

CARE MEETING MINUTES 11-15 APRIL 2011

AFSC SAND POINT, WA, USA

TRAYNOR ROOM

Monday, 11 April

Sablefish Working Group Mini-Workshop Agenda Appendix 1

Tuesday, 12 April

- I. Call to order** – Shayne MacLellan, (CDFO) CARE Chairperson, called the meeting to order at 8:43 am, April 12, 2011 at the AFSC Sand Point, Seattle, WA facility in the Traynor Room. MacLellan welcomed everyone to the meeting.
- II. Host Statement:** Delsa Anderl (AFSC) welcomes everyone to the Jim Traynor Seminar room on the second floor in Bldg. 4. Anderl went over host information which includes safety/security specifics, building orientation and information on the upcoming social. A photo ID is required to enter the building and the doors accessing the building are locked at 4pm. Also, all laptops must be scanned before being allowed to log onto the AFSC wifi network. There is a cafeteria on site and there will be 1 hour for lunch. The AFSC laboratories are located on the first floor and everyone is welcome to use their imaging system. The social will be held at Beth Matta's (AFSC) house on Wednesday night. Specifics will be given out later.
- III. Introductions:** Attendees went around the room and introduced themselves and stated which agency they worked for. MacLellan states that there is a laptop on the table in the front of the room that is dedicated to update electronically everyone's contact information. MacLellan asks the group to please at sometime during the meeting update their contact info. (Table 1: 2011 CARE Attendee List)
- IV. Approval of 2011 Agenda** – MacLellan states that there will be a change in the order of presentation of Section IX # 4, AFSC imaging system & its uses (Jon Short/Delsa Anderl) from Short (AFSC) being first to Anderl presenting first. The 2011 Agenda is approved first by Barbi Failor (ADFG) and seconded by Lance Campbell (WDFW). (Appendix 2: CARE 2011 Agenda):
- V. Working Group Reports and other Activities Since 2009 CARE Meeting:**
 1. CARE to TSC Reports/Meetings: MacLellan provided the annual 2009 CARE to TSC report & attended the annual TSC meeting in 06-07 May 2010 in Nanaimo. She presented some high points from 2009 CARE report & an update on CARE activities in 2010. Highlights: 7 Working groups active in meeting & 6 (Forum, Website, Charter, Manual, Sablefish Working Group, IOS 2009 CARE poster abstract) planned to be active in the next rotation. She also reported on exchanges and the development of 7 - 2009 CC are recommendations. CARE subsequently assembled & presented a poster on the mission, history, and accomplishments of CARE at the August 2009 International Otolith Symposium in Monterey, CA.

CARE has tasked itself with updating the CARE manual. The Sablefish Working Group would explore the possibility of a meeting in 2010 to review results of the sablefish otolith exchange study. There were no outstanding TSC to CARE recommendations that required action and no outstanding recommendations from CARE to TSC. MacLellan noted that Moss Landing has not sent a representative to the last 2 CARE meetings. With the retirement of Greg Cailliet and Alan Andrews moving on future MLML representation may be in question. Dave Ebert was identified as a new contact for MLML CARE business. Sablefish Working Group utilized a known-age sablefish otolith collection (AFSC) totals~170 individual fish to help develop ageing criteria and 15 were exchanged to test lessons learned. Results indicated that there was a general tendency to underage sablefish by all 4 participating agencies. Steve Ralston (SWFSC, Santa Cruz) proposed that an attempt be made to compile a catalogue across agencies of what exists in archives of ageing materials. These materials could be used to develop additional ageing chronologies. This idea was endorsed by TSC (see TSC to CARE recommendations 2010). MacLellan said that she will be providing a 2010 CARE report with Executive Summary that includes 2011 CARE Workshop activities right after this meeting for the TSC's meeting in Astoria, OR, May 3-4, 2011.

