

# EXHIBIT 1

**UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

MARC ANDERSON, KELLY NELSON,  
and JULIETTE MORIZUR,

Plaintiffs,

v.

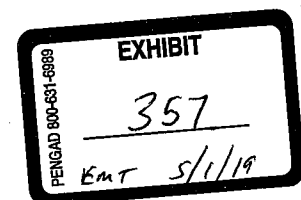
SEAWORLD PARKS AND  
ENTERTAINMENT, INC.,

Defendant.

Case No.: 4:15-cv-02172-JSW

**EXPERT REPORT OF E.C.M. PARSONS, Ph.D**

**CONFIDENTIAL - SUBJECT TO PROTECTIVE ORDER**



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## I. INTRODUCTION

1. I have prepared this report pursuant to my role as an expert witness for Mr. Marc Anderson, Ms. Kelly Nelson, and Ms. Juliette Morizur (“Plaintiffs”) in this case. I have been asked to provide an opinion on the accuracy of various statements made by defendant SeaWorld Parks & Entertainment, Inc. (“SeaWorld”).

2. The opinions in this report are my own. I have no relationship with Plaintiffs, nor do I have any relationship with Plaintiffs’ attorneys apart from this case. I do not have any financial interest in the outcome of this case.

3. My work on this matter is ongoing. This report summarizes my current opinions given the information available to date. If additional information is produced, I may modify or supplement my analyses and opinions. I understand further that SeaWorld will be submitting expert reports in this case as well. I intend to review these reports and provide a response if necessary. I anticipate using documents reviewed in connection with preparing this report, and additional graphics illustrating concepts described herein, at trial.

### A. Qualifications

4. I am currently a Research Affiliate at the Institute for Biodiversity, Animal Health, and Comparative Medicine at the University of Glasgow. I previously served as an Associate Professor and Director of the Undergraduate Program in Environmental Science at George Mason University. I was also a Research Associate at the Smithsonian Institute for Conservation Biology. A copy of my curriculum vitae is attached as **Exhibit A**.

5. My primary research interests include marine mammal biology (ecology, behavior, and physiology/anatomy) and conservation (whaling issues, impacts of pollutants / noise and anthropogenic activities, and public attitudes). I have personally worked on marine

mammal conservation projects on all seven continents. I regularly observe cetaceans, including *Orcinus orca*, in the wild.

6. As a result of my educational, research, and professional experience over the past 25 years, I consider myself to be an expert in the field of marine mammal biology, including on the specific topic of orca lifespans and longevity.

### **1. Education**

7. In 1991, I received Bachelor of Arts and Master of Arts degrees in Zoology from St. Peter's College at Oxford University. In 1996, I received a Doctor of Philosophy degree in Marine Biology from the University of Hong Kong. My Ph.D. thesis, entitled "Hong Kong's cetaceans: The biology, ecology & behaviour of *Sousa chinensis* and *Neophocaena phocaenoides*," focused on cetaceans located near the Hong Kong peninsula and its islands.

8. I have taught a wide variety of courses related to environmental science and policy, including Marine Mammal Biology and Conservation; Underwater Research Methods; Marine Ecology; Marine Conservation; and Animal and Conservation Ethics.

9. I have written and developed Bachelor of Science, Bachelor of Arts, and Master of Arts degree programs in the environmental sciences, as well as conservation courses for the Smithsonian Institute and George Mason University, and several minor degree programs.

### **2. Research Experience**

10. In the past 25 years, I have authored or co-authored over 150 peer-reviewed publications in academic journals and proceedings; two books; 11 book chapters, most of them relating to cetaceans and/or whales; over two dozen encyclopedia entries; and over 200 other meeting reports, scientific reports, conference proceedings papers, editorials, conference presentations, and other papers. Peer-reviewed publications relevant to the issues addressed in this report include (but are not limited to) the following:

- a. A series of annual reports on the “State of the Cetacean Environment” published once a year from 2002 through 2018;
- b. A series of annual reviews on “Recent advances in whale-watching research” published once a year from 2006 through 2018;
- c. A paper entitled, “Improving captive marine mammal welfare in the United States: science-based recommendations for improved regulatory requirements for captive marine mammal care” published in 2017;
- d. A paper entitled, “Key research questions of global importance for cetacean conservation” published in 2015.

11. In addition to the above, I am lead author of an 18-chapter textbook, *An Introduction to Marine Mammal Biology and Conservation* (published in 2012). I am also co-editor of a second academic text, *Human-Wildlife Conflict: Complexity in the Marine Environment* (published in 2015). I am also the author of a chapter on orca longevity that will be included in a forthcoming book titled *The Case Against Marine Mammals in Captivity*.

12. I am also a senior correspondent for the world’s leading marine science blog, *Southern Fried Science*, as well as a weekly broadcaster for a leading conservation science podcast, *Marine Conservation Happy Hour*. Additionally, I am producer and host of a new podcast, *Marine Mammal Science*.

### 3. Work and Roles in Organizations

13. I have served as a Director/Governor of the Society for Conservation Biology, the Society for Marine Mammalogy, and the American Cetacean Society. I am also a member of Flora and Fauna International; the Marine Biological Association (Hong Kong and United Kingdom); the British Ecological Society; the Institute of Biology; the Scottish Association for

Marine Science; the Marine Biological Association of the United Kingdom; the European Cetacean Society; and the Royal Geographical Society.

14. I have been a member of the Scientific Committee of the International Whaling Commission since 1999. I have served as Co-Convener of the Environmental Concerns Subcommittee, and I am currently serving as Convener of the Commission's Whale Sanctuaries Working Group. I am also currently a member of the Whale Watching Subcommittee, as well as the Human-Induced and Mortality Subcommittee.

15. I have managed or co-managed six iterations of the International Marine Conservation Congress and the International Congress of Conservation Biology.

16. I am an editor for two major scientific journals, *Frontiers in Marine Science* (for which I serve as Associate Editor) and the *Journal of Environmental Studies and Sciences* (for which I am currently Managing Editor). I also serve on the editorial board for a third journal, *Tourism in Marine Environments*.

17. For over four years, I served as Research and Education Director at the Hebridean Whale and Dolphin Trust in Scotland, developing courses such as Marine Mammal Science and Marine Mammal Awareness.

18. I have not testified as an expert witness, at trial or by deposition, in the past four years.

**B. Information Considered**

19. I have considered information from a variety of sources in connection with this report, including information related to this litigation, such as legal filings, deposition testimony, and documents produced in discovery, and information gathered from independent research. The

information I have considered is listed in **Exhibit B**, as well as the footnotes and other citations in this report.

20. I understand that discovery is ongoing in this matter. I reserve the right to consider further discovery in this case, including, for example, additional expert reports, transcripts of depositions, and documents produced, if any; any further studies or articles that become available; and any other publicly available information, such as additional deaths of SeaWorld captive orcas.<sup>1</sup>

### **C. Summary of Opinions**

21. I have been asked by counsel for Plaintiffs to provide expert testimony regarding SeaWorld's statements about captive and wild orca lifespans. Specifically, I have been asked to evaluate the accuracy and scientific basis, or lack thereof, of those statements.

22. This report sets forth my opinions and the bases for them. In summary, it is my opinion that SeaWorld's statements—going back at least to 2013—regarding captive orca lifespans are false, or, at the very least, misleading. The scientific literature and available data show that orcas in captivity have higher mortality rates than orcas in the wild. Moreover, the statistical analyses conducted by SeaWorld employees as part of a paper published in 2015 do not support the broad statements SeaWorld has made regarding how long its captive orcas live, nor are they consistent with *known* data regarding captive orca lifespans.

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<sup>1</sup> I understand that fact discovery closed in this case on November 30, 2018. I understand from public news reports that, since that date, another captive SeaWorld orca died—specifically, Kayla, a 30-year-old orca at SeaWorld Orlando. *See, e.g.*, <https://www.cnn.com/2019/01/29/us/seaworld-orca-kayla-trnd/index.html> (accessed February 7, 2019).



