Protocols to Facilitate Exchange of Data Among

the NPAFC Working Group on Salmon Marking

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Abstract
Otolith marking is an important tool used to determine the origin of hatchery-raised free-ranging salmon recovered from high seas and coastal waters. The number of otolith-marked salmon released from hatcheries in NPAFC countries has increased annually since 1994. The NPAFC Working Group on Salmon Marking has developed an Internet accessible otolith mark database available through an internal server housed at the Mark, Tag, and Age Laboratory, Alaska Department of Fish and Game, Juneau, Alaska (http://npafc.taglab.org/). This paper seeks to increase compatibility between the Microsoft Excel spreadsheets submitted by the member countries and the Microsoft Access database accessed by the website and managed by Alaska Department of Fish and Game for the NPAFC Working Group on Salmon Marking.

Introduction
For the Working Group on Salmon Marking, the United States Party developed a Microsoft Access database in cooperation with the Alaska Department of Fish and Game. The website currently is housed on a server based at the Mark, Tag, and Age Laboratory, Alaska Department of Fish and Game, Juneau, Alaska and accessed by http://npafc.taglab.org/

Currently, each member country submits a Microsoft Excel spreadsheet of their otolith marks and associated data (e.g. release sites, release numbers, etc.) to the Japanese Party, who maintains this spreadsheet. We combined these five spreadsheets into one Microsoft Access database. To do this, we made some formatting changes to the existing data. Each year, we only add new data contributed by a country. Consequently, if a member country makes a change to older data, it will be not become part of the internet accessible database unless they also inform us of the changes. It is imperative that changes be highlighted in the Microsoft Excel spreadsheets with a color (preferably blue) and that the member country sends us an email detailing the change. It would be helpful if the formatting changes made last year were incorporated into the spreadsheets. We are trying to keep the database up-to-date and consistent among years, so it is important that members of the Working Group use the same terminology and formatting among years for each of the spreadsheet's categories.

The following list details changes made to the organization of the database. Most of these changes involved the addition of columns and alterations to some column headings due to restrictions within Microsoft Access.

1) We removed the numbers column (NO), use the ID column only.
2) Mark Type was divided into four columns
   a. Mark Type –use two letter codes listed in all capitals.

TM – thermal mark
DM – dry mark
SR – strontium mark
ALC - alizarin chloride
   b. CWT – coded wire tagged (Yes for yes, no – leave column blank)
   c. AD – adipose clipped (Yes for yes, no – leave column blank)
   d. LV – left ventral (Yes for yes, no – leave column blank)
3) Changed name of Year Brood column to Yr Brood
4) Changed name of Year Released column to Yr Released
5) Changed name of State/Province column to State Province (Access does not like "/")
6) Changed name of Weight (g) column to Wt to save space
7) Changed name of RBR column to RBr
8) Changed name of HATCH CODE column to Hatch Code
9) Changed name of digital photo image column to Digital Photo Image
10) Added a column for 2nd Digital Image

This year, we searched the entire Access database for inconsistencies in text and other data formatting problems. After ensuring the text was uniform throughout the database, we highlighted any formatting problems in the worksheets and prepared a document detailing changes that would make those data more compatible with the website. We hope that the Working Group members will be able to make these changes and return them to us. Again we request that changes in the Excel spreadsheets be highlight in blue, so that we know a change has been made and we can correct it in the Access database.

We also stress the importance of the following formatting changes – they will help make the database more consistent and accurate. The queries will not work properly unless names are always spelled the same. Inconsistencies make it difficult to query the database properly, causing them to provide incomplete and inaccurate results. Because the users only have access through the website limiting what the users see, it is important for us to make the database as consistent as possible. If each member could make these changes to their own spreadsheets, it would greatly reduce the time we spend correcting new data before it can be added to the database connected to the website. Because we are unfamiliar with the data, we often do not know whether a change is incorrect. We recommend that the following formatting changes be used by the Working Group on Salmon Marking:

1) Hatch Code is one of the items used on the website to search the database. For this reason, hatch codes need to be very consistent and have no extra punctuation. We respectfully request that only the use of commas (,) between bands. Some parties have used dashes to indicate a wider distance, but if someone queries the database for a 2,3H otolith, they might not think to look for a 2-3H fish. Therefore, it is best to simply call the fish 2,3H and the person can sort through the possibilities and view the digital images. We recommend that dashes (-), plus signs (+), brackets [ ] ({ }), etc. be omitted from the hatch codes. These characters may continue to be used in the RBr code, but we would like to receive an explanation of what each member country uses such notation to indicate. It appears that these items of punctuation may be used differently by different countries.

2) Species should be in written in upper case (capital) letters: CHUM, PINK, etc.
3) Use upper and lower case for all other columns. It saves space on the website. Some examples include: Country, Region Released, etc.
4) Spell out Country, State, Province, etc. No abbreviations.
5) Spell out Region Released. No abbreviations.
6) Provide the date of last release, not a range of days.
7) Format date information to month/day/year (e.g. "3/21/2003").

Digital images

We have discussed the need to set a format for the digital images posted on the website to make them more compatible and consistent.

1) Please use an image size of 480 x 640.
2) If at all possible, label each image with the mark code (Hatch Code or RBr) and include any comments about the mark.
3) Include a scale. Knowing the scale of the photograph allows us to measure the distance from the primordia to the mark, etc., in order to generate mark characteristics that would help distinguish among redundant mark groups
4) It is important that the picture include the primordia for reference purposes.

We appreciate the Working Group's continued willingness to make changes to accommodate the needs of the website. Our lab has certainly found the website quite useful.