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Tagging procedure in SIOFA & the French EEZ of Kerguelen and Crozet: tools and ideas to improve the process

Delegation of France Overseas Territories

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Abstract

This document presents tools used by French fishery observers in the SIOFA area to improve tagging procedure including the statistical overlap calculation, data quality, hygiene, photos of recaptures renamed through a naming convention.

[1] Restricted documents may contain confidential information. Please do not distribute restricted documents in any form without the explicit permission of the SIOFA Secretariat and the data owner(s)/provider(s).
[2] Documents available only to members invited to closed sessions.

Recommendations

- SC **encourages** members to ask observers to take pictures of recaptures and submit them to SIOFA's secretariat
- SC **encourages** members to use a common naming convention to rename pictures (through PINTag for example)
- Secretariat **provides** an overlap calculator taking into account the non-randomly chosen fish
- That the project of observer manual takes into account the hygiene chapters used in the French fishery

Tagging procedure in SIOFA & the French EEZ of Kerguelen and Crozet: tools and ideas to improve the process

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The tools on tagging procedure proposed in this paper are already used by the observers on-board FR-OT vessels fishing Patagonian toothfish (*Dissostichus eleginoides*) in the French EEZ of Kerguelen and Crozet and in SIOFA area.

It is important to note that on French vessels:

- Observers are responsible for tagging, the crew helps with the provision of fish at the size targeted by the observers
- Overlap statistic must be > 60 % at all time and ideally >80%

TRAINING

UNDERSTANDING OVERLAP

A dynamic tool is used to teach observers how statistic overlap works (Figure 1).

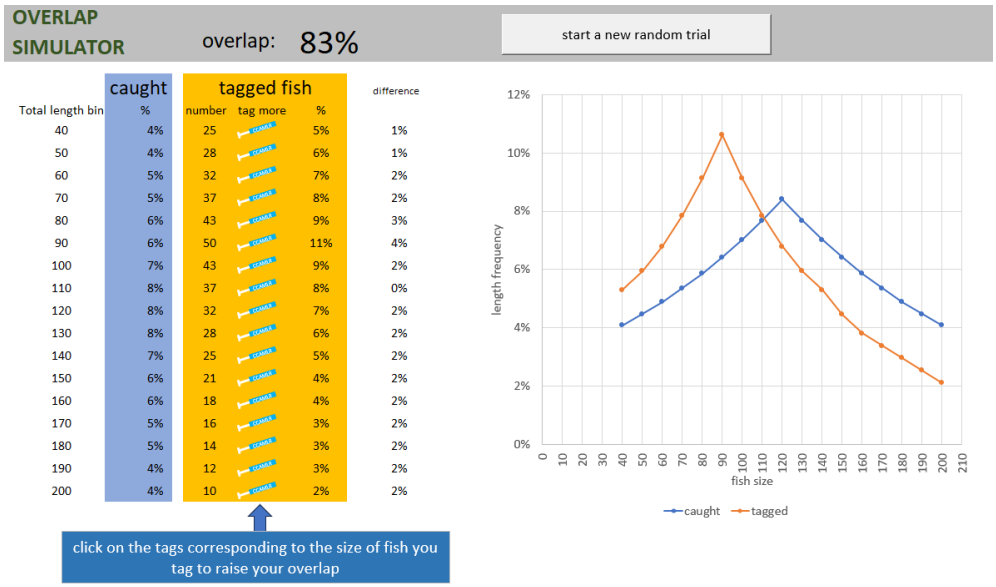

Figure 1: overlap simulator screenshot

Users can click on the blue tags to visualise how the overlap changes. The length frequency distribution of the catch also changes through time when new fish are tagged.

This tool is made available here
https://figshare.com/articles/software/statistic_overlap_simulator_for_tagging/28350437?file=52144667

DATA

MONITORING THE OVERLAP

We have developed a dashboard for observers to visualise the tagging rate and the overlap directly from the data entered in their logbook (Figure 2). The overlap details are provided for each size bin along with an advice on the size to target for the next 10 fish to tag. Observers use this tool on a daily basis to organize the next tagging session.