**D. Compensation**

23. I have been engaged by counsel for Plaintiffs in this case. I have agreed to provide up to 10 hours of consulting work on this matter *pro bono*. For each hour that I work on this matter beyond 10 hours, I will be compensated at my usual consulting rate of \$150 per hour, subject to a negotiated cap.

24. Any travel expenses I have incurred or will incur because of my consulting work on this matter will be reimbursed by Plaintiffs' counsel.

**II. BACKGROUND**

**A. SeaWorld's Statements Regarding Orca Lifespans**

25. I understand that Plaintiffs have brought this suit against SeaWorld based on certain statements made by SeaWorld. One category of challenged statements relates to SeaWorld's representations to the public about the lifespans of its captive orcas relative to the lifespans of wild orcas.

26. Specifically, Plaintiffs allege, "An open letter on SeaWorld's website states that 'SeaWorld's killer whales' life spans are equivalent with those in the wild. While studies continue to define the average life span of killer whales in the wild, the most recent science suggests that our killer whales' life spans are comparable—indeed, five of our animals are older than 30, and one of our whales is close to 50.'"<sup>2</sup>

27. Plaintiff Kelly Nelson testified at her deposition that she relied on SeaWorld's statement "that the [orcas] lived the same amount at least in captivity that they did in the wild" when she purchased her admission ticket to SeaWorld.<sup>3</sup> Ms. Nelson also identified a statement

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<sup>2</sup> See, e.g., Third Amended Complaint (Dkt. 94) ¶ 24.

<sup>3</sup> Nelson Dep. Tr. 155:22-156:3.

on a SeaWorld webpage that she relied on, specifically, “[s]cientific data shows that killer whales at SeaWorld are living as long as their counterparts in the wild.”<sup>4</sup> Plaintiff Marc Anderson similarly testified at his deposition that he relied on SeaWorld’s statement that SeaWorld “killer whales live as long as those in the wild.”<sup>5</sup>

28. Examples of other statements by SeaWorld relating to orca lifespans or longevity include:

- In a paid advertisement with the headline, “Fact: Whales live as long at SeaWorld,” SeaWorld veterinarian Dr. Chris Dold says, “Today, our whales live as long as those in the wild.”<sup>6</sup>
- In a letter entitled, “Dear Film Critic,” SeaWorld says, “While research suggests that some wild killer whales can live as long as 60 or 70 years, their average lifespan is nowhere near that. Nor is it true that killer whales in captivity live only 25 to 35 years. Because we’ve been studying killer whales at places like SeaWorld for only 40 years or so, we don’t know what their lifespans might be[.]”<sup>7</sup>
- A document produced by SeaWorld in this case, bearing the headline “SeaWorld’s Killer Whales are Thriving,” asserts that “Scientific data shows that killer whales at SeaWorld are living as long as their counterparts in the wild.”<sup>8</sup>

- [REDACTED]

<sup>4</sup> Nelson Dep. Tr. 163:6-164:20 & Ex. 48.

<sup>5</sup> Anderson Dep. Tr. 265:18-21.

<sup>6</sup> Jacobs Dep. Ex. 222 (SW-AND0252817).

<sup>7</sup> Frey Dep. Ex. 82 at 1 (42WEST\_0000063).

<sup>8</sup> Gass Dep. Ex. 70.

[REDACTED]

[REDACTED]

[REDACTED]

- An infographic titled “How Long do Killer Whales Live?” states, “[T]he evidence suggests killer whales in our care have lifespans comparable to those in the wild.”<sup>10</sup>

- [REDACTED]
- [REDACTED]
- [REDACTED]

**B. Scientific Measures of How Long Animals Live**

29. Various terms are used to describe how long animals—including orcas—live. As relevant here, certain of these terms are defined below.

**1. Lifespan or Longevity**

30. The lifespan of an individual animal is the length of time that it is actually alive, from birth to death. The term “longevity” is typically synonymous with lifespan in the scientific community.<sup>12</sup>

31. The *maximum* lifespan of a group of animals is the longest length of time that any individual animal has ever lived.

32. The *average* lifespan of a group of animals is a calculation of the average length of time that individual animals in that particular group have lived. It is calculated by adding

<sup>9</sup> Jacobs Dep. Ex. 220 at 8 (SW-AND0069094).

<sup>10</sup> Kermes Dep. Ex. 104 at 4 (COV\_PPG\_00303).

<sup>11</sup> Williams Dep. Ex. 280 at 2 (Push Digital 10088).

<sup>12</sup> SeaWorld’s employee, Dr. Todd Robeck, [REDACTED]

[REDACTED] Robeck Dep. Tr. 84:15-17.

together the length of time that every individual animal in that group has lived and dividing by the number of individual animals in that group. SeaWorld employee Dr. Todd Robeck [REDACTED]

[REDACTED]

[REDACTED]

**2. Annual Survival Rate (ASR)**

33. The annual survival rate “is the probability of surviving from one year to the next.”<sup>14</sup> It is the statistic used by SeaWorld to calculate and substantiate its claims about the longevity of its captive orcas.<sup>15</sup> As described further below in Section III.C, SeaWorld’s use of ASR to determine longevity is flawed and invalid.

34. Lifespan and annual survival rate refer to different life-history parameters. Consequently, they are not interchangeable, nor can the latter be used to accurately describe the former.<sup>16</sup> As SeaWorld employee Scott Gass noted in his deposition, [REDACTED]

[REDACTED] - [REDACTED]

[REDACTED] - [REDACTED]

[REDACTED]

[REDACTED] - [REDACTED] - [REDACTED]

[REDACTED] - [REDACTED]

<sup>13</sup> Robeck Dep. Tr. 88:4-8.

<sup>14</sup> Robeck Dep. Tr. 83:13-15.

<sup>15</sup> SeaWorld’s Second Supplemental Response to Plaintiffs’ Second Set of Interrogatories at 13.

<sup>16</sup> See, e.g., Jacobs Dep. Tr. 60:16-61:9 [REDACTED]

<sup>17</sup> Gass Dep. Tr. 139-140.

### 3. Life Expectancy

35. Life expectancy is how long an animal can expect to live at any given time, and so changes as the animal ages. For example, a human can expect to live 79 more years at birth, but 52 more years at, for example, at age 30. Lifespan or longevity, in contrast, is how long the human actually lives. Life expectancy is a projection, or a potential value, while lifespan is a real, or known, value.<sup>18</sup>

### III. SEAWORLD CAPTIVE ORCAS DO NOT LIVE AS LONG AS WILD ORCAS<sup>19</sup>

#### A. Orcas That Have Lived And Died At SeaWorld Have an Average Lifespan of 15.9 Years

36. Orcas that have lived and died at SeaWorld—including both orcas born in captivity and orcas captured from the wild and housed at SeaWorld, but excluding all orcas that were born at SeaWorld and did not live past six months<sup>20</sup>—had an average lifespan of 15.9 years.<sup>21</sup> Within this group, male orcas had an average lifespan of 16 years, with actual lifespans ranging from approximately 4 years to 35 years of age. Females within this group had an average lifespan of 16.5 years, with actual lifespans ranging from approximately 8 months to 41 years of age.<sup>22</sup>

37. Some currently living SeaWorld orcas have lived longer than the maximum lifespan of the cohort of orcas that have lived and died at SeaWorld. However, these orcas are

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<sup>18</sup> Robeck Dep. Tr. 88:9-14 (agreeing that life expectancy is a “forward looking projection”).

<sup>19</sup> **Exhibit C** shows life history data for each orca that has lived at SeaWorld. The name, birth date, death date, and source (e.g., captured from the wild or captive-born) information in that chart is derived from information produced by SeaWorld in this case including, for example, Robeck Dep. Ex. 94 (SW000515).

