

**Impact case study (REF3b)**

<p><b>Institution:</b> University of Warwick</p>
<p><b>Unit of Assessment:</b> Sociology</p>
<p><b>Title of case study:</b>  <b>Shaping conservation education and public engagement – zoos and aquaria</b></p>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>The survival of many animal species is currently threatened by environmental challenges and unsustainable resource consumption. Research carried out between 2010-2013 promoted the conservation of endangered species by improving communication and education strategies of zoos and aquaria. It has:</p> <ul style="list-style-type: none"> <li>• Created new content, delivery and structures of public engagement to address visitors' needs, promoting interactive approaches to conservation issues;</li> <li>• Improved methods for evaluating impact and contributed new resources to the training of educators engaged with communicating conservation messages;</li> <li>• Contributed to public debate about the ethics of zoos by enhancing the effectiveness of their educational role.</li> </ul> <p>As a result of this research, the educational function of zoos was enhanced and there has been a direct impact upon how visitors experience zoos and aquaria. These impacts have been achieved through research and consultancy in collaboration with organisations in the field.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>Research carried out by Jensen, from his arrival at Warwick in 2010 addressed: how zoos can improve their presentational and educational programmes to inform human behaviours that threaten species' survival, and how zoos, aquaria and other institutions involved with conservation can restructure their public engagement strategies to communicate the need for such changes. Three interlinked projects in collaboration with the Zoological Society of London (ZSL, 2009-2011), the Durrell Wildlife Conservation Trust, Jersey (DWCT, 2010-2012) and the National Marine Aquarium, Mauritius (NMA, 2013) underpinned this agenda.</p> <p><b>Supporting Children's Learning</b></p> <p>Research for London Zoo addressed children's capacity to learn during zoo visits. This project used focus groups, ethnographic research and a large-scale questionnaire (<math>n = 3018</math> children aged 7-14), administered before and after zoo visits, to evaluate changes in children's understanding of wildlife and conservation. <b>Results demonstrated</b> the zoo's potential impact: 53% of the children demonstrated statistically significant improvement in understanding about animals and their habitats after a visit. When supplemented by educational presentations by zoo staff, an additional 39% reported greater concerns about species extinction. The results also showed how the content of presentations and teaching methods influenced outcomes. Children responded negatively to the use of animal skins and skulls or when their own teachers were presenting evidence and many expressed ethical objections to animals held in captivity. Positive responses were elicited to more contextual learning that enabled children to understand animals in their native habitats. The results offered the Zoological Society of London new insights into how children could be encouraged to engage with wildlife conservation and how zoos could be used as positive education spaces.</p> <p><b>Engaging with Adult Visitors</b></p> <p>Research (within an EC-FP7 project: EU Zoos-XXI) addressed adult visitors to the Durrell Wildlife Conservation Trust, a charity which runs 50 conservation projects in 14 countries and has trained over 3000 conservationists from across 128 countries. After an initial public participation meeting, follow up focus groups addressed three inter-related goals: how to communicate wildlife conservation messages; which types of zoo-based information systems were most effective and the importance of dialogue with visiting publics to inform new approaches. This project evaluated the conservation aids and public engagement systems found in the park and developed</p>

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recommendations about how these might be improved. **Research showed** the importance of interactive public consultation to the process of designing conservation information and the ways it is transmitted and that a range of physical, emotional and informational needs to be addressed. The findings were used to restructure the wildlife park's educational provision. Follow-up research on visitors, once the recommended changes had been implemented, demonstrated that learning had taken place and that visitors' concern with conservation had increased.

### Training Conservationists

Research on conservation training was central to a smaller scale project undertaken in collaboration with the National Marine Aquarium in Mauritius. A questionnaire-based survey was carried out to evaluate the impact of a new conservation training programme aimed at the Mauritius tourist industry. This revealed the most (science of coral) and least (non-coral invertebrates and conservation) effective elements in the existing training programme and encouraged the NMA to amend its practices accordingly.

