



Kolmården Zoo, Sweden

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*Dear Members and Colleagues,*

First of all, I would like to thank and congratulate every one who contributed to make the annual conference in Kolmården, Sweden a great success.

The scientific program was, as usual, of a very high quality and I want to thank all of the speakers for sharing their experiences with us and for the effort they made in giving their presentations. The posters were also very interesting and of high quality. This year's student prize (500€) went to Josefin Starkhammar's poster presentation: "A tool for visualizing Odontocetes' sonar beam axis location and intensity variations" Josefin is from Lund University in Sweden. Congratulations Josefin, for a great job!

Our three invited speakers were also of very high quality: Professor Peter T. Madsen who surprised / stunned us all when he talked about the research he is doing on deep diving whales and dolphins; Dr. Stan Kuczaj from University of Southern Mississippi gave an extremely interesting talk about the thinking and personality of dolphins and our third invited speaker Dr. Lorenzo von Fersen made us all "ready to go" for conservation with his positive and energetic attitude about Yaqu Pacha, the conservation association for marine mammals in South America. An enormous thank you to all three!

We had a wonderful time and 4 days passed by too fast. The hospitality from the staff in Kolmården Animal Park was genuine and very professional. Lotta Nilsson had obviously worked hard the last year to put all the details in place and to help all the participants to feel comfortable. Everything was so well organised; the food was excellent, we had some nice sunshine for the beginning of the conference, a beautiful visit of the Zoo, a spectacular dolphin show and the social events were tremendous. SKÅL (cheers) and TACK SÅ MYCKET (thank you very much) to all of you!

As usual every second year, there was a change in the board: Pedro Lavia, so appreciated by us all, ended his term as past-President and we are all very thankful for the energy, warmth and good communication he has given to our Association. I am sure he will remain the same, even if he is not on the board any more.

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Thank you Pedro, you are a great person and it was an honour to be on the board at the same time as you!

Another great person was elected by the members to be a new board member – Welcome to Claudia Gili who will enter the board as President –elect. We are looking forward to cooperating with Claudia.

There was a whole day board meeting the day before the conference and as usual it was long, interesting and sometimes rather “hot topics” were discussed. The board is very happy to cooperate more and more with the different committees and hope in the future that the committees will be even more involved in developing EAAM. A new committee was formed during the conference in Kolmården: The Conservation committee with its three members, Mr. Leandro Stanzani, Mr. Miguel Bueno and Dr. Lorenzo von Fersen. The board wishes you good luck and is looking forward to your contributions! The other committees are: the Education committee, the Student committee, the Training committee, the Research committee and the Information committee. Thank you all of you for the effort you are putting in to make our association more dynamic!

Aquatic Mammals, the impressive scientific journal is doing very well thanks to the hard work of Managing Editor Jeanette Thomas and Co-Editor Kathleen Dudzinski.

Next year, 2009, the individual membership will be raised to 50€ and that will include an electronic subscription to Aquatic Mammals for everyone.

Another issue that the board, together with the Information committee is working on and hope to resolve very soon is our website. All the committees will have their own page and their own contact mail address so you can all communicate with them easily. The only member section at the web site will also come in place very soon. Last but not least, I hope you will all book in your diaries the 2009 Annual conference. The host is Mediterraneo Marine Park in Malta and it is scheduled 13-16 March 2009.

For the next conference the board have decided to sponsor 12 students who have an accepted abstract (poster or oral) with registration fee AND accommodation (4 rooms with triple accommodation). The students will only have to pay for their travel. The students are our future, so please spread this news and motivate the students to participate.

I wish you all a nice, warm and creative spring!

Best regards,

**Birgitta Mercera**  
President of EAAM

**Pictured from left to right: Peter T. Madsen, Lorenzo von Fersen and Stan Kuczaj**



# From the Student Committee

*Dear Students,*

Here is the wrap up for the 2008 conference in Kolmården, Sweden:

First of all, we would like to thank all the students who were present at the student meeting held in the Dolfinarium. We had a very fruitful discussion that will hopefully help the student committee to be more accurate in its actions. To sum up what we talked about, here are a few points the student committee will be focusing on this year:

1. We need to push facilities to put their contact information on line via the questionnaire. The questionnaire will be shortly available directly from the website. For European facilities, it is a good way to get students and make sure they will reach the right person. If you would like to obtain the questionnaire please feel free to email us.
2. We need to have more updated information on the website and more links to other marine mammal related websites. The student committee will take care of it but if you found some relevant site, please forward it to us.
3. An important point raised by the students is to have access to relevant education information. We will start putting a list of institutions available in Europe for zookeepers, veterinarians, biologists etc. Once again we need your help to let us know if we are missing some.
4. A FAQ page is being put together and it will be online shortly, but it should be a dynamic process. So ask questions.