<sup>20</sup> At least two orcas born at SeaWorld died within six months of being born. Robeck Dep. Ex. 94 (SW000515) at n.1. In addition, numerous orca stillbirths and miscarriages have occurred at SeaWorld. Life history data for these orcas are excluded from the calculations in this section.

<sup>21</sup> See **Exhibit D**.

<sup>22</sup> The sex of one orca, Kakela, is unknown. Kakela died in 1979 at age 2.

few and far between. The only currently living male orca at any SeaWorld park who is older than 28 years is Ulises, who is approximately 40 years old. Only two currently living female orcas at any SeaWorld park are older than 40 years: Katina, who is approximately 43 years old; and Corky, who is approximately 52 years old.

38. Even if all of the captive orcas that are currently alive at SeaWorld lived an additional 20 years from today—and there is no evidence to suggest that is at all likely to happen—the average lifespan of all of SeaWorld’s captive orcas—excluding those that did not live past six months—would still be only 25.5 years.<sup>23</sup> For females, the average lifespan would be 25.4 years, and for males, the average lifespan would be 26.5 years.

39. These known lifespans are far below SeaWorld’s own stated admission that “if a killer whale survives the first six months, a female’s average life expectancy is within the range of 46 to 50 years and a male’s is 30 to 38 years.”<sup>24</sup> In fact, SeaWorld admits that less than 8% of all orcas who have ever been kept captive at SeaWorld have lived past the age of 35.<sup>25</sup>

40. Only two male orcas at SeaWorld have exceeded 30 years of age: Tilikum and Ulises. Tilikum was believed to have been born in approximately 1981, and died in 2017. Ulises is believed to have been born in approximately 1977 and is still alive.

41. Only one female orca belonging to SeaWorld has exceeded 46 years of age: Corky, still living, is estimated to have been born in 1966 (making her, as of this writing, approximately 52 years old). [REDACTED]

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<sup>23</sup> See Exhibit E.

<sup>24</sup> See <https://seaworld.org/animals/all-about/killer-whale/longevity/> (accessed February 7, 2019).

<sup>25</sup> SeaWorld’s Objections and Responses to Plaintiffs’ First Set of Requests for Admission, Response to Request No. 11.

[REDACTED]

42. Only four other female orcas at SeaWorld have lived past the age of 30: (1) Katina, born in approximately 1976 and still living; (2) Kasatka, also born in approximately 1976 but died at the approximate age of 41 in 2017; (3) Orkid, captive-born in 1988 and still alive at 30 years old (notably, she is also the longest-lived of all captive-born orcas ever); and (4) Kayla, captive-born in 1988 and died earlier this year, in January 2019, at 30 years old.

43. The average lifespan of SeaWorld orcas who were born and who died in captivity is approximately 14.3 years. By comparison, the average lifespan of SeaWorld orcas that were captured in the wild and died in captivity is approximately 16.5 years.

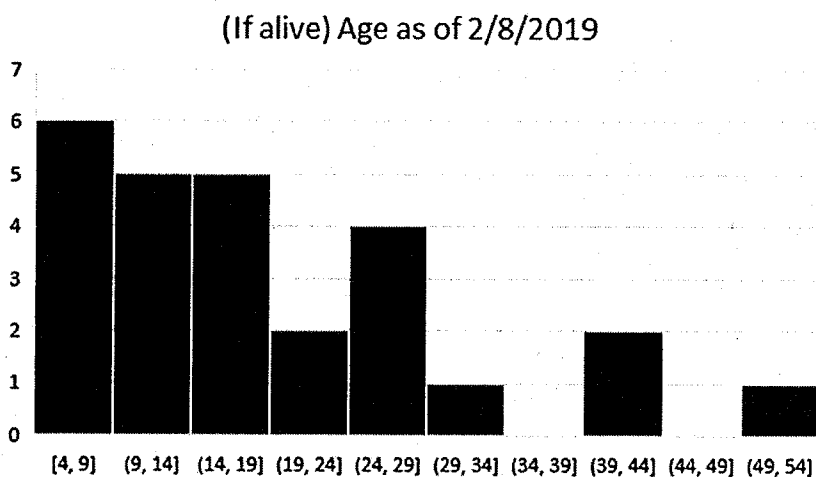
44. **Fig. 1** below (“Age at Death”) outlines the distribution of ages at death for SeaWorld’s captive orcas, including the two orcas who died before reaching six months of age. As is made clear, the vast majority of captive orcas who have died while in SeaWorld’s care died before reaching the age of 30. Only one, Kasatka, reached the age of 40.



<sup>26</sup> SW-AND0104733.

<sup>27</sup> *Id.* [REDACTED]

45. Fig. 2 below (“(If alive) Age as of 2/8/2019”) outlines the distribution of ages for those of SeaWorld’s captive orcas that are currently alive. The vast majority of these animals have not yet reached the age of 30. Only three, Corky, Ulises, and Katina, have exceeded the age of 40. Corky, at 52 years old, is a clear outlier in this group. When rounded to the nearest whole number, the median age of SeaWorld’s captive orcas alive today is 17 years old.



#### B. Wild Orcas Live Longer Than SeaWorld’s Captive Orcas

46. Wild orcas, on the other hand, are estimated to live as long as (that is, their maximum possible lifespan is estimated to be) 90 years of age.<sup>28</sup> This is an estimation based on 45 years of field data and the construction of actuarial tables based on these data. The average life expectancies for wild orcas that have survived the first six months of life have been determined to be 46 years for females and 31 years for males.<sup>29</sup> Even SeaWorld admits that “if a

<sup>28</sup> Ford, J.K.B. (2009). Killer whale: *Orcinus orca*. In W.F. Perrin *et al.* (eds.), *Encyclopedia of Marine Mammals*, 2<sup>nd</sup> edition (San Diego, California: Academic Press), pp. 650–657. It should be noted that this is the oldest *known* animal. Studies that have looked at killer whale age in the wild have been few, and of relatively short duration. Given the very small sample size it is my opinion that maximum longevity for orcas is likely to be higher than 90 years.

<sup>29</sup> Olesiuk, P.F. *et al.* (2005). *Life History and Population Dynamics of Northern Resident Killer Whales (Orcinus orca) in British Columbia*, Canadian Science Advisory Secretariat, at iii.



killer whale survives the first six months, a female's average life expectancy is within the range of 46 to 50 years and a male's is 30 to 38 years."<sup>30</sup>

47. To analogize to human lifespans, 90 years of age for orcas is the equivalent of 122 years for humans: the oldest known person in history lived to be 122. 46 years for female orcas and 31 years for male orcas is akin to the 80-year mean life expectancy for people in first-world countries. Typically, the better the standard of living available to citizens of a given country, the higher the life expectancy for those citizens will be. But a human in any country *could* live to 80 if they had access to the same standard of living. Differences in longevity therefore reflect, at least in part, differences in standards of living.

48. A study by Olesiuk et al. (2005) utilized photo identification to assess individual orcas in two populations that reside in waters off the coast of British Columbia and Washington. These populations, known as the "northern resident" and "southern resident" orca communities, respectively, "have been catalogued and monitored . . . providing a nearly complete record of births, deaths and other demographic events in these populations."<sup>31</sup> In a period of "unrestrained growth" from 1973 to 1996, female orcas in the northern resident population had a mean life expectancy of 46 years and maximum estimated longevity of 80 years; male orcas, on the other hand, had a mean life expectancy of 31 years and maximum estimated longevity of 60-70 years.<sup>32</sup>

49. Although the annual census taken of these wild populations found a decline in average life expectancy during the late 1990s and early 2000s, that decline was attributable to non-ideal environmental factors. During that period, from 1996 to 2004, the life expectancies of

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<sup>30</sup> <https://seaworld.org/animals/all-about/killer-whale/longevity/>

<sup>31</sup> Olesiuk et al. (2005) at 2.

