Appendix C: Survey distributed to photo-ID researchers to gain insights into the photo-ID methods they are currently using when comparing dorsal fin images (e.g., manual methods versus computer assisted or computer vision methods).

Survey of Photo-ID Methods for Matching Dorsal Fins

We invite you to participate in our survey of the methods used to conduct matching of dorsal fin images for photo-identification studies. We are interested in compiling information on the different methods used, and the pros and cons associated with each of these methods. Recently, several automated algorithms have been developed to identify cetacean dorsal fins and improve the efficiency of the matching process. However, there has been little discussion amongst users regarding the efficacy or accuracy of these systems. With your help, we hope to start this discussion, and to develop best practices for moving forward with automated dorsal fin matching systems in our community.

We will present the results of this survey during a workshop we are hosting, "Rise of the machines - Application of automated systems for matching dolphin dorsal fins: current status and future directions" at the World Marine Mammal Conference in Barcelona. The full-day workshop will be held on Sunday December 8. Information about the workshop can be found here:

https://tinyurl.com/y2vrb2c4

The focus of the workshop is to bring together photo-ID researchers and algorithm developers to discuss best practices for using fin recognition technology, and to assess whether a single 'standard' system can be developed for automated dorsal fin photo-ID.

We hope that you will participate in our survey! We request that you complete the survey by October 4, 2019.

The Workshop Organizers

Reny Tyson Moore (Chicago Zoological Society's Sarasota Dolphin Research Program, Sarasota, FL USA) rtysonmoore@mote.org

Kim Urian (Duke University Marine Laboratory, Beaufort, NC USA) kim.urian@gmail.com

1.   What species is/are the focus of your photo-ID research?

_____

2.   How large is your catalog (i.e., how many distinct individuals)?

_____

_____

_____

_____

3.   How do you match images for dorsal fin photo-identification studies?

Mark only one oval.

( ) Manually

( ) User-defined attribute based system

( ) Computer vision (i.e., computer-assisted ranking system that uses a neural network, machine learning, etc.)

( ) A combination of the aforementioned methods

( ) Other: _____

4.   Please list any computer vision systems for matching dorsal fin images that you have heard of.

_____

_____

_____

_____

_____

5.   If you use a computer vision system for matching dorsal fin images, which system do you use?

_____

_____

_____

_____

_____

6.   If you do not use a computer vision system for matching dorsal fin images please explain why.
      (Select all that apply)

Check all that apply.

[ ] I am not familiar with computer vision systems for matching dorsal fin images

[ ] I am familiar with computer vision systems, but have not tried to use them yet I

[ ] don't trust that a computer vision system performs as well as a human

[ ] My catalog is small, so manual comparisons are just as (or almost) as fast as those achieved with computer vision

Other: [ ] _____

7.   Do you have a system for ranking or grading the quality of your images?

Mark only one oval.

( ) Yes

( ) No

8.   Do you have a system for evaluating distinctiveness of a fin or individual?

Mark only one oval.

( ) Yes

( ) No

9.   Do you crop your images before matching?

Mark only one oval.

( ) Yes, we manually crop our images

( ) Yes, we use computer vision to assist with cropping

( ) No

( ) Other: _____

10.   How do you manage metadata associated with your photo-id images? (Select all that apply)

Check all that apply.

[ ] A stand-alone data management system (e.g., Microsoft Access, SQL, Excel)

[ ] An image management software program (e.g., ACDSee, Adobe Lightroom, digiKam)

[ ] An independent cloud based data management system (e.g., Google Drive)

[ ] An integrated cloud based computer vision and data management system (e.g., Flukebook, Wildbook)

Other: [ ] _____

11.   Please provide the name of this system(s) or program(s)

_____

_____

_____

_____

_____

12. How long (on average) do you estimate that it takes you/your lab to confirm that an animal is not in the catalog and that it should be considered a NEW individual? (i.e., how long does it take you to do a full catalog search?)

_____

_____

_____

_____

_____

13. Are you willing to participate in additional questionnaires about your photo-ID methods?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

14. Are you willing to participate in a test to evaluate the performance of different photo-ID matching systems?

Mark only one oval.

( ) Yes

( ) No

( ) Maybe

15. Please provide your contact information so we may contact you in regards to the possibility of participating in future questionnaires or tests related to photo-id with dorsal fins. Name:

_____

16. Affiliation:

_____

17. Email Address:

_____

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