2. CARE Manual: This update was provided by Betty Goetz (AFSC) for Betty Kamikawa (NWFSC) who was unable to attend. Goetz states that the manual committee is comprised of 3 members, Barb Campbell (CDFO) who has been working on a new QA/QC section for the manual and Joan Forsberg (IPHC) who provided a draft of the halibut portion to the manual committee per the recommendations made at the 2009 CARE meeting. Goetz said that the committee could use more than 3 members since this is a lot of work. Also suggested at the 2009 meeting were recommendations that the manual have updated lingcod and rockfish sections. There is discussion by the CARE members as to whether the sections should be rewritten or added to. MacLellan states that the manual is a living document and should be added to. Craig Kastle (AFSC) agrees and says that the manual is used and cited. MacLellan adds that other fish ageing agencies around the world are impressed with CARE and the manual is a large part of that and they use it as a model for themselves. If anyone is interested in joining the committee, please contact Goetz by the end of the workshop.
3. Age Structure Exchanges: This report was provided by Sandy Rosenfield (WDFW). There had been 9 exchanges in 2009 and 3 exchanges in 2010. Per the 2009 CARE meeting, it was suggested that the exchange table be updated by filling in any missing information on historical case invoices and this information be posted on the CARE website. Rosenfield stated that she had updated the information through 2005 and passed the information on to Jon Short (AFSC) to be put on the website. There is still some information missing on invoices before that. Rosenfield also updated agency names on the invoices so they are consistent. She recommends that the new vice chair continue the effort to filling in the historical case invoice information.

4. Charter Committee: This update was provided by MacLellan for Kris Munk (ADFG) who was unable to attend. The new edit log and appendices were added to the Charter. The Charter's CARE web page underwent some changes. The page begins with an intro and now has an index of links to Charter sections to help search the document. MacLellan says she is stepping down and she will need to be replaced. She summarizes what the officer's roles are. Anyone interested should contact MacLellan or Munk.
5. Website: Update provided by Nikki Atkins (NWFSC) and Short. Atkins states that progress is good. Additions to the website include: pdfs of the structure exchange invoices, the CARE charter, and the citation and disclaimer added to the footer. Short adds that 2009 agency production numbers have been added to the website, about ½ are in for 2010 and he hopes to get the remainder updated during the workshop. Short informs the group that there have been some problems loading photos to the Gallery on the website. The outdated system used now is Joomla 1.2 and it will be updated to 1.5.
6. Forum: Atkins states that the forum has been getting a large amount of spam. The spam problem has been rectified but users will have to contact Atkins to get a new account created for them. One new addition is a notification to Forum users when there has been a new post.
7. Sablefish: Presented by MacLellan. The Sablefish Age Readers Ad hoc Working Group formed in 2008 with members from ADFG, CDFO, AFSC & NWFSC. The goals of the group were to 1) document and report current age-reading standards with a comprehensive age structure exchange, 2) calibrate interpretation of sablefish patterns and 3) document and report size differences for up to age-1y (1+[June]) sablefish stocks from south to north. Activities have been ongoing. In 2008 goal 3 was completed. Members supplied known-age 0 & 1 year otoliths to ADFG for length measurement. Prior to the 2009 CARE meeting, goal 1 was completed by a round robin exchange between agencies; each provided 20-24 fish sample. At least 5 otoliths from each sample were imaged & then annotated by all participants for comparison at the 2009 meeting. During the 2009 CARE meeting, goal 2 was achieved with calibration activities during Sablefish Mini-workshop. Measurement results were discussed during the workshop. The group established patterns that were issues and reviewed known-age otoliths but were unable to complete the full agenda. They proposed a known-age exchange to test lessons learned and investigated meeting in 2010 to complete agenda. Post-Care2009 meeting work occurred in the fall when Anderl sent out an AFSC sample (n=15) of known-age otoliths to the other 3 agencies, including digital images of each for annotation. The exchange was completed in 2010 & Delsa summarized the results. The general indication was that all agencies tended to under-age. The CVs calculated for each lab showed that the greatest age differences from known ages were highest with NWFSC (19.42%) followed by ADFG (16.48%), CDFO (11.74%) and AFSC (6.22%). The smaller the CV, the closer the ages are in agreement to known-age. No face-face meeting took place in 2010 as all agencies couldn't get together. Since the group couldn't meet in

2010, they instead organized a 4 hour virtual WebEx meeting in March 2011 to make some focused headway towards completing the 2009 agenda. There were 15 participants from the 4 agencies. Activities included further analytical results for otoliths measured in 2008 & new results for the 2009 exchange were presented and discussed. Also the results of the known-age exchange were reviewed. The WebEx was a great tool that allowed each agency to annotate simultaneously to see how each group was interpreting patterns. However, all agreed that nothing was better than having the actual otolith to manipulate and view under a scope, but this was a good 2nd best. Feedback was solicited from each group for an agenda of day 1 of the CARE workshop in 2011.