<sup>32</sup> *Id.*

females and males declined to 30 and 19 years, respectively.<sup>33</sup> Other studies note that this period coincides with “a significant reduction in the availability of the whales’ primary prey, Chinook salmon,”<sup>34</sup> and thus was a likely factor in the orca population’s decline in number and longevity.<sup>35</sup> If SeaWorld’s captive orcas’ lifespans are comparable to the lifespans of this wild orca population *in decline*, that is further evidence that conditions at SeaWorld shorten orca lifespans in the same way that environmental challenges and food shortages can shorten the lifespans of certain wild orca populations. None of this changes the fact that, in good environmental conditions, wild orcas are estimated to live as long as 80 or 90 years, as noted above, with average life expectancies of 30-50, depending on sex.

50. Other measures of estimated longevity corroborate the conclusion that wild orcas live longer than captive orcas. For example, a 1995 peer-reviewed article by Small and DeMaster studied the annual survivorship rates of orcas (among other marine mammal species).<sup>36</sup> The DeMaster 1995 paper concluded that captive orcas had significantly lower annual survival rates than the Pacific Northwest populations of wild orcas noted above. Specifically, this paper determined that the overall mortality rate for captive orcas at that time was at least two and a half times as high as that of free-ranging orcas and age- and sex-specific annual mortality rates ranged from two to six times as high. This paper only looked at orcas that survived the first six months of life for both samples (wild and captive).

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<sup>33</sup> *Id.*

<sup>34</sup> Towers, J.R. et al. (2015). *Photo-identification Catalogue and Status of the Northern Resident Killer Whale Population in 2014*, Canadian Technical Report of Fisheries and Aquatic Sciences 3139, p. 5.

<sup>35</sup> Indeed, the Southern Resident wild orca population has been added to the federal endangered species list.

<sup>36</sup> Small, R.J. & DeMaster, D.P. (1995). *Survival of Five Species of Captive Marine Mammals*, Marine Mammal Science.

51. A study published in 2015<sup>37</sup> used several methods to assess survivorship, including a methodology applied extensively in the medical field to measure the fraction of patients who survive post-treatment. The work was undertaken by two former SeaWorld orca trainers who went on to become scientists, and noted that while captive orca survival rates had improved in recent years, “survival to age milestones [were] remarkably poorer for captive killer whales than for wild whales.”<sup>38</sup>

**C. Dr. Robeck’s 2015 Article Does Not Demonstrate That Captive Orcas Live Just As Long As Wild Orcas.**

52. I understand that SeaWorld takes the position that its statements regarding how long its captive orcas live relative to wild orcas are accurate based on its employee Dr. Todd Robeck’s analysis of annual survival rates.<sup>39</sup> As discussed in the following paragraphs, Dr. Robeck’s analysis is flawed and, in any event, does not support the SeaWorld statements challenged by Plaintiffs in this case.

53. In 2015, Dr. Todd Robeck published a paper in the *Journal of Mammology* entitled *Comparisons of life-history parameters between free-ranging and captive killer whale (Orcinus orca) populations for application toward species management* (“Robeck 2015”). Dr. Robeck is the Vice President of Theriogenology at SeaWorld,<sup>40</sup> and he has worked for SeaWorld since 1990.<sup>41</sup> Two of Dr. Robeck’s co-authors on the 2015 paper—Michael Scarpuzzi and Justine O’Brien—worked as the director of animal training and a contractor for SeaWorld,

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<sup>37</sup> Jett, J. & Ventre, J. (2015). *Captive killer whale (Orcinus orca) survival*, Marine Mammal Science.

<sup>38</sup> *Id.* at 12.

<sup>39</sup> *See, e.g.*, SeaWorld’s Second Supplemental Response to Plaintiffs’ Second Set of Interrogatories, Responses to Interrogatory Nos. 2, 6.

<sup>40</sup> Robeck Dep. Tr. 30:10-12.

<sup>41</sup> Robeck Dep. Tr. 20:15-16.

respectively. The third co-author—Kevin Willis—also worked in the zoo industry, at the Minnesota Zoo.

54. Using age data collected for SeaWorld captive orcas and data collected by other researchers for the wild orca populations in the northeastern Pacific Ocean described above, Dr. Robeck employed statistical methods to project the annual survival rate, median life expectancy, and average life expectancy for the captive and wild populations considered. At his deposition, Dr. Robeck asserted that he is “the only one in the world that has bothered to accurately compare the two populations between wild and animals in the zoologic setting.”<sup>42</sup> But Dr. Robeck’s analysis is not an “accurate” comparison for a number of reasons. As a result, the conclusions reached in the Robeck 2015 paper cannot be used to support SeaWorld’s statement that orcas in captivity live just as long as orcas in the wild.

1. **The Robeck 2015 data supports only limited conclusions, not the sweeping statement that orcas in captivity live just as long as orcas in the wild.**

55. The Robeck 2015 article purports to “present evidence for similar life-history parameters of free-ranging and captive killer whale populations” and demonstrate that “[o]verall survivorship patterns of [captive SeaWorld orcas] from 2000 to 2015 did not differ from that of [certain wild orca populations].”<sup>43</sup> And at his deposition in this case, Dr. Robeck testified that his 2015 article demonstrates that there is “no difference” between the average life expectancy of SeaWorld captive orcas and the average life expectancy of wild orcas.<sup>44</sup> That assertion does not align with the data presented in the Robeck 2015 paper.

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<sup>42</sup> Robeck Dep. Tr. 133:16-19.

<sup>43</sup> Robeck (2015) at 1055, 1062.

<sup>44</sup> Robeck Dep. Tr. 104:2-7.

56. Of note, the Robeck 2015 paper does not compare *actual* lifespans of captive orcas to *actual* lifespans of wild orcas. The Robeck 2015 paper does *not* conclude that lifespans of orcas in captivity are equivalent to lifespans of wild orcas; indeed, the paper does not mention “lifespans” at all.

57. Moreover, the specific conclusion of the Robeck (2015) paper is that the annual survival rates for (1) SeaWorld orcas during the 2000-2015 time period, and (2) captive-born SeaWorld orcas during the 1985-2015 time period, were not statistically different from the calculated annual survival rates for three specific wild orca populations covering the 1975-2015 time period. Tellingly, the Robeck 2015 paper also concluded that the annual survival rates for (1) SeaWorld orcas during the 1965-1985 time period, and (2) SeaWorld orcas during the 1985-2000 time period, were *lower* than any of the wild orca populations during that time period.<sup>45</sup>

**2. The calculated average life expectancy for captive-born orcas in the Robeck 2015 paper does not align with known data.**

58. The Robeck 2015 paper calculated average orca life expectancy for captive-born animals at SeaWorld as 47.7 years. Based on this calculation, SeaWorld claims that captive orca life expectancy now matches that seen in the wild. But the flaws in this conclusion are obvious: *only two captive-born whales at SeaWorld have ever exceeded 30 years of age*, and the average age at death for the ten captive-born orcas who have died is 14.3 years (excluding the two captive-born orcas who died before reaching the age of six months). [REDACTED]

[REDACTED]

[REDACTED]

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<sup>45</sup> Robeck (2015) Table 2.

<sup>46</sup> Robeck Dep. Tr. 268:1-3.

59. As noted earlier, the oldest captive-born whale is Orkid, who reached 30 years of age in late 2018 (the next oldest, Kayla, is two months younger than Orkid, but recently died). There are now 17 living captive-born orcas in SeaWorld's collection, while a dozen more have died since the first successful birth in 1985. Most died before they reached the age of 20; in addition, there have been numerous stillbirths or miscarriages. SeaWorld's calculated average life expectancy for its captive-born orcas of almost 50 years cannot be valid in light of this known data.