We hope that these goals will be achieved within this year and that the results will help the students to find their way in the marine mammal jungle! However, we need your help to improve our service and to get feedback on our actions. Please don't hesitate to contact us:

Marie-Anne Blanchet [marie\\_blanchet@yahoo.fr](mailto:marie_blanchet@yahoo.fr)

Marjorie Flamey [marj\\_flamey@hotmail.com](mailto:marj_flamey@hotmail.com)

Bert Hoeve [b.hoeve@dolfinarium.nl](mailto:b.hoeve@dolfinarium.nl)

All the best from your student committee!



## Greetings from the Training Committee

My name is Sunna Edberg and I am a senior marine mammal trainer from Kolmården, Sweden. I am new to the training committee and a new member of the EAAM. I am very excited to be involved in the organization and I look forward to meet you all in the future!



To tell you a little bit about myself, I am nuts about pinnipeds, love husbandry, research and training, as well as anything to do with pictures and movie-making featuring marine mammals. I have been working with bottlenose dolphins, South African fur seals, harbour seals, and grey seals at Kolmården for almost 20 years. However, I began my career as a zoo school student and later as a keeper watching over the tigers and wolfs in 1983.

Have you read the committees goals formed in 2007? You find them on the website under Board and Committees. One of our goals is to increase the knowledge of members about training done at other member facilities/ organizations. So we are interested to find those of YOU out there that want to submit photos of you and your animals and to tell us about what is going on at your facility. This information could be what type of facility you work at, what you do at presentations, your research, your kind of animals, your guest interactions or and your current unusual happenings.



As trainers we get to experience the coolest things! In March, Kolmården hosted the EAAM annual conference. Seeing you all, learning new things and meeting new people is what conferences is all about! A HUGE praise to Birgitta for arranging such a wonderful conference!

I barely had time to catch up with the sleep after an intense conference before I flew down to beautiful Portugal and visited Zoomarine. I was fortunate to do a fur seal transport, my first seal transport by air. It was a valuable experience in preparing documents, arranging transport boxes, permits and to be contact person for Zoomarine with their wonderful secretary Maria. Kolmården's South African fur seal males Johan and Jocke have now exchanged cold Swedish winters for sunny warm Portuguese summers. Thank you to senior Oscar, Lucie, Xana, Nàdea, Carla, Ana and all the rest of the staff at Zoomarine!



The committee hopes to hear from you in the near future!

**Sincerely,**  
The training committee through Sunna



# EAAM Speed Dating: Results

During the 36th EAAM conference in Sweden the education committee organised a special workshop. The aim was to have an informal meeting in which we encourage to discuss specific topics. After some brainstorm we came up with the idea of a 'speed-date' session.

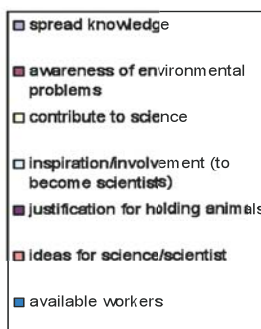
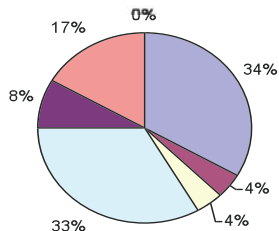
So, a romantic atmosphere (with music and candlelight) was created in the room next to the poster presentation. The music attracted curious people and the first 20 guests were invited to join the speed-date session.

Every participant was joined with a partner and after 4 minutes discussing one topic they had to summarise their findings of their discussion on paper. After a change of partner a second topic came up for discussion. And so on...

