: We recommend that the Forum continue for one more rotation.
2. Website Committee: We recommend 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: We recommend that CARE 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.

Original 2010 TSC to CARE recommendation:

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.

2011 CARE to TSC response:

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 portal, (using the CARE 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 will consult their agencies regarding the TSC recommendation and formulate a reply.

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.

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.

Table 1. Attendees of the 2011 CARE Workshop, 11-14 April 2011, Seattle, WA.

Last Name	First Name	Agency	Location
Anderl	Delsa	AFSC	Seattle
Atkins	Nikki	NWFSC	Newport
Benson	Irina	AFSC	Seattle
Blood	Cal	Retired	Seattle
Brogan	John	AFSC	Seattle
Campbell	Barb	CDFO	Nanaimo
Campbell	Lance	WDFW	Olympia
Cavanagh	Meredith	NWFSC	Newport
El Mejjati	Sonya	ADFG	Kodiak
Failor	Barbi	ADFG	Homer
Forsberg	Joan	IPHC	Seattle
Gburski	Chris	AFSC	Seattle
Gibbs	Linda	IPHC	Seattle
Goetz	Betty	AFSC	Seattle
Helser	Tom	AFSC	Seattle
Hiller	Lisa	WDFW	Olympia
Hilwig	Kara	ADFG	Juneau
Hutchinson	Charles	AFSC	Seattle
Johnston	Chris	AFSC	Seattle
Kastelle	Craig	AFSC	Seattle
Kautzi	Lisa	AFSC	Seattle
MacLellan	Shayne	CDFO	Nanaimo
Matta	Beth	AFSC	Seattle
McDonald	Patrick	NWFSC	Newport
McNeel	Kevin	ADFG	Juneau
Neil	Jodi	ADFG	Juneau
Piston	Charlie	AFSC	Seattle
Pollak	Andrew	ADFG	Homer
Rodriguez	Omar	NWFSC	Newport
Rosenfield	Sandy	WDFW	Olympia
Russ	Elisa	ADFG	Homer
Short	Jon	AFSC	Seattle
Sizemore	Bob	WDFW	Olympia
Thompson	Josie	ODFW	Newport
Tobin	Robert	IPHC	Seattle
Topping	Jenny	WDFW	Olympia
Wells	David	AFSC	Seattle
Wischniowski	Steve	IPHC	Seattle

Table 2. 2011 CARE Scope Time

Species	Participants	Agencies	Comments
Pacific cod etc	Lance Campbell	WDFW	Prep of otolith samples for LA-ICPMS
"	Craig Kastell	AFSC	"
Geoduck ageing	Craig Kastell	AFSC	Preparation & ageing methods, cross-dating
"	Lisa Hillier	WDFW	"
"	Bob Sizemore	WDFW	"
"	Shayne MacLellan	CDFO	"
Big/Longnose/skates	Elisa Russ	ADFG-Homer	Age calibration
"	Josie Thompson	ODFW	"
"	Chris Gburski	AFSC	"
"	Andrew Pollak	ADFG-Homer	"
"	Barbi Failor	ADFG-Homer	"
Albacore tuna	Barb Campbell	CDFO	Age calibration
"	David Wells	SWFSC	"
Pacific ocean perch	Sandy Rosenfield	WDFW	Age calibration
"	Jennifer Topping	WDFW	"
Pacific ocean perch	Sandy Rosenfield	WDFW	Comparing methods otolith preparation
"	Jennifer Topping	WDFW	"
"	Charlie Piston	AFSC	"
Pacific ocean perch	Sandy Rosenfield	WDFW	Alaska vs west coast growth patterns
"	Jennifer Topping	WDFW	"
"	Betty Goetz	AFSC	"
Dogfish	Sandy Rosenfield	WDFW	New WDFW training method for ageing
"	Jennifer Topping	WDFW	"
"	Lance Campbell	WDFW	"
"	Patrick McDonald	NWFSC	"
"	Omar Rodriguez	NWFSC	"
Dogfish	Chris Gburski	AFSC	Evaluate staining method, compare dorsal spine to vertebrae age
"	Omar Rodriguez	NWFSC	"
"	Patrick McDonald	NWFSC	"
Pacific cod	Sonya El Mejjati	ADFG-Kodiak	Age calibration
"	Chris Johnston	AFSC	"
Greenland halibut	John Brogan	AFSC	Age calibration
Sablefish	Kara Hilwig	ADFG-Juneau	Age calibration - known age otoliths X 3 occasions
"	Jodi Niel	ADFG-Juneau	"
Sablefish	Patrick McDonald	NWFSC	Age calibration
"	Meredith Cavanagh	NWFSC	"
"	Delsa Anderl	AFSC	"
"	Lisa Kautzi	AFSC	"
"	Kevin McNeel	ADFG-Juneau	"

Sablefish	Kara Hilwig	ADFG-Juneau	Sablefish working group - known age otoliths, calibration, documentation
"	Jodi Niel	ADFG-Juneau	"
"	Kevin McNeel	ADFG-Juneau	"
"	Shayne MacLellan	CDFO	"
"	Barb Campbell	CDFO	"
"	Delsa Anderl	AFSC	"
"	John Brogan	AFSC	"
"	Lisa Kautzi	AFSC	"
"	Patrick McDonald	NWFSC	"
"	Meredith Cavanagh	NWFSC	"
Skate/shark	Chris Gburski	AFSC	"
"	Sonya El Mejjati	ADFG-Kodiak	"
"	Elisa Russ	ADFG-Homer	Age calibration
Pacific cod	Delsa Anderl	AFSC	"
"	Barbi Failor	ADFG-Homer	"
"	Chris Johnston	AFSC	"
"	Andrew Pollak	ADFG-Homer	"
Yelloweye rockfish	Kara Hilwig	ADFG-Juneau	Age calibration
"	Kevin McNeel	ADFG-Juneau	"
"	Barb Campbell	CDFO	"
Yelloweye rockfish	Kara Hilwig	ADFG-Juneau	Age calibration
"	Jodi Niel	ADFG-Juneau	"
Yelloweye rockfish	Kara Hilwig	ADFG-Juneau	Age calibration
"	Kevin McNeel	ADFG-Juneau	"
"	Elisa Russ	ADFG-Homer	"
"	Andrew Pollak	ADFG-Homer	"
"	Kevin McNeel	ADFG-Juneau	"
Shortraker rockfish	Jodi Niel	ADFG-Juneau	Age calibration
"	Charles Hutchenson	AFSC	"
Salmon shark	Barbi Failor	ADFG-Homer	Age calibration
	Chris Gburski	AFSC	"

Table 3. CARE age structure exchanges initiated/completed from 2010-2011

Exchange ID No.	Exchange Year	Species	Stock	Originating Agency	Coordinator	Cooperator(s)
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
10-006	2010	Longnose Skate	Gulf of Alaska	AFSC	C. Gburski	CDFO
10-005	2010	Big Skate	Gulf of Alaska	AFSC	C. Gburski	CDFO
10-004	2010	Pacific whiting	US West Coast	CAP/PSMFC	O. Rodriguez	CDFO
10-003	2010	Pacific Ocean Perch	Pacific Northwest Coast	WDFW	S. Rosenfield	CDFO
10-002	2010	Lingcod	Gulf of Alaska	ADFG	K. Munk	ODFW
10-001	2010	Pacific whiting	Pacific Northwest Coast	CDFO	J. Groot	NWFSC