**3. The Robeck 2015 paper employs a flawed statistical method to calculate average life expectancy.**

60. Robeck et al. (2015) used annual survivorship rates (ASR) to calculate average life expectancy. This calculation used an equation specifically cautioned against as an accurate method for assessing life expectancy by Dr. Douglas DeMaster in an earlier paper (DeMaster and Drevenak, 1988). Nevertheless, Robeck et al. cited DeMaster and Drevenak in *support* of using this equation.

61. DeMaster and Drevenak specifically cautioned against using this equation because it is extremely sensitive to minor changes in ASR—*i.e.*, a small percentage change in ASR can add or subtract many years from projected life spans—and because two required assumptions are typically violated by most mammalian datasets. The first required assumption is that ASR must remain constant over time. On its face, the Robeck 2015 paper violated this assumption because it determined that ASR improved over time.<sup>47</sup> As an analogy, if an engineer builds a bridge over the course of many years, she relies on “an inch” to be a measurement that stays the same. If “an inch” gets longer or shorter every year, the bridge cannot be built. Yet

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<sup>47</sup> See Robeck (2015) at Table 2.

this is what Robeck et al. did: they employed changing measurements of ASR over time to build an average life expectancy calculation. As a result, the calculation is inherently flawed.

62. The second required assumption is that ASR must remain constant over age and sex classes. However, for most mammals, including humans, survivorship is a bell curve, and so this assumption does not logically make sense. Older and younger animals show lower survivorship than “prime-of-life” animals, and females tend to show higher survivorship than do males. To use another analogy, the assumption of constant ASR would lead to a frail 95-year-old human having the same likelihood of dying in the next year as a hearty 20-year-old in the prime of their lives. This flawed approach cannot form the basis of sound average life expectancy conclusions.<sup>48</sup>

**4. The Robeck 2015 paper draws conclusions from a flawed data set.**

63. The conclusions in the Robeck (2015) paper are based on misleading comparisons of cherry-picked data sets. The paper compares the best data from SeaWorld—data drawn from later years—to the full 40-year dataset for the wild orca populations—including the late 1990s-early 2000s time period corresponding to the severe environmental challenges described above. A more valid comparison would have been between the complete datasets from both environments (captive/wild). That way, the worst years for both environments would have been included in the comparison and no sample would have had the advantage of excluding data that would have skewed the survivorship results.

64. Robeck et al. also included the oldest animals in the SeaWorld sample but eliminated the oldest animals from the free-ranging sample—that is, all whales born before the

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<sup>48</sup> As made clear at Dr. Robeck’s deposition, [REDACTED]  
[REDACTED]  
[REDACTED] Robeck Dep. Tr. 118:2.

early 1970s when the long-term field study in the northeast Pacific began. Robeck et al. left out animals of uncertain age and no known birth years from the wild dataset, but kept SeaWorld orcas captured from the wild—who also are of an uncertain age and with no known birth years. This method biased survivorship data downward for wild orca populations and biased the survivorship data upward for SeaWorld captive orcas. In short, the authors retained data in the captive dataset that was most supportive of their bias, while rejecting data from the free-ranging dataset that was least supportive of their bias. This inconsistent analysis necessarily skewed the estimated longevity of the SeaWorld animals upward, while skewing the longevity of free-ranging orcas downward.

65. Indeed, the Robeck 2015 paper concluded that “the vast majority (>97%)” of free-ranging orcas die before the age of 50—based on a dataset that deliberately excluded older wild orcas. The oldest female now alive in the wild populations studied is believed to be approximately 80. At the very least, she and several other living whales are at least 60, since they were first identified as adults (by size and behavior) when the study began 45 years ago, and so must have been at least 15 years of age at that time. However, Robeck et al. did not consider these whales in their calculations and then drew conclusions as if deliberately excluding them from a dataset meant they did not exist at all.

66. In addition, as noted above, two of the three free-ranging populations considered by Robeck et al. are listed as endangered under the United States Endangered Species Act or threatened under the Canadian Species at Risk Act, suggesting captivity has similar impacts on orca survivorship as degraded habitat. Both the northern resident and southern resident populations have had to deal with significant threats over the years, including depletions of both populations through live captures for the dolphinarium trade in the 1960s and 1970s. In the



1990s and 2000s, high levels of pollutants<sup>49</sup> and shortages of prey, especially salmon,<sup>50</sup> became major threats. Analogizing to humans, to determine if a human community was healthy and robust, one might compare the expected lifespan of that community to other human populations. The equivalent to Robeck et al.'s approach would be to compare the subject human community to populations in post-earthquake Haiti or famine-struck Ethiopia, and conclude that because life expectancies are similar to these other populations, the subject human population is thriving.

67. When compared just to the southern Alaska residents, a healthy population never targeted for capture, SeaWorld's orcas, especially their older animals, compare less favorably.<sup>51</sup> Therefore, captive orcas are doing only as well as orca populations currently at risk of local extinction from a wide range of threats such as pollution and starvation—which is hardly something to boast about.

**D. SeaWorld employees acknowledge the misleading nature of SeaWorld's statements regarding orca lifespans.**

68. Evidence adduced in this case shows that even SeaWorld employees acknowledge that SeaWorld's statements regarding captive orca lifespans are at least misleading, if not false.

69. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

<sup>49</sup> Ross, P.S. et al. (2000). *High PCP Concentrations in Free-Ranging Pacific Killer Whalesm, Orcinus orca: Effects of Age, Sex and Dietary Preference*, Marine Pollution Bulletin (Vol. 40, No. 6).

<sup>50</sup> Ford et al., 2009.

<sup>51</sup> See Matkin, G.O. et al. (2014). *Life history and population dynamics of southern Alaska resident killer whales (Orcinus orca)*, Marine Mammal Science, 30(2); Robeck (2015) at Table 2.

<sup>52</sup> Robeck Dep. Tr. 112:9-24.

[REDACTED]

70. [REDACTED]

71. These and the other examples cited throughout my report are provided for illustrative purposes, but there are many other examples reflected in the evidentiary record. I may reference some of those other examples in my testimony at trial.

**IV. CONCLUSION**

72. It is my opinion that the scientific data and literature to date demonstrate that orcas in captivity at SeaWorld do not live as long as wild orcas. The Robeck 2015 paper on which SeaWorld relies for the challenged statements is scientifically flawed. It is thus my expert opinion that, from a scientific perspective, SeaWorld's statements regarding the lifespans of its captive orcas relative to the lifespans of wild orcas are at least misleading, if not outright false.

[REDACTED]  
\_\_\_\_\_  
Dr. E.C.M. Parsons  
February 7, 2019

<sup>53</sup> Dold Ex. 125 at 1 (SW-AND0250689).