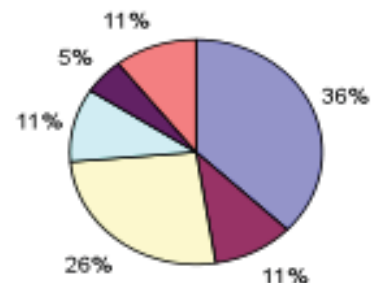
We had fun and we feel new relations were established for the future! The conclusions from this workshop are not scientific valid, but are fun reading. It gives us insight in the way this group thinks about education.

**On behalf of the Education Committee,  
Ida Smit**

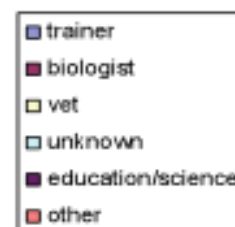
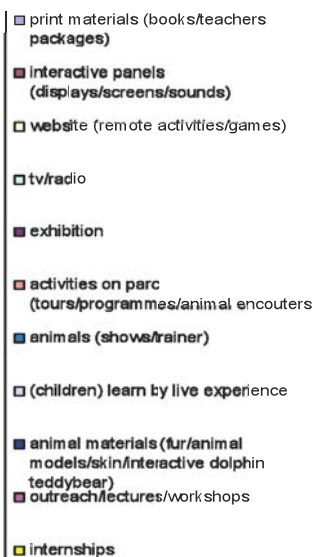
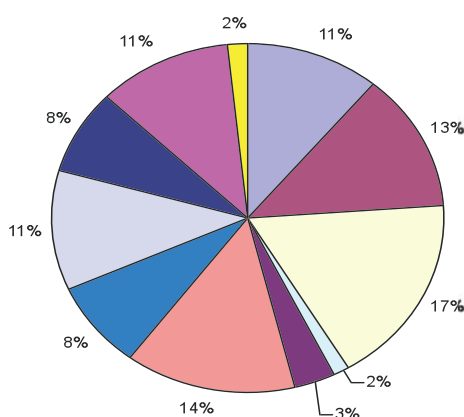
**education and science**  
what can education contribute to science



**participants**



**favourite educational materials**



# A tool for visualizing Odontocetes' sonar beam axis location and intensity variations

EAAM Conference Student Prize  
Josefin Starkhammar  
[josefin.starkhammar@elmat.lth.se](mailto:josefin.starkhammar@elmat.lth.se)

## Introduction

Most species in the Animal Kingdom possess sensory abilities that rely entirely on passive registration of physical parameters from the surroundings.

However, some animals e.g. Odontocetes actively produce what is to become their sensory input through echolocation. It is difficult for us humans to understand how the world is perceived by these animals in their acoustical domain since their active use of sounds is so fundamentally different from our own passive use.

Humans are mainly visually orientated but have learned to supplement their senses with tools, e. g. flash lights, RADAR and pulsed-echo sounders, often with much effort put into supplying feedback in the visual domain.

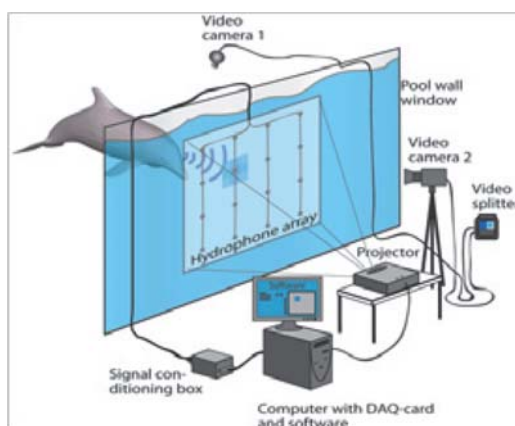


Figure 1. System setup (Amundin et al. 2008).

In order to facilitate a better understanding of dolphins, a new tool designed to visualize their sonar beam has been developed.

## Solution

The system is based on 16 hydrophones arranged in a 4 by 4 matrix covering a square area of 0.6m<sup>2</sup>. See Figure 1 and 2. The peak amplitudes of the sonar clicks, picked up by each of the hydrophones, are acquired via a DAQ-card and further processed by custom designed computer software. The theoretical location of the beam axis can be calculated through interpolation of the hydrophone signals, as well as the relative amplitude distribution within the beam.

The system is called ELVIS (Echolocation Visualization and Interface System).