### 3. References to the research (indicative maximum of six references)

- Dawson, E. and Jensen, E. (October 2011). 'Towards a 'contextual turn' in visitor research: Evaluating visitor segmentation and identity-related motivations', *Visitor Studies*, 14(2): pp. 127-140. [peer reviewed] REF2
- Wagoner, B. and Jensen, E. (2010). 'Science learning at the zoo: Evaluating children's developing understanding of animals and their habitats', *Psychology and Society*, 3(1): pp. 65—76. [peer reviewed]
- Jensen, E. and Wagoner, B. (2009). 'Continuing Commentary: A cyclical model of social change', *Culture and Psychology*, [peer reviewed] DOI 10.1177/1354067X08099624

### Research funding

- ZSL London Zoo Project (2009-11) Funder: Greater London Authority (PI: Jensen). £27,000
- EU Zoos and Science in the 21st Century: Engaging the public in nature conservation' (2009-12) EC-FP7 (Coordinator – Nordeconsult (Sweden): Co-I Durrell Wildlife Conservation Trust: Jensen as consultant). 758178 Euros (DWCT element: 55,854 Euros)
- National Marine Aquarium, Mauritius (2012) NMA-funded (PI: Jensen) £2000.

### 4. Details of the impact (indicative maximum 750 words)

Two strands of impact have developed from this research. First, tailored collaborations with specific institutions have improved the communication of conservation messages to visiting publics. Second, impact across the sector has been achieved by creating new resources and training courses for practitioners.

#### 1. Improving International Conservation Education

In partnership with the Durrell Wildlife Conservation Trust (290,000 visitors p.a.), the research findings were used to improve the quality of their visitor experience through better exhibition design and more robust evaluation. From 2011, the Trust began to implement focus group-inspired improvements, while also continuing to monitor how these were being received. The Trust's Wildlife Park had previously been over-reliant on conveying information through dense and inaccessible texts, which failed to communicate conservation messages effectively. The research guided numerous changes to practices and communication content, including changes in navigation aids around the park, the development of new interactive means of delivering conservation messages through audio guides, video displays and other communication systems specifically designed for younger visitors, such as free web content and blog posts. The new approach was light, image-rich and more comprehensible. In addition, volunteers and interns were introduced to offer guidance and information about new exhibits. To create the impression of a natural habitat, jungle sounds and vegetation were introduced in the reptile house. These changes were evaluated in 2012 in a survey of c. 200 visitors to the park that provided clear evidence of positive responses. Visitors demonstrated increased concern with (and better understanding of) the importance of conserving

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wildlife habitats while also showing more interest in taking action to protect threatened species. The Trust has also modified their training programmes for projects around the world: changes have been put in place for projects overseas which have led to indigenous populations taking better care of wildlife in their respective areas.

Research with the Zoological Society of London (1.2 million visitors p.a.) has improved their use of systematic and high quality evaluation techniques to determine the success of their public engagement activities specifically aimed at children. The wider use of qualitative evidence, such as annotated drawings for example, has replaced evaluations based solely on visitor numbers as the means to assess aspects of exhibit impact. Success is now measured in terms of learning. Such innovations allow the zoo to understand the strengths and weaknesses of their current public engagement practices and to take appropriate action where needed.

**2. Providing training resources for the conservation sector**

The research has contributed to the development of best practice by not only engaging the public with conservation messages but also developing systems to evaluate the impact of conservation education. Both have been communicated to professionals in the field through presentations at practitioner conferences and the provision of training for those seeking to impart conservation messages to the public. Research results have been presented, by invitation, to practitioner audiences at over 30 conferences and workshops from 2009-2013, reaching over 2500 conservation educators directly. Examples include the British and Irish Association of Zoos and Aquariums, Durrell Wildlife Conservation Trust, European Association of Zoos and Aquariums and the International Zoo Education Association. Examples of impact on practice include exhibition changes in Bioparco Roma/Rome Zoo (1 million+ visitors p.a.) to improve the quality of a high profile exhibition (June 2011). The researcher(s) worked with the zoo in advance of a major new exhibition on small primates. The Head of Education at the Zoo attended a training event held at the Durrell Wildlife Conservation Trust where findings from the research were presented. As a result, the *Callitrichid* Exhibit was renamed The Smallest Monkey in the World, reflecting research findings on the effectiveness of simplified messages. Jensen was invited to inspect the results, which focused on adjustments from technical to more generally understandable messages to excite greater public attention. Equally, with reference to the research conducted for the National Marine Aquarium in Mauritius, a redesign of their conservation training programme created a more context-oriented understanding of conservation of coral reefs that reached beyond scientific details and specified practical conservation activities that could be recommended to the island's visitors.