<sup>54</sup> Jacobs Dep. Tr. 28:18-23, 230:14-231:4 ([REDACTED])

**Exhibit A: Curriculum Vitae**

**CURRICULUM VITAE**

**E.C.M. Parsons** BA (*hons*) MA PhD FRBS FRGS FMBA\*

\*Fellow of the Royal Society for Biology, Fellow of the Royal Geographical Society and Fellow of the Marine Biological Association

**RESEARCH INTERESTS**

- **Marine Mammal Science** - biology (ecology, behaviour and physiology/anatomy) and conservation (whaling issues, impacts of pollutants / noise and anthropogenic activities, public attitudes)
- **Sustainable Marine Resources Use** – marine ecotourism, reducing anthropogenic impacts human activities in the oceans
- **Conservation Policy** – marine environmental and endangered species protection
- **Public Understanding of Conservation**– Public understanding of endangered species statuses, effective communication techniques, use of social media for conservation

**KEY ACHIEVEMENTS**

- 150 peer-reviewed publications in academic journals or peer-reviewed proceedings volumes and 10 book chapters.
- 25 years of marine conservation science & policy experience.
- Lead author of an 18 chapter textbook on marine mammal biology and conservation (2012) and co-editor of a second academic book (2015).
- H index of 32, with many some of the most downloaded/shared/ highly cited articles in the top journals in my field.
- Have been a Director/Governor of the Society for Conservation Biology, the Society for Marine Mammalogy and the American Cetacean Society – the main professional scientific societies in my field.
- Managed or co-managed six large international conservation conferences (International Marine Conservation Congress & International Congress of Conservation Biology) with budgets of \$0.7-0.5 million p.a. and multiple committees and staff; 850-2200 attendees.
- Advised 25 MS students to graduation at George Mason University with 53% of thesis track students winning awards for their research. Advised 16 PhD students to graduation at George Mason University with 73% of students being nominated or winning awards for their research. On the committees of a further 18 graduated MS students and 16 PhD students.
- Associate editor for two major journals in my field and on the editorial board for a third. Guest editor for five special issues in journals.
- A member of the Scientific Committee of the International Whaling Commission since 1999, co-Convener of the Environmental Concerns Sub-committee and currently Convener of the Whale Sanctuaries Working Group.
- Raised over \$2.5 million in grants, over \$1million while at George Mason University.

## Exhibit A: Curriculum Vitae

- Wrote/developed a new BS and BA environmental degree programs. Wrote/developed the highly-regarded Smithsonian Conservation Semester courses. Wrote/developed 7 minors, 2 MS degree concentrations and 3 concentrations for other degree programs as well as an accelerated MS program.
- Winner of *Teacher of Distinction Award*. Nominated for teaching excellence awards 5 times, nominated for advising awards 4 times. Nominated for SHEV “Outstanding Faculty Award” & John Toups Medal for Excellence in Teaching.
- George Mason University’s submitted candidate to the US Professor of the Year Award in 2011 (<http://www.usprofessoroftheyear.org/>)
- Senior correspondent for the world’s leading marine science blog.
- Weekly broadcaster for a leading marine conservation science podcast.
- Management (program, budget, staff & program) experience
- Ranked 1<sup>st</sup> or 2<sup>nd</sup> in both research and teaching in annual departmental evaluations for nearly a decade.
- Recognised by the Queen of England for my work in Conservation.

### EDUCATION & QUALIFICATIONS

1988-91: St. Peter's College, Oxford University – BA *hons* & MA\* (*Oxon*) (Zoology)  
[Class 2i honours ~ *magna cum laude*]

Thesis title: The effect of tannic acid on the feeding behaviour and growth of the 5th instar locust *Schistocerca gregaria*

1993-96: Swire Institute of Marine Science, University of Hong Kong - PhD (Marine Biology)

Thesis title: Hong Kong’s cetaceans: the biology, ecology & behaviour of *Sousa chinensis* and *Neophocaena phocaenoides*.

\*Conferred in 1997

### EMPLOYMENT HISTORY

**May 2018 – present**                      **Marine Conservation Science & Policy Consultant**

*Consulting for: Natural Resources Defense Council; Animal Welfare Institute; World Animal Protection; Oceana*

**Sept 2018 - present**                      **Affiliate Professor**

**August 2008 to May 2018**              **Associate Professor**

**June 2005 to July 2008.**                **Assistant Professor**

- Department of Environmental Science & Policy, George Mason University, Fairfax, Virginia

- *Director: Undergraduate Program in Environmental Science [2005- 2017]*
  - *Initiated, developed and managed undergraduate program in environmental science and associated minors. Enrolment from 0 to 150 students in 5 years.*
- *Deputy Director Smithsonian Mason School of Conservation*
- *Research lab manager: Managed lab of up to 25 graduate student researchers. Currently 25 graduated MS students; 14 PhD students.*
- *Raised US\$1.159 million in research, travel and meeting funds. Helped secure an additional \$202,550 in fellowships and program funding for graduate student and \$132,109 in additional graduate student research funds*

**Exhibit A: Curriculum Vitae**

**September 2016 to present. Research Affiliate** –Institute of Biodiversity, Animal Health & Comparative Medicine, University of Glasgow.

**October 2008 to present. Research Associate** –Smithsonian Institute for Conservation Biology, Front Royal, VA.

**August 2003 to May 2005. Adjunct Professor**  
– Department of Environmental Science and Policy, George Mason University, Fairfax, Virginia.

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**March 2003 to present Freelance Scientific Consultant (SEAQuEST consulting)**

- *Providing scientific advice on marine mammal and environmental issues to a variety of wildlife/environmental NGOs including:  
Whale & Dolphin Conservation; Humane Society of the United States; Humane Society International; World Society for the Protection of Animals; World Animal Protection; Natural Resources Defence Council; Animal Welfare Institute; Oceana*

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**July 2016 - present. Visiting Senior Lecturer**

- *Teaching summer course in marine mammal biology & conservation*

**July 2011 – 2015. Senior Research Associate**

**October 2001 – July 2011. Research Associate** – University Marine Biological Station, Millport, Isle of Cumbrae, Glasgow, Scotland.\*

- *Development and teaching of summer courses.*
- *Graduate student supervision.*
- *Conducting marine mammal-related research.*

*\*In 2015, UMBSM was taken over by the Field Studies Council and became an education only facility*

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**June 1998 to February 2003. Research & Education Director** – The Hebridean Whale and Dolphin Trust, Tobermory, Isle of Mull, Scotland.

- *Co-ordinated local and regional marine environmental education programmes;*
- *Co-ordinating, fund-raising and conducting research on cetaceans and other marine mammals in western Scotland.*
- *Managed up to 18 administrative and research/education staff and interns.*
- *Raised over \$1million (over £942,000). Managed budget of up to \$0.75 million p.a.*

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**Sept. 1997 - June 1998. Lecturer** - Cannington College, Somerset, UK.

*Instructor for a variety of biology and science-based undergraduate courses. Including:*

- *Animal welfare*
- *UK wildlife law*
- *Mammalian anatomy & physiology*
- *Anatomy & physiology*
- *Wildlife rescue and rehabilitation*
- *Introductory chemistry & biology*
- *Cell biology*

**Exhibit A: Curriculum Vitae**

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**Jan. 1997 to Aug. 1997. Post-Doctoral Researcher/Consultant** - Veterinary Department, Ocean Park, Hong Kong.

- *Conducted a review on the disease melioidosis in captive cetaceans, in particular symptoms and epidemiology;*
- *Investigated the potential impact of bacterial contamination in Hong Kong's waters upon local wild cetaceans.*

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**Dec. 1993-Dec. 1996. Researcher** - Swire Institute of Marine Science, Shek O, Hong Kong.

- *Responsible for setting up a multi-disciplinary research project on cetaceans in Hong Kong waters. Formulated a dolphin stranding report scheme.*
- *Developed a conservation and management strategy for resident Indo-Pacific hump-backed dolphins and finless porpoises in Hong Kong.*

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**July 1993-Aug. 1993. Research & Assistant**- Dr. R. Payne, Ocean Alliance, London

- *Researcher and fact-checker for the book "Amongst Whales"*

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**Nov. 1992 - June 1993. Research Assistant** - Seawatch Foundation, Oxford, UK.

- *Analysed data for land-transect cetacean surveys in coastal waters of western Scotland.*
- *Helped to produce a slide pack for the identification of cetaceans.*

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**Nov. 1991 - June 92. Biology Teacher and House Tutor**- Christ's Hospital School, W. Sussex, UK.

- *Taught biology and introductory science to high school students.*
- *House tutor with various administrative and disciplinary responsibilities.*

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**June 1991 - Aug. 1991. Research Assistant** - Whale Unit, University of Cape Town, South Africa.

