REPORT

Meeting Report for the 1st Photo ID Workshop, 36th Annual Symposium on Sea Turtle Biology and Conservation, Lima, Peru, 29 February 2016

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At the 36th Annual International Sea Turtle Symposium on Conservation and Biology (ISTS) held in Lima, Peru between 29 February - 4 March 2016, the first sea turtle photo-ID (PID) workshop associated with the ISTS was held on Monday, 29 February at the Universidad Científica del Sur. There were 41 participants in the workshop, which was organized by Stephen G. Dunbar (workshop Chair), assisted by Jillian Hudgins and Claire Jean.

The workshop ran from 10:00 AM - 4:45 PM, with the Chair welcoming participants, thanking the workshop sponsors, and opening the session with comments on the history of sea turtle PID, which, according to George Balazs (pers. comm.), likely started with the work of Peter Bennett & Ursula Keuper-Bennett in the mid-1990s (Richardson *et al.* 2000). Workshop presentations followed from Jillian Hudgins, Stephen G. Dunbar, Claire Jean, Konstantinos Papafitsoros, Andy Estrada & Jess Williams, who all presented aspects of how PID was being used in their respective sea turtle research projects. Workshop presentations recognized the growing body of sea turtle PID literature (Schofield *et al.* 2004; Schofield *et al.* 2008; Jean *et al.* 2010; Lloyd *et al.* 2012; Dunbar *et al.* 2014; Valdés *et al.* 2014; Dunbar & Ito 2015; Carpentier *et al.* 2016) that is helping to bring PID methods to the attention of the sea turtle research community as a valid way of monitoring populations over long periods of time. Common themes that came out of the presentations were: the requirement for high quality images repeatedly taken from approximately the same angles and distances; the need to manipulate all photos with spots, lines, or polygons; the lack of analytical power within current PID programs; the need for meta-data handling within PID systems; the lack of connectivity between current PID programs which limits turtle identifications across platforms; and how to engage the public to increase the amount of high quality images from an area.

Gilber Mechado presented material on the development and use of the Pic4Turtle smartphone application for species identification and sightings, followed by a combined presentation by Tanya Berger-Wolf, Chuck Stewart & Jason Holmberg on the development of the Image-Based Ecological Information System (IBEIS) developed for PID and analyses of zebra photographs. While Berger-Wolf & Stewart presented an overview of the IBEIS zebra photo ID program and some initial trials of the sea turtle PID system, Holmberg presented the photo database system called Wildbook. The IBEIS team is currently working on modifying the zebra PID programming for use with sea turtle photos. The concept of a global sea turtle PID system with the ability to analyze large metadata sets associated with both underwater and nesting beach photographs was a recurrent theme among participants.

At the completion of the talks, participants were invited to join one of three small discussion groups: those who were already using PID in their projects; those wishing to begin PID in their projects; those who were interested in understanding more about the technical and development of PID programming. One member of the IBEIS team was asked to join one of the three small discussion groups, while participants in each of these groups were asked to think about their "dreams and needs." This was an opportunity for participants to seek advice on using PID in their projects, to think of what challenges they faced in implementing or using PID, to express ideas they would like to see developed for PID users, and to provide a list of what would be most useful to them in a future PID system. These ideas, challenges, dreams, and needs were recorded to be considered by the IBEIS team as they move forward in modifying the current zebra PID and Wildbook platforms, and developing the turtle PID platform (Leslie *et al.* 2016).

	Question
1	The PID workshop was informative and useful to me.
2	I learned several new things from the presentations made during the workshop.
3	The presenters for the workshop were well chosen.
4	I believe that the workshop waswell organized and ran smoothly.
5	From what I have learned, I would be interested in including PID in my own sea turtle projects.
6	From what I have learned, I believe a global PID system would be of benefit to my turtle projects.
7	I would be interested in attending another PID workshop in the future.
8	I would be interested in presenting my PID work at a future PID workshop.
9	I would like to talk more with one of the presenters or organizers about PID applications.

Table 1. Likert-scale questions posed to participants as part of the post-workshop.

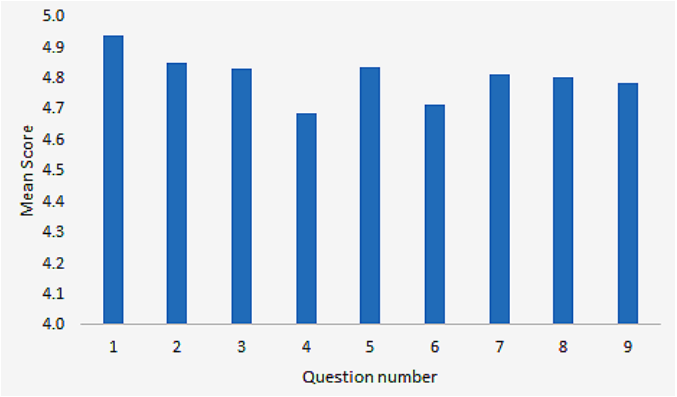

Figure 1. Mean scores for each of the Likert scale workshop evaluation questions.

	Response Quotation
1	"Let's do this again!"
2	"More time for debate."
3	"I would like to see more dmos of PID software during presentations"
4	"It would be helpful to receive more info on the speakers and forums prior to the workshop so that the questions can be covered."
5	"I think a better place is needed to faciliate group discussions."

Table 2. All responses provided by participants for the open-ended request for comments and suggestions.

At the completion of the workshop, participants were provided a workshop evaluation form comprising nine questions using a Likert scale of 1 to 6 (1 = strongly disagree; 5 = strongly agree; 6 = not applicable; see Table 1), and one open-ended question requesting comments on the workshop and recommendations/suggestions for the subsequent PID workshop at the 37th ISTS. Responses of participants were analyzed and mean scores for each of the nine Likert scale questions calculated (Fig. 1). Table 2 shows all of responses from participants to the final, open-ended request for comments and suggestions.

In summary, the first sea turtle PID workshop was an opportunity for sea turtle researchers and conservationists to exchange ideas and methods on current PID platforms and uses, as well as to provide feedback to computer programmers who are developing a sea turtle PID platform that may potentially be accessible in the future to a global network of users. It was recommended by many of the participants that another PID workshop, or a full session, be convened at the 37th ISTS.

Acknowledgments. We kindly thank WWF International, The Ocean Foundation, SWOT, Kelonia, and ProTECTOR Inc. who invested time and funding to support this workshop. We also thank each one of the presenters and all participants for being involved with this workshop.

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