On top of this, the Museum monitors these values at distance on a weekly basis for each vessel.

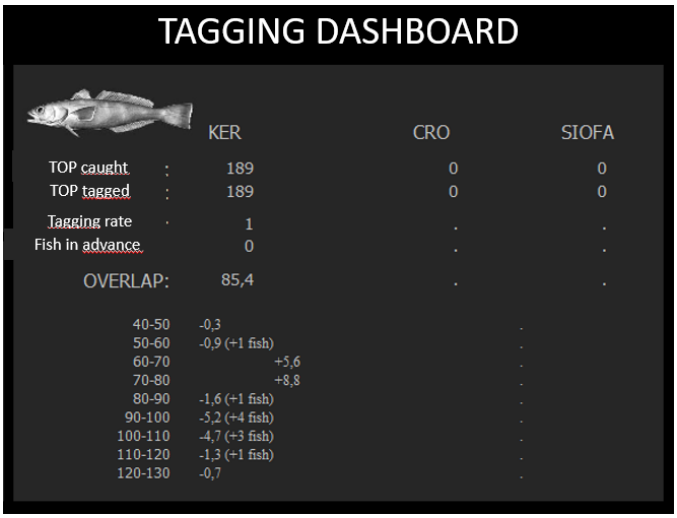

Figure 2: tagging dashboard screenshot

PRINTING LABELS FOR RECAPTURES

To save time, we provide observers with label printers, they can print all the information from recaptures from their logbook and stick the label on the envelope with tags and otoliths (Figure 3).

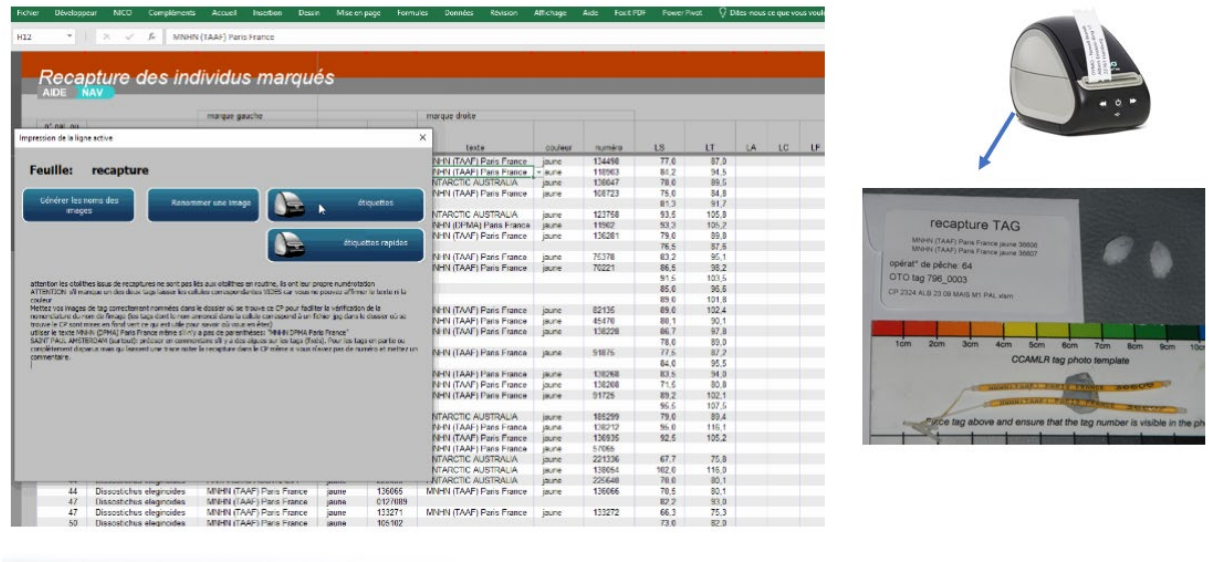

Figure 3: printing labels example

RENAMING PICTURES OF RECAPTURES

All recaptures are photographed to facilitate double checking and to archive the information in case the physical tags are lost. We use a naming convention (shared with other members of CCAMLR) to rename files.