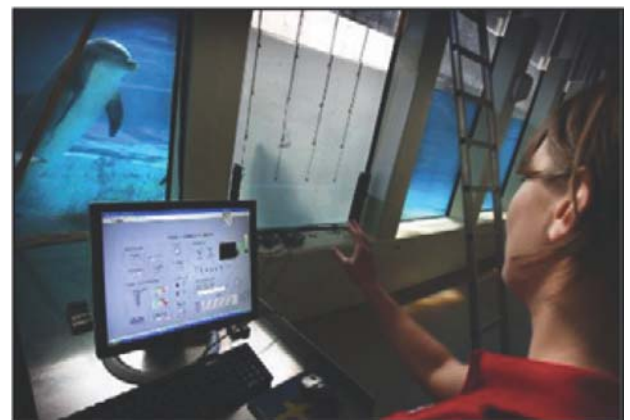


Figure 2. ELVIS operated in Kolmården. (Norrköpings Tidningar, 10/10-07)



## Results and discussion

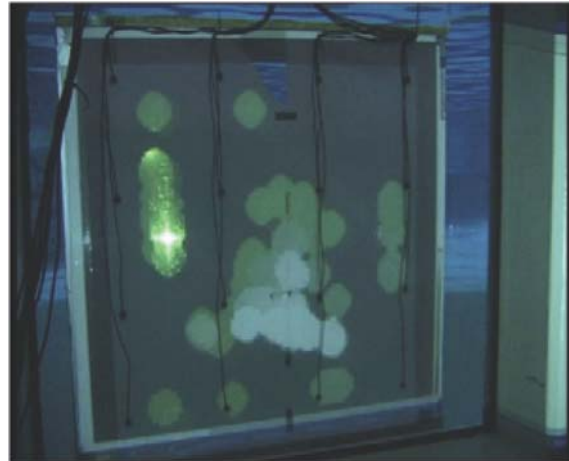
The visualization of the location and intensity of the echolocation clicks functioned as intended. These results are presented in Figure 3 and 4. The dolphin echolocation beam axis is in Figure 3 marked by a red line to indicate where it hits the screen. This location coincides with the position of the spot on the screen.

Results show that some individuals in Kolmården Dolphinarium were intrigued by the visual feedback of their clicks and investigated this feature spontaneously. See Figure 4. The system can be set to either visualize the clicks only to the human operator or to both the phonating dolphin and the scientist. Which parameter to log for post processing can be set in the software.

## Conclusion

ELVIS has proven to be capable of recording and visualizing the location and intensity of dolphin sonar clicks in real-time, either only to the human system operator or to both the operator and the phonating dolphin.

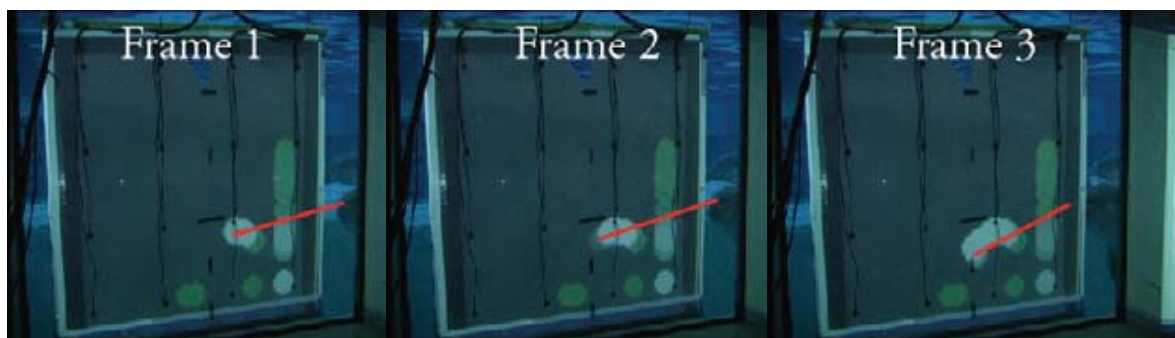
ELVIS is suggested to become a useful tool in future Odontocete research.



**Figure 4.** This picture was taken the first time a dolphin investigated the paint feature in ELVIS. For the first time in history a dolphin has generated a computer based picture.