The research has been cited in media which reach a worldwide audience. This included a BBC radio interview in 2010, which allowed Jensen to share his research findings to a broader public audience. Evidence in blog posts and online comments shows evidence of wider impact: the research also had an impact when the results were cited in the public debate about zoo ethics when Born Free's CEO engaged in detailed critical discussion (see below).

**5. Sources to corroborate the impact** (indicative maximum of 10 references)

Examples of media coverage

<http://www.timeshighereducation.co.uk/story.asp?storyCode=416425&sectioncode=26>

<http://www.examiner.com/article/zoo-trips-increase-science-learning-children>

[http://www.msnbc.msn.com/id/43641745/ns/technology\\_and\\_science-science/t/captivity-affects-zoo-chimps-mental-health/#.UAHxIPHNqvQ](http://www.msnbc.msn.com/id/43641745/ns/technology_and_science-science/t/captivity-affects-zoo-chimps-mental-health/#.UAHxIPHNqvQ)

Picked up by a number of websites (examples):

[http://www.eurekaalert.org/pub\\_releases/2011-05/uow-rsa052711.php](http://www.eurekaalert.org/pub_releases/2011-05/uow-rsa052711.php)

<http://phys.org/news/2011-05-zoo-boosts-science-environment-knowledge.html>

<http://www.lifesciencelog.com/cluster417594780/>

<http://positiveparentplus.com/tag/school/>

Born Free blog post:

<http://www.bornfree.org.uk/blog/2010/08/>

**Publicly Available Reports or Documents:**

- Jensen, E., (2010). *Engaging with animals, science and conservation: A focus group study of the impacts of zoo education*. Zoological Society of London.
- Jensen, E., (2010). *Final Report: Quantitative and Qualitative Analysis of Teacher Feedback Forms*. Zoological Society of London.
- Jensen, E., (2011). *Learning about animals, science and conservation: Large-scale survey-based evaluation of the educational impact of the ZSL London Zoo Formal Learning programme*. Published by the University of Warwick and Zoological Society of London. <http://wrap.warwick.ac.uk/46710/>
- Jensen, E., (2011). *Upstream Public Engagement at the Zoo: The Durrell Wildlife Park Public Participation Meeting*. Published by Durrell Wildlife Conservation Trust and the University of Warwick.
- Jensen, E., (2011). *On-going Public Engagement at the Zoo: The Durrell Wildlife Park Public Participation Follow-Up Meeting*. Published by Durrell Wildlife Conservation Trust and the University of Warwick. [http://warwick.academia.edu/EricJensen/Papers/1166763/On-going\\_Public\\_Engagement\\_at\\_the\\_Zoo\\_The\\_Durrell\\_Wildlife\\_Park\\_Public\\_Participation\\_Follow-Up\\_Meeting](http://warwick.academia.edu/EricJensen/Papers/1166763/On-going_Public_Engagement_at_the_Zoo_The_Durrell_Wildlife_Park_Public_Participation_Follow-Up_Meeting)
- Jensen, E., (2012). *Critical Review of Conservation Education and Engagement Practices in European Zoos and Aquaria*. Published by Durrell Wildlife Conservation Trust and the University of Warwick.

**Confidential reports or documents (if listed, these must be made available by the HEI if audited).**

- Jensen, E. and Cassidy, M. (2012). 'The Real World Science Project Evaluation & Research Framework: An Interdisciplinary Model for Programme Development and Impact'. Natural History Museum (Limited distribution report).