- *Observer for a land-based census of a migrating population of humpback whales.*

Exhibit A: Curriculum Vitae

## RESEARCH ACTIVITY

### SUMMARY

#### Publications:

- 147 peer-reviewed publications in academic journals and a further 3 peer-reviewed papers in proceedings volumes.
- Lead author of 18 chapter textbook on marine mammal biology and conservation (2012) and co-editor of a second academic book (2015).
- Published 10 book chapters and 26 academic encyclopedia entries.
- Submitted 61 papers to the International Whale Commission Scientific Committee.
- Published 10 papers in the top journal\* for “marine sciences and fisheries”, 6 papers in the top two journals for “biodiversity and conservation”, 8 papers in the no 5 journal for “environmental law & policy”

\*Google scholar rankings

#### H index:

- Google Scholar h-index: 32

ORCID <https://orcid.org/0000-0002-0464-1046>

GOOGLE SCHOLAR: [https://scholar.google.com/citations?user=0-go\\_N4AAAAJ&hl=en](https://scholar.google.com/citations?user=0-go_N4AAAAJ&hl=en)

### BOOKS

1. **Parsons, E.C.M.**, Bauer, A., McCafferty, D., Simmonds, M.P. and Wright, A.J. 2012. *An Introduction to Marine Mammal Biology and Conservation*. Jones & Bartlett Publishing: Sudbury, MA and London, England.
2. Draheim, M.M, Madden, F., McCarthy, J.B. and **Parsons, E.C.M.** (Eds). 2015. *Human-Wildlife Conflict: Complexity in the Marine Environment*. Oxford University Press, Oxford, UK.

### PEER-REVIEWED PUBLICATIONS

1. Draheim, M.M., **Parsons, E.C.M.**, Crate, S.A. and Rockwood, L. (in press). Perspectives on the management of urban coyotes. *Journal of Urban Ecology*: in press.
2. Fazio, J., Freeman, E.W., Bauer, E. Rockwood, L. and **Parsons, E.C.M.** (2019). Evaluation of management in North American zoos to enhance breeding success of the fishing cat (*Prionailurus viverrinus*) *ex situ* population. *Zoo Biology*: in press.
3. Shah, A. and **Parsons, E.C.M.** (2019). Lower concern about “biodiversity” in members of the public in Washington DC area, than “wilderness”, “natural places” and key charismatic megafauna and/or charismatic habitats. *Applied Environmental Education & Communication*: in press.

**Exhibit A: Curriculum Vitae**

4. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** (2019). State Of the Cetacean Environment Report (SOCER) 2018. *Journal of Cetacean Research and Management* 20 (Suppl.): in press.

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5. Amerson, A. and **Parsons, E.C.M.** (2018). Evaluating the sustainability of the gray whale-watching industry along the Pacific Coast of North America. *Journal of Sustainable Tourism* 26(8): 1362-1380.
6. Brown, D., Robbins, J., Sieswerda, P.L., Schoelkopf, R., and **Parsons, E.C.M.** (2018). Humpback whale (*Megaptera novaeangliae*) sightings in the New York-New Jersey Harbor Estuary. *Marine Mammal Science* 34(1): 250-257.
7. Gleason, C. and **Parsons, E.C.M.** (2018). To educate or not to educate: how the lack of education programs on whale-watching vessels can impact whale conservation and tourism in the Dominican Republic. *Tourism in Marine Environments* 13(2-3): 155-164.
8. Naylor, W. and **Parsons, E.C.M.** (2018). An online survey of public knowledge, attitudes, and perceptions towards whales and dolphins, and their conservation. *Frontiers in Marine Science* 5: 153. doi: 10.3389/fmars.2018.00153
9. **Parsons, E.C.M.** (2018). Dark times lie ahead of us and there will be a time when we must choose between what is easy and what is right" - the sad case of vaquita, the Trump administration and the removal of protections for whales and dolphins. *Journal of Environmental Studies and Sciences* 8(4): 407-410.
10. **Parsons, E.C.M.** and Brown, D. (2018). Recent advances in whale-watching research: 2016-2017. *Tourism in Marine Environments* 13(1): 41-51.
11. **Parsons, E.C.M.** and Rose, N.A. (2018). The Blackfish Effect – citations, hearings, permits, and bills in the face of changing public opinion on captive cetaceans. *Tourism in Marine Environments* 13(2-3): 73–83.
12. **Parsons, E.C.M.** and Smith, C. (2018). Recent advances in whale-watching research: 2017-2018. *Tourism in Marine Environments* 13(2-3): 175-185.
13. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** (2018). State Of the Cetacean Environment Report (SOCER) 2017. *Journal of Cetacean Research and Management* 19 (Suppl.): 276-285.

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14. Galletti Vernazzani, B., Brownell, R.L., Burkhardt-Holm, P., Cabrera, E., Iñíguez, M., Luna, F., **Parsons, E.C.M.**, Ritter, F., Rodríguez-Fonseca, J., Sironi, M., and Stachowitsch, M. 2017. Management and conservation at the International Whaling Commission: a dichotomy sandwiched within a shifting baseline. *Marine Policy* 83: 164-171.



## Exhibit A: Curriculum Vitae

15. O'Bryhim, J.R., **Parsons, E.C.M.** and Lance, S.L. 2017. Forensic species identification of elasmobranch products sold in Costa Rican markets. *Fisheries Research*: 186: 144-150.
  16. Oester, S., Cigliano, J.A., Hind-Ozan, E.J., and **Parsons, E.C.M.** 2017. Why conferences matter – an example from the International Marine Conservation Congress. *Frontiers in Marine Science* 4: 257. doi: 10.3389/fmars.2017.00257
  17. **Parsons, E.C.M.** 2017. Impacts of navy sonar on whales and dolphins: now beyond a smoking gun. *Frontiers in Marine Science* 4: 295. doi: 10.3389/fmars.2017.00295
  18. **Parsons, E.C.M.** and Brown, D. 2017. Recent advances in whale-watching research: 2015-2016. *Tourism in Marine Environments* 12(2): 125-137.
  19. **Parsons, E.C.M.**, MacPherson, R. and Villagomez, A. 2017. Marine “conservation”: you keep using that word but I don't think it means what you think it means. *Frontiers in Marine Science* 4: 299. doi: 10.3389/fmars.2017.00299
  20. Rose, N.A., Snusz, G.H., Brown, D.M., and **Parsons, E.C.M.** 2017. Improving captive marine mammal welfare in the United States: science-based recommendations for improved regulatory requirements for captive marine mammal care. *International Journal of Wildlife Law & Policy* 20(1): 38-72.
  21. Schwartz, K.R., **Parsons, E.C.M.**, Rockwood, L. and Wood, T.C. (2017). Integrating *in-situ* and *ex-situ* data management processes for biodiversity conservation. *Frontiers in Ecology and Evolution* 5: 120. doi: 10.3389/fevo.2017.00120
  22. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2017. Tourists' perspectives on dolphin-watching in Bocas del Toro, Panama. *Tourism in Marine Environments* 12(2): 79-94.
  23. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2017. State Of the Cetacean Environment Report (SOCER) 2016. *Journal of Cetacean Research and Management* 18 (Suppl.): 316-329.
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24. Cigliano, J.A., Bauer, A., Draheim, M.M., Foley, M., Lundquist, C.J., McCarthy, J.B., Patterson, K.W., Wright, A.J. and **Parsons, E.C.M.** 2016. The Kraken in the Aquarium: questions that aren't being asked but urgently need to be addressed in order to advance marine conservation. *Frontiers in Marine Science* 3: 174. doi: 10.3389/fmars.2016.00174.
  25. Crerar, L.D., Freeman, E.W., Domning, D.P. and **Parsons, E.C.M.** 2016. Illegal trade of marine mammal bone exposed: simple test identifies bones of “mermaid ivory” or Steller's sea cow (*Hydrodamalis gigas*). *Frontiers in Marine Science* 3: 272. doi: 10.3389/fmars.2016.00272