## Literature Cited

Amundin, M., Starkhammar, J., Evander, M., Almqvist, M., Lindstrom, K., Persson, H. W. (2008). An echolocation visualization and interface system for dolphin research. *Journal of the Acoustical Society of America*, 123(2), 1188-1119.



**Figure 3.** These video frames show a dolphin swimming up to the screen while echolocating. The location and intensity of each click in the sonar beam axis is visualized by a light intensity coded spot on the screen. The clicks are visualized as dark green for low intensity clicks and white clicks for high intensity clicks. The spots were also set to fade out over time to keep the screen from getting too cluttered. A red line was added to the frames that indicates the dolphin beam axis location and direction. The time difference between each frame is 0.2 seconds.



### EAAM Spring Newsletter - Moorea Dolphin Center

For the spring newsletter, the Moorea Dolphin Center in partnership with the nonprofit foundation Te mana o te moana would like to present three main topics:

- All educational programs reservations are full until June 2008.
- EAAM conference in Kolmården / AMMPA conference in Atlanta
- "Ocean tool kit" in partnership with the World Ocean network for Unesco.

First of all, we're happy to announce that all the reservations for **educational programs** are full until the end of the 2007- 2008 school year. As reminder, all the educational programs are proposed free of charge and have been designed according to the national educational standards and validated by the Department of Primary Schools of French Polynesia.



#### EAAM Kolmården Conference

The Moorea Dolphin Center participated at the EAAM conference in Kolmården, Sweden from 7-10 March, 2008. One of our senior trainers, Gerald Azzaria, traveled over 22 000 kilometers from our center to get there. Going from a place where the average temperature around 32°C to another at -10°C has been a challenge for him, but he was not a ice cube when he returned, so everything finished well. Gerald's presentation at the conference was on education initiatives developed by the Moorea Dolphin Center, in partnership with the nonprofit foundation Te mana o te moana.

#### Education Initiatives:

Sustainability actions presented to school children and the local community: three school programs using fun and educational tools and spending some observation time of the dolphins and the sea turtle clinic from the beach.

At the end of all programs, 20 minutes are dedicated to conservation; the educator shows to the pupils the importance of preserving our nature, more specifically our ocean by using pictures of animals killed by plastic and other human causes, and by showing trash article lifespan in the sea. In order to prove the necessity of recycling, an example of a plastic bottle recycled is shown at the different stages.

"Green Globe Benchmarked" achievement by the Moorea Dolphin Center. This worldwide benchmark is a certification assisting the international travel and tourism industry to attain sustainability. This achievement results in energy consumption, waste recycling, community commitment and contribution to conservation. The financial support of Te mana o te moana is appreciated in order to develop conservation actions, programs, special events oriented towards nature conservation.





The Moorea Dolphin Center has also recently participated in a meeting at the **Georgia Aquarium in Atlanta**.

Every year, educators and members of the Alliance, gather for the AMMPA meeting (Alliance of Marine Mammals Parks and Aquariums). This year it was held at the Georgia Aquarium which features 4 whale sharks! Vie Jourdan, EAAM education officer, went to the meeting in order to share all toolkits from centers. Our goals were to develop new educational tools and share the same information from all the educators' members (information of species encountered in all facilities in the same way). Another goal was to develop programs contents on the thematic of "play" (animal play speaks to the basic need for play among humans and ways in which play can be used in informal education). Lastly, a goal was to develop the project "Thank You Ocean" during the school year (plan a calendar of event actions for schools children, give more information to the local community and develop tools in order to thank the ocean).



The last important event present in the "**Ocean info Pack**" is a toolkit developed for the World Ocean Network ([www.worldoceannetwork.org](http://www.worldoceannetwork.org)). The idea was to create a website associated to the actors and members of the World ocean network:

[http://www.webmastermdp.com.ar/help-your-public-to-act.php?cat\\_id=2&subcat\\_i](http://www.webmastermdp.com.ar/help-your-public-to-act.php?cat_id=2&subcat_i)

The website was designed to raise public awareness (information, suggestions, activities and communication techniques) on ocean issues and inspire action in favor of the blue planet. This pack includes tools developed by the World Ocean Network, activity sheets and communication ideas realized by partners of the World Ocean Network and information validated by scientists and researchers on oceanic issues (Pollution, living resources and biodiversity, coastal management, climate change, ocean governance, culture and heritage).