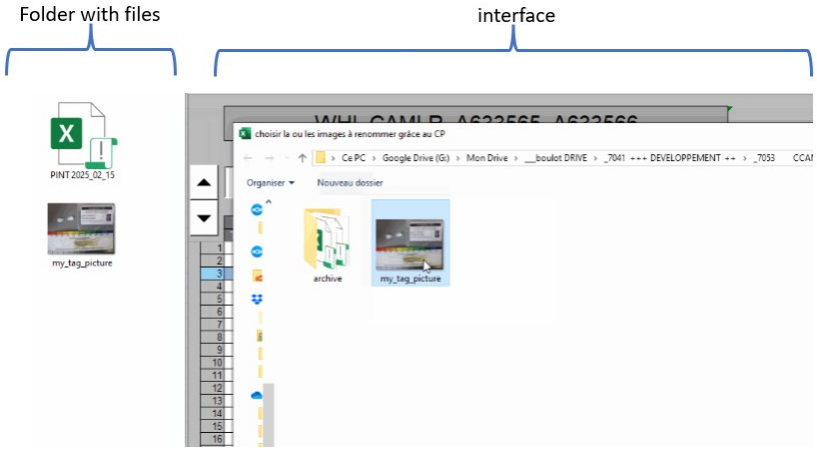

Figure 4: PINTag tool screenshot

This tool (PINTag for Picture reNaming Tool for tags) (Figure 4) is made available here: https://figshare.com/articles/software/PINTag/28334705?file=52104500

DATA CHECKING

AT SEA

Our checking tool is based on a table containing all the checking items (Figure 5). This table is read by a script and flags the data when discrepancies are detected. Each checking item has 1 to 5 conditions. This tool is provided to observers at sea so they can check the data on a routine basis.

checking		condition 1	condition 2	condition 3	condition 4	condition 5
RECAPTURE	26	recapture_tag1_tag_colour =	recapture_tag1_tag_wording <>			
RECAPTURE	27	recapture_tag1_tag_colour =	recapture_tag1_tag_number <>			
RECAPTURE	28	recapture_tag2_tag_colour =	recapture_tag2_tag_wording <>			
RECAPTURE	29	recapture_tag2_tag_colour =	recapture_tag2_tag_number <>			
RECAPTURE	30	recapture_tag1_tag_n	recapture_tag1_tag_c			

39 checking items for the recapture table

checking		condition 1	condition 2	condition 3	condition 4	condition 5
TAGGING	21	tagging_haul_number > 0	tagging_tag1_number =			
TAGGING	22	tagging_haul_number > 0	tagging_greenweight =			
TAGGING	23	tagging_haul_number > 0	CAL_tagging_tag1_number_appears > 1			
TAGGING	24	tagging_haul_number > 0	CAL_tagging_tag2_number_appears > 1			
TAGGING	25	tagging_tag1_wording	tagging_tag1_color =			

55 checking items for the tagging table

Figure 5: checking tool screenshot

AFTER THE TRIP

An add-in reads the logbook's table for recaptures and opens the picture automatically (Figure 6).

The user can visually check that the number, color and wording match the data reported by the observer.

With this tool it is a lot easier and it takes a few minutes to go through all the recaptures of the logbook. This is possible because we use a naming convention for the tag recapture's images.

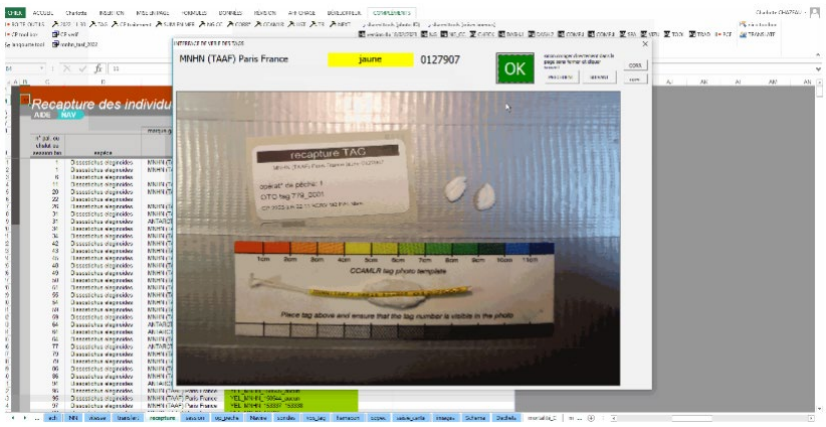

Figure 6: recaptures pictures checking tool

OTHER TRAINING MATERIAL

HYGIENE

THE TAGGING GUN

A manual with comprehensive instructions is provided to observers to maintain the gear in good shape (Figure 7).