VI. CARE & TSC recommendations:

1. **Pre-2009 CARE to CARE status:** In 2006, CARE recommended making changes to the Summary of Age Reading Methods Table. The changes would include a methods table with a validation and publication section. Sonya El Mejjati (ADFG) has been compiling a list of publications and has had over 100 references provided to her. She has passed these along to Short who updated them on the website. There is discussion as of what publications should be on the site, those that are published by CARE members only or publications from outside sources as well. El Mejjati and Short will continue to work on the list and update the website and are expecting comments and suggestions from other CARE members for the next meeting.
2. **2009 CARE to CARE status:** 1: Regards the CARE Forum, use is not high and members are encouraged to check and use the Forum. 2: Regards the focus of the 2011 meeting specifically the discussion of digital imaging. There are many talks planned for later in this meeting. 3: Regards the CARE poster presented by Josie Thompson (ODFW) and Darlene Gillespie (CDFO) at the International Otolith Symposium which took place in 2009 in Monterey, CA. 4: Regards the Charter additions or changes to the website. One last proposed appendix on a precision test statistics remains to be contributed to the appendices section. The Charter committee will investigate. The group then discussed whether or not to add specific information about the working groups to the website. Ideas included naming participants, activities performed as well as past achievements. The group decides to discuss this idea and return to it on Thursday. 5: Regards updating the case inventory invoices which are mostly current for 2006-present, but might need some work for the pre-2006 exchanges. Two new sections have been prepared, the halibut ageing and the QA/QC sections. 6: Regards updates to the manual. MacLellan suggests that committee should review the 2009 recommendation to support or revise. 7: Regards the Sablefish work group which has already been discussed.

2009 CARE to TSC or TSC to CARE: No recommendations were made.

3. **2010 TSC to CARE:** TSC asked CARE members to examine the feasibility of preparing an on-line summary of the material that is archived by each of the west coast groundfish research agencies. MacLellan put together a group to address

this issue and report back on Thursday. In particular, she wants the group to talk about how to list archived samples, how to inventory what each agency has, how to put this information into a data base and how to handle requests for samples from outside the agencies. Volunteers for the group are Kara Hilwig (ADFG), Kastle, Thompson, Short, Patrick McDonald (NWFSC), Rosenfield and Forsberg.

Break

VII. Agency reports

1. ADFG – Update provided by Kara Hilwig who has been working with ADF&G Age determination Unit for 6 months. ADFG has a statewide ageing lab (Age Determination Unit) in Juneau. There are four age readers based in Juneau. Age readers are also based in Homer and in Kodiak. There are 4 agers in Homer, 2 commercial agers and 2 sport agers. The Kodiak lab has 3 agers. The Homer lab aged 7,000 otolith and age skate, lingcod, sablefish and Pollock. Kris Munk has been working on a 5 year Pollock project. ADF&G ADU has constructed a centralized database housing age data, and otolith and somatic measurements.
2. WDFW –Lance Campbell provided this update. He introduced Lisa Hiller (WDFW) and Bob Sizemore (WDFW) both of the shellfish unit. He states that Rosenfield and Jennifer Topping (WDFW) have been working on 30,000 Pacific Ocean Perch structures for an assessment this spring. There was a lingcod otoliths/finray exchange with Thompson. They also attended a Pacific Sardine workshop in 2010 in La Jolla, CA. Campbell continues his work with salmon. There is also a ¾ position in the ageing unit that ages freshwater species.
3. AFSC – Thomas Helser (AFSC) provided the update for his agency. He is the program manager of the ageing unit. There are 11 FTE's in the unit. They are divided into 2 groups, one that ages rockfish and Pollock and the other that ages flatfish, Pollock and sablefish. The unit worked on an age and growth manual that was published by NOAA. The unit provided 40,000 ages for stock assessments. They execute 20% reader checks. They were working on developing new criteria for shortraker and staining skates. They also maintain an image data base. Projects include using a micromill to process otoliths for trace elements. AFSC is working collaboratively on projects regarding yellowfin sole and a halibut chronology.
4. ODFW – Thompson provided her agencies update. She is the only ager for her group. Thompson has aged 4,000 black rockfish otoliths. She worked on couple of projects. One compared otolith weight and age of fish. The results showed a high degree of variability and not a usable technique. Another compared the viability of ageing lingcod otoliths versus lingcod fin-rays. She also moved archived samples to a tsunami free zone but the new location is within the tsunami zone. Work on the database now includes second reads. Thompson aged eulachon.

5. NWFSC– This update was provided by McDonald. Their ageing lab has hired a new employee, Meridith Cavanagh, who was unable to attend the CARE meeting. He said that their lab has aged over 12,000 Sablefish structures. They also work on Hake, Dover Sole, Dark Blotched rockfish, Pacific Ocean Perch and Canary rockfish. They are working on a weight project and have sent out Petrale sole, splitnose, hake and sablefish otoliths to be weighed. He stated that petrale sole otoliths will now be weighed instead of aged. A boccaccio workshop is scheduled for this summer.
6. California/MLML – No report.
7. IPHC – Information provided by Forsberg. She stated that their ageing lab is comprised by 4 readers. They age between 30 and 32 thousand halibut otoliths a year. They use a break and bake method on the otoliths, smaller otoliths are surface aged. They execute a 10% reader check. Those ages that are off by 2 years are resolved by the senior reader. The lab undertook moving over 1 million archived structures offsite, physically checking each sample and entering them into a database. They are working on a radio bomb carbon study. Stronium 88 shows up in annuli but not in the checks. They also had an Atlantic Halibut exchange done by digital imaging on young fish.
8. CDFO – MacLellan provided the update. Her agency has 9 agers. 1 ager retired in December and one retires this fall. MacLellan will be retiring in April of 2013. They are working on reclassifying their technician positions to biologist positions. New species aged include some rockfish. A preliminary project to test otoliths, fins and spines was completed for albacore tuna. In 2009 they participated in the International Otolith Symposium providing a PowerPoint presentation on yelloweye rockfish & a poster on ageing dead geoduck. Her unit ages chum, sockeye and Chinook salmon. They are working on a herring reader drift study. They are also working on a hake ageing manual as well as a geoduck manual. They have also completed and implemented a new fish ageing worksheet. MacLellan stated that their agency published a scale pressing manual for salmon. They continue training new employees, archiving physical samples and have developed standard imaging protocols for future publications, demonstration and training.

VIII. Topics for Discussion/New Business –

1. Symposium/Conferences since CARE 2009 meeting & upcoming. These included an AFS meeting being held in Seattle in the Fall on climate and fish growth changes. Also in Oregon in May is the age and maturity conference for salmon. In early November is the elemental carbon conference in Daytona, Florida. The Western Groundfish conference was held in 2010 in Juneau, Alaska. Last year in Germany the schonogerist conference took place.
2. Is CARE moving away from its mandate? This topic was put forward by Kris Munk for discussion. Since Munk didn't attend the meeting, Hilwig presented this topic. Hilwig read aloud the letter Munk emailed to the CARE members.

She then told the group that Munk thought that the core activities of CARE are directed by TSC and should include the validation and standardization of ageing criteria. Munk feels that the group is moving away from these core activities. Members discussed these ideas but felt that we were not moving away from the core activities and that the hands-on scope work was used for the calibration and standardization of the mandate. MacLellan also reported that the TSC was supportive of current CARE activities.

3. Discussion to assess Forum usefulness & future was lead by Atkins. She starts the discussion by reiterating the events of the past weekend. As of the past Friday, the CARE workshop almost had to be moved to the Halibut Commission building due to a federal shutdown. This would have meant that correspondence between group members would have to take place through a website like the Forum since federal email contacts would be unusable due to the shutdown. Atkins says that she can set up a membership and demo the Forum for CARE members. MacLellan asks if the 3 year trial has been completed. Atkins says that the 3 year trial is over and that she doesn't mind keeping the Forum active since it doesn't take up a lot of her time. MacLellan asks the group if anyone uses the Forum. Rodriguez states that he hasn't used the Forum but it is great if others do. Goetz states that a forum can be great but it has to be active with participation. MacLellan suggests a list of what the forum could do for members. That the forum could be a way to update other CARE members of activities done during the 2 years between CARE meetings. She recommends that Atkins put together suggestions for Thursday's meeting.
4. Non-Agenda items - none