Figure 7: manual screenshot for the tagging gun

FACTORY SET UP

Instructions are also provided to observers regarding their set up at the factory (Figure 8).

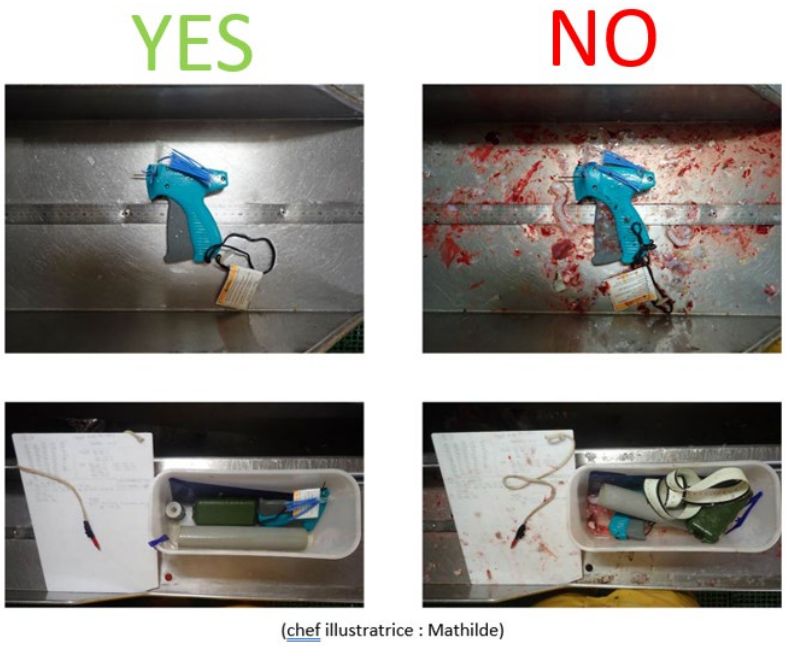

Figure 8: manual screenshot for set up

NEEDLES

A cleaning kit for needles is provided and helps maintaining good hygiene of the tagging procedure (Figure 9).

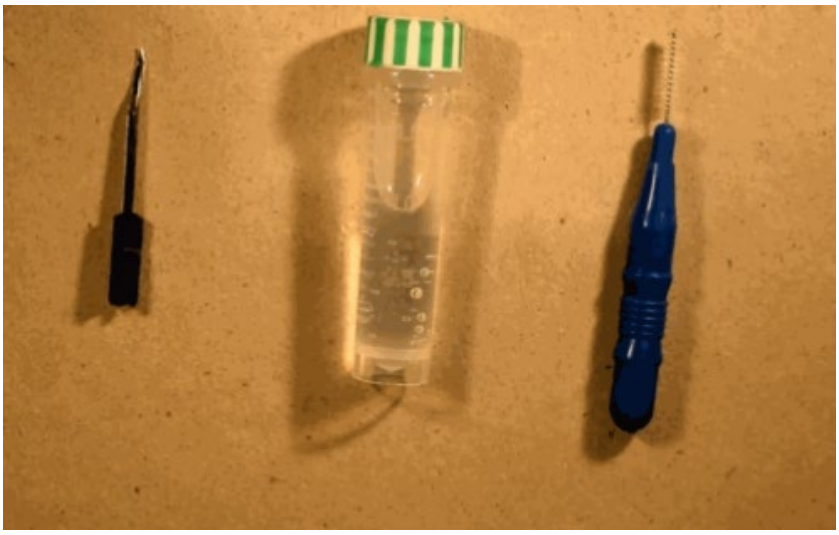

Figure 9: needle cleaning kit