Lunch

IX. Scientific PowerPoint Presentations

1. **New CDFO groundfish age data sheet evolution** was provided by MacLellan. She states that there were 4 reasons for creating a new sheet. These included a request by the groundfish section to provide a more keypunch friendly age data sheet. The SCL strategic plan included a move to direct electronic input of age data by readers. MacLellan then negotiated compromise towards both objectives and to produce a sheet that was easier to keypunch and collected all readings including precision. MacLellan went on to outline their age designation system and their table for confidence assignments. She projected a copy of their old groundfish age data sheet and highlighted the description of edge growth section and the confidence index column. The new groundfish age data sheet includes columns for flagged fish, crystallized otoliths, test results and an expanded age class column which has min and max ages and an edge growth column. At the bottom of the sheet is an explanation for the edge growth codes. MacLellan continued the presentation by outlining some recording and resolution rules. For working columns, rare cases of age ranges (e.g. 7-15) record U1 (unresolved 1 type) in the age class columns of both the working and final columns. For rare cases of "or" ages (e.g. 7 or 9) record U2 (unresolved 2 type) in the age class

columns. Rules for resolving multiple readings data include the following: the last reader makes the final decision as to what goes into the final age columns based on all the data presented in one row, when the 1st reader and the tester agree on age class the age class will be entered into the final age column and then choose the min and max of the agreed age that are most certain and min may be used from one reading and max from another. When the first reader and the tester disagree on age class if the tester agrees with self on 3rd try they would return to 1st reader to resolve. If there is no agreement after 4 tries, the last reader makes the decision on which age to put into the final column. Results included that the pilot was deemed successful by the end of summer 2010 and that new sheets should be used for all groundfish species.

2. **Preliminary age validation of Pacific cod using stable oxygen isotopes** presentation was delivered by Kastle. The theory behind this approach of age determination is that if O18 is measured continuously across an otolith at high enough resolution spanning the fish's life, a seasonal cycle should be apparent. The goal would be to validate annual nature of translucent zones. Methods included a sample size of 10; otoliths were thin sectioned and aged using established criteria of visual band counting. Kastle then outlined the micro-milling process. Results showed that 7 specimens showed seasonal cycles and 3 did not and that the relationship of O18 to temperature is strong. Future work includes refining the milling for O18 measurements and processing more specimens.
3. **The digital reference collection via Photoshop** was presented by (Steve Wischniowski (IPHC)). He outlined some advantages and disadvantages of creating a digital reference set. Advantages included alleviating the potential for physical damage to structures or mixing up structures which could occur when taking them in and out of storage for reading. Also the ability to have each reader annotate the image so that what each reader marked as an annulus can be compared, not just the final total annulus count. Disadvantages included the initial time investment is high as well as the high cost to purchase a high resolution camera and imaging software. He went on to outline how IPHC selects otolith for imaging, how to ready the specimens for imaging and the methods used for capturing the image of the otoliths. Wischniowski then showed the group how to use Photoshop to create images.
4. **AFSC imaging system & its uses** was presented by Delsa Anderl and Jon Short. Anderl's presentation was titled "**Use of Imaging Technology in Age and Growth.**" She outlined the addressed advantages for having imaging to include having reference collections, documentation of otolith exchanges, between reader ageing and ageing methodology which would address first year growth, edge types, oldest fish and unusual growth patterns. Anderl discussed the different file formats for imaging which included .jpg, .tiff, .psd and .png. She also explained the importance of resolution when it pertains to printing. Anderl then walked the group through how to specifically create an image library which included how to name the image, how to standardize the images in the library

and how to standardize the magnification for each methodology for each species. She discussed how to take the image, how to edit the image and how to annotate the image using layers. Anderl concluded her presentation by adding a few useful tips on imaging and some useful hot keys in CS and PSE.

5. **AFSC Age and Growth Imaging Database** was presented by Short. He first outlined that AFSC had approximately 300GB of images in JPG, TIF and PSD files. He addressed the requirements of the software and that it had to be user friendly, scriptable, support JPG, TIF and PSD formats and have a reasonable cost. He said that the digital asset management software used is Portfolio by Extensis which includes Standalone client 8.5 and Server-client/web client 9. Short explained the 4 steps of image workflow to include the capture of the images, entering of the metadata, migration of the script and the completed archive. He discussed the specific information captured on the image metadata and how it transferred into the Portfolio Standalone Client software.
6. **Digital camera & AFSC new micromill** presented by Craig Kastle. He outlined the procedures on how to use the micromill that AFSC has recently acquired. His presentation provided images that he discussed which showed how the micromilling process is used to prep otolith for chemical analysis.

X. Workshop Focus – Digital Imaging Topics for Discussion included the software used for editing, tagging, metadata and archiving of images as well as the hardware used and image taking protocols. SR begins the discussion by asking the group what they want to get out of the imaging portion of the workshop. Elisa Russ (ADFG) states that her agency is just beginning to image structures and she received a lot of useful information from the talks. Thompson stated that her agency uses Image Pro Plus but wonders if they should get Photoshop. Wischniowski asks the group if we should standardize images between agencies? MacLellan agrees that we should especially for exchanges. Hilwig was intrigued by having an image training reference set. That the images wouldn't deteriorate like physical samples do. Anderl agrees that images are good but the otolith can give you a different age. The general consensus of the group is that images are good especially for exchanges since the annuli can be annotated and used for discussion between agers. Members discuss the different media that are used for photographing the otolith. Thompson asks the group if we should standardize the method for using images for exchanges. MacLellan makes a recommendation that Photoshop be used for exchanges within the group. There is discussion about how much of a collection should be stored as images. MacLellan suggested that those otoliths that are going to be destroyed should be stored as an image. L. Campbell reiterates this idea because sometimes all otoliths are used when ageing and there is no useful age information left. MacLellan states that images should not be used for production ageing but rather for smaller reference collections or a specific study. Rodriguez states that you can get Photoshop for about \$10 dollars, Goetz states that she uses Photoshop. Thompson and Russ state that they don't have Photoshop. Rosenfield questions whether agencies that don't have Photoshop will be able to participate in CARE exchanges. Anderl states yes, that they have used slides generated by PowerPoint for exchanges and passed these images

onto different agencies for ageing. Agencies marked annuli on the slides and the images were returned to Anderl for analysis. B. Campbell asks what members use for multi layer focusing. Short answered Image Pro. Anderl adds that she will be providing a presentation tomorrow (April 13th) and a signup sheet will be circulating the room.

Break

XI. Working groups & Hands- On Workshop

1. Working Groups are directed to meet, discuss and formulate written recommendations throughout rest of workshop in preparation for Thursday morning's meeting and to provide hard and digital copies of recommendations to the Chair.
2. Hands-on Workshop: Sign up for scope station space and time. Started on scope work.

Wednesday, 13 April

XII. Hands-On Workshop

1. Hands on scope work conducted on various species in the Traynor Room as well as the AFSC laboratories located on the first floor. There were 27 species examined including Sablefish, Skate, Pacific Ocean Perch, dogfish and other miscellaneous species. Scope time was documented in Attachment 4.

XIII. Demonstrations: There were 4 demonstrations for members to sign up for. These included a Forum demonstration by Atkins that no one participated in but Atkins answered many questions outside of an organized demonstration. Also, Anderl provided a demonstration to 10 CARE members on AFSC's use of hardware and software for imaging. Kastle presented the demonstration on AFSC's new micro-mill and the hardware and software used to operate the mill. 9 members were in attendance. Six members attended Chris Gburski's (AFSC) and Beth Matta's (AFSC) demonstration on staining vertebrae. The stained thin-section technique was applied to big skate, longnose skate and Alaska skate. They described how to remove thin sections from whole vertebrae. Thin sections were decalcified, stained, destained, soaked in glycerin and mounted on slides. These specimens were compared under a microscope.

Thursday, 14 April

XIV. Concluding CARE Business

1. **Recommendations CARE to CARE 2011**
 - 1.1. 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 update 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 Chair Betty 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 final review and addition to the manual by the end of 2011.

- 1.2. Forum Working Group- We recommend that the Forum continue for another cycle.
- 1.3. Website Working Group- The CARE Website Committee 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. Update should be completed as time allows before the CARE 2013 meeting.
- 1.4. Recommendation to CARE members to review the method and validation species information on the species info website page to assess how current their information is and report updates or changes to Jon Short by the end of April, 2011. Reintroduce into the biennial meeting agenda that each agency updates this information.
- 1.5. CARE recommends that the effect of long term storage of otoliths and other age structures be a topic on the CARE 2013 agenda. Discussion has been ongoing by members of the effects on otoliths being stored in glycerin.

CARE reply to TSC Recommendations 2010 - 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. **Other activities finalized**

- Russ was the winner of the geoduck ageing contest.
- MacLellan announced she would send CARE participant information out the following week.

- Charter- Goetz and MacLellan would connect with Munk to recommend that a formerly proposed Charter Appendix D “Precision Test Statistics and Formulation” might be better included in the QA/QC section of the CARE manual and someone be found to write it up.
3. **Administration nominations-** New officers will begin their duties on July 1st, 2011 and will continue for 2 years. Sandra Rosenfield will be the CARE Chair, Elisa Russ will be the CARE Vice-chair, and Chris Gburski will be the secretary.
 4. **Schedule and location of 2013** meeting is determined to be the AFSC Sand Point Facility in Seattle, WA.
 5. **Closing –adjourn -** Comments include thanking Anderl and the other AFSC employees for hosting the 2011 CARE meeting.

XV. Continue hands-on & demonstrations- The Sablefish Working Group continued work establishing criteria and documentation. Gburski had a demonstration on hematoxylin staining techniques. Beth Matta from the Age and Growth Program demonstrated a new histological preparation method for skate vertebrae on Thursday, April 14, 2011 for 2 hours at the AFSC. A total of 6 CARE attendees participated including Barbi Failor (ADFG), Andrew Pollak (ADFG), Elisa Russ (ADFG), Omar Rodriguez (NWFSC), Josie Thompson (NWFSC) and David Wells (SWFSC). The stained-thin-section method was applied to big skate, *Raja binoculata*, longnose skate, *Raja rhina*, and Alaska skate, *Bathyraja parmifera*. Vertebral thin section removal from whole vertebrae was described with two sectioning devices using either a low speed saw or a linear precision saw. Thin sections were decalcified with a rapid decalcifier (RDO), stained with Harris hematoxylin, destained with acid alcohol solution, soaked in glycerin, and slide mounted. Both untreated and stained thin sections were examined under a dissecting microscope for comparing preparations. The application of this staining method to other elasmobranchs was discussed.

Appendix 1: C.A.R.E. Sablefish Working Group Mini-workshop DRAFT Agenda

9am – 5pm, Monday, 11 April 2011

1. **Introductions** to any new members of group.
2. Quick review of **WebEx** meeting [9-9:15 am] to set the stage.
3. Sketch out an **outline for documentation**. Decide on end product format. [9:15-9:30am]
4. **Review** identified issues & **document** (secretary needed) as we go along with examples of known-age/not whole & imaged otoliths. Chose images for figures.
 - 1) Confirm/identify issues.
 - 2) Define boundaries & limitations of criteria & how they are applied.
 - 3) Establish standards to encourage consistency between agencies. [9:30am-4:30pm with lunch break]

Suggested issues:

- a. Burning technique – is this an issue?
 - i. Discussion
 - ii. Recommendations/actions
- b. Identifying annuli vs checks
 - i. Juvenile years
 1. Whole surface
 2. $\frac{3}{4}$ view burnt XS's
 3. Counting axes
 - ii. Transition years (age ~3-10)
 1. Fast/slow-growing patterns
 2. Grouping/splitting
 3. Compressed zones (over/under-bite, sulcus wedges, dark zones)
 4. Counting axes
 - iii. Mature years
 1. Grouping/splitting
 2. Compressed zones (dark zones, etc)
 3. Counting axes
 - iv. Edge
 1. Time of year caught
 2. Counting axes
5. **Wrap up** (recommendations/further action) [4:30-5pm]

Table 1: 2011 CARE Attendee List

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

Appendix 2: 2011 CARE Agenda

C.A.R.E. Agenda

(Committee of Age Reading Experts)

Canada-US Groundfish Committee

11-15 April 2011

AFSC, Sand Point, Seattle, WA, USA

Traynor Room

Monday, 11 April [9am-5pm]

Sablefish working group Mini-workshop agenda (to be determined)

Tuesday, 12 April

I. Call to Order [8:30 am] – CARE Chair (Shayne MacLellan)

II. Host Statement

1. Welcome statements & host info: safety/security orientation, refreshments, social, etc (Thomas Helser)

III. Introductions

1. Round-table intros (name, agency, location)
2. Attendance, address, phone, email sheet – electronic on dedicated laptop

IV. Approval of 2011 Agenda

V. Working Group Reports [9 -9:30 am] Activity since CARE 2009 (5 min each).

1. TSC Meeting 2010 and 2009 & 2010 CARE reports (Shayne MacLellan)
2. CARE Manual (Betty Kamikawa)
3. Age Structure Exchanges (Sandy Rosenfield)
4. Charter Committee (Kris Munk)
5. Website (Jon Short)
6. Forum (Nikki Atkins)

VI. CARE & TSC recommendations: [9:30 – 10 am]

1. Pre-2009 CARE to CARE status
2. 2009 CARE to CARE status.
3. 2010 TSC to CARE
4. New for CARE 2011? Craft through out meeting for Thurs am.

---Break --- 10 – 10:15 am ---

VII. Agency reports [10:15-10:45 am] (~3 min each) – No PowerPoints please - brief update (staffing, organizational, new species/projects etc.).

1. ADFG – (Kris Munk summarize all sites)
2. WDFW – (Lance Campbell)
3. AFSC – (Thomas Helser)
4. ODFW – (Josie Thompson)
5. NWFSC-PSMFC (Patrick McDonald)
6. California/MLML – (?)
7. IPHC (Joan Forsberg)
8. CDFO (Darlene Gillespie)

VIII. Topics for Discussion/New Business [10:45 – 11:30am]

1. Symposia/Conferences since CARE 2009 meeting & upcoming 10 min
2. Is CARE moving away from its mandate? (Kris Munk) 15 min
3. Discussion to assess Forum usefulness & future (Nikki Atkins) 15 min
4. Non-agenda items?

--- Lunch --- 11:30am -12:30 p.m. ---

IX. Scientific PowerPoint Presentations [12:30 -1:45pm]

1. New CDFO groundfish age data sheet (Shayne MacLellan) 10 min
2. Preliminary age validation of Pacific cod using stable oxygen isotopes (Craig Kestelle) 15 min
3. Digital reference collections via Photoshop (Steve Wischniowski) 15 min
4. AFSC imaging system & its uses (Jon Short/Delsa Anderl) 15 min
5. Digital camera & AFSC new micromill (Craig Kestelle) 5 min

X. Workshop Focus - Digital Imaging Topics for Discussion: [1:45 - 3:00pm]

1. Software – editing, tagging, metadata, archiving
2. Hardware
3. Image taking protocols

---Break --- 3:00 – 3:15pm ---

XI. Working groups & Hands-On Workshop [3:00 – 5:00pm]

1. Working Groups: Meet, discuss & formulate written recommendations through out rest of workshop. Prepare for Thursday morning & provide hard & digital copy to Chair.
2. Hands-On Workshop: Sign up for scope station space & time. Start on scope work.

Wednesday, 13 April

XII. Hands-On Workshop [9 am – 5 pm]

1. Hands on scope work

- a. Elasmobranch focus group
- b. All other species
- c. Sablefish working group?

XIII. Demonstrations: [see posted times at meeting]

1. Leica camera demo (Leica rep)
2. AFSC camera demo (Delsa Anderl)
3. Micromill demos (Craig Kastle)
4. Forum demo (Nikki Atkins)

Thursday, 14 April

XIV. Concluding CARE business [9 – 10:30 am]

1. Recommendations 2011
2. Other activities finalization
3. Administration nominations
4. Schedule and location of 2013 Meeting
5. Closing - adjourn

XV. Continue hands-on & demonstrations [rest of day as needed]

1. Hematoxylin staining technique (Chris Gburski) 2 hrs

Table 2: 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/Longnoes 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	"

Species	Participants	Agencies	Comments
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	"
"	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	"
Yelloweye rockfish	Kara Hilwig	ADFG-Juneau	Age calibration
"	Kevin McNeel	ADFG-Juneau	"
"	Elisa Russ	ADFG-Homer	"
"	Andrew Pollak	ADFG-Homer	"

Species	Participants	Agencies	Comments
Sablefish	Patrick McDonald	NWFSC	Age calibration
"	Meredith Cavanagh	NWFSC	"
"	Delsa Anderl	AFSC	"
"	Lisa Kautzi	AFSC	"
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	"
"	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	"