**Exhibit A: Curriculum Vitae**

26. Crerar, L., **Parsons, E.C.M.** and Domning, D. 2016. Serendipity in research—investigation into illegal wildlife trade discovers a new population of Steller's sea cows. *Biology Letters* 12(2): 20150670, 1-2.
27. Cella, E.L., **Parsons, E.C.M.** and Rockwood, L.L. 2016. Non-governmental organizations and Government agencies lead in cultivating positive sea turtle conservation attitudes. *Human Dimensions in Wildlife* 21(5): 391-402.
28. Favaro, B., Oester, S., Cigliano, J.A., Cornick, L., Hind, E., **Parsons, E.C.M.** and Woodbury, T.J. 2016. Your science conference should have a code of conduct. *Frontiers in Marine Science* 3: 103. doi: 10.3389/fmars.2016.00103.
29. O'Bryhim, J.R., **Parsons, E.C.M.**, Gilmore, M.P. and Lance, S. 2016. Evaluating support for shark conservation among artisanal fishing communities in Costa Rica. *Marine Policy* 71: 1-9.
30. **Parsons, E.C.M.** 2016. "Advocacy" and "activism" are not dirty words – how activists can better help conservation scientists. *Frontiers in Marine Science* 3: 229. doi: 10.3389/fmars.2016.00229
31. **Parsons, E.C.M.** 2016. Why IUCN should replace "data deficient" conservation status with a precautionary "assume threatened" status – a cetacean case study. *Frontiers in Marine Science* 3: 193. doi: 10.3389/fmars.2016.00193.
32. **Parsons, E.C.M.** and MacPherson, R. 2016. Have you got what it takes? Looking at skills and needs of the modern marine conservation practitioner. *Journal of Environmental Studies and Sciences* 6: 515-519.
33. **Parsons, E.C.M.** and Scarpaci, C. 2016. Recent advances in whale-watching research: 2014-2015. *Tourism in Marine Environments* 11(4): 251-262.
34. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2016. Boat operators in Bocas del Toro, Panama display low levels of compliance with national whale-watching regulations. *Marine Policy* 68: 221-228.
35. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2016. State Of the Cetacean Environment Report (SOCER) 2015. *Journal of Cetacean Research and Management* 17 (Suppl.): 331-343.
36. Würsig, B., **Parsons, E.C.M.**, Piwetz, S. and Porter, L. 2016. The behavioral ecology of Indo-Pacific humpback dolphins in Hong Kong. *Advances in Marine Biology* 73: 65-90.

**Exhibit A: Curriculum Vitae**

37. Avila, I.C., Correa, L.M. and **Parsons, E.C.M.** 2015. Whale-watching activity in Bahía Málaga, Colombian Pacific, and its effect on humpback whale (*Megaptera novaeangliae*) behavior. *Tourism in Marine Environments* 11: 19-32.
38. New, L., Hall, A.J., Harcourt, R., Kaufman, G., **Parsons, E.C.M.**, Pearson, H.C., Cosentino, A.M. and Schick, R.S. 2015. The modelling and assessment of whale-watching impacts. *Ocean & Coastal Management* 115: 10-16.
39. O'Bryhim, J. and **Parsons, E.C.M.** 2015. Increased knowledge about sharks increases public concern about their conservation. *Marine Policy* 56: 43-47.
40. **Parsons, E.C.M.** 2015. So you think you want to run an environmental conservation meeting? Advice on the slings and arrows of outrageous fortune that accompany academic conference planning. *Journal of Environmental Studies and Sciences* 5: 735-744.
41. **Parsons, E.C.M.**, Baulch, S., Bechshoft, T., Bellazzi, G., Bouchet, P., Cosentino, A.M., Godard-Codding, C.A.J., Gulland, F., Hoffmann-Kuhnt, M., Hoyt, E., Livermore, S., MacLeod, C.D., Matrai, E., Munger, L., Ochiai, M., Peyman, A., Recalde-Salas, A., Regnery, R., Rojas-Bracho, L., Salgado-Kent, C.P., Slooten, E., Wang, J.Y., Wilson, S.C., Wright, A.J., Young, S., Zwamborn, E. and Sutherland, W.J. 2015. Key research questions of global importance for cetacean conservation. *Endangered Species Research* 27: 113-118.
42. **Parsons, E.C.M.**, DellaSala, D.A. and Wright, A.J. 2015. Is marine conservation science becoming irrelevant to policy makers? *Frontiers in Marine Science* 2: 102 doi: 10.3389/fmars.2015.00102
43. **Parsons, E.C.M.** and Wright, A.J. 2015. The good, the bad and the ugly science: examples from the marine science arena. *Frontiers in Marine Science* 2: 33. doi: 10.3389/fmars.2015.00033
44. Rose, N.A. and **Parsons, E.C.M.** 2015. "Back off, man, I'm a scientist!" When marine conservation science meets policy. *Ocean & Coastal Management* 115: 71-76.
45. Scarpaci, C. and **Parsons, E.C.M.** 2015. Recent advances in whale-watching research: 2013-2014. *Tourism in Marine Environments* 11: 79-86
46. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2015. State Of the Cetacean Environment Report (SOCER) 2014. *Journal of Cetacean Research and Management* 16 (Suppl.): 268-276.
47. Wright, A., Veríssimo, D., Pilfold, K., **Parsons, E.C.M.**, Ventre, K., Cousins, J., Jefferson, R., Koldewey, H., Llewellyn, F. and McKinley, E. 2015. Competitive outreach in the 21st Century: why we need conservation marketing. *Ocean & Coastal Management* 115: 41-48.

**Exhibit A: Curriculum Vitae**

48. Crerar, L.D., Crerar, A.P., Domning, D.P. and **Parsons, E.C.M.** 2014. Rewriting the history of an extinction - was a population of Steller's sea cows (*Hydrodamalis gigas*) at St. Lawrence Island also driven to extinction? *Biology Letters* 10: 20140878, 1-5.
  49. Luksenburg, J.A. and **Parsons, E.C.M.** 2014. Attitudes towards marine mammal conservation issues before the introduction of whale-watching: a case study in Aruba (southern Caribbean). *Aquatic Conservation* 24: 135-146.
  50. **Parsons, E.C.M.**, Favaro, B., Draheim, M., McCarthy, J.B., Aguirre, A.A., Bauer, A.L., Blight, L.K., Cigliano, J.A., Coleman, M.A., Côté, I.M., Fletcher, S., Foley, M.M., Jefferson, R., Jones, M.C., Kelaher, B.P., Lundquist, C.J., Nelson, A., Patterson, K., Walsh, L., Wright, A.J. and Sutherland, W.J. 2014. Seventy-one important questions for the conservation of marine biodiversity. *Conservation Biology* 28(5): 1206-1214.
  51. **Parsons, E.C.M.**, Shiffman, D.S., Darling, E.S., Spillman, N. and Wright, A.J. 2014. How being Twitter-literate can help conservation scientists. *Conservation Biology* 28(2): 299-301.
  52. Primark, R.B., Cigliano, J.A. & **Parsons, E.C.M.** 2014. Coauthors gone bad: How to avoid and deal with the problem. *Biological Conservation* 176: 277-280.
  53. Scarpaci, C. and **Parsons, E.C.M.** 2014. Recent advances in whale-watching research: 2012-2013. *Tourism in Marine Environments* 10(1/2): 121-140.
  54. Simmonds, M.P., Dolman, S.J., Jasny, M., **Parsons, E.C.M.**, Weilgart, L., Wright, A.J. and Leaper, R. 2014. Marine noise pollution – more recognition but need for more practical action. *Journal of Ocean Technology* 9(1): 71-90.
  55. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2014. State Of the Cetacean Environment Report (SOCER) 2013. *Journal of Cetacean Research and Management* 15 (Suppl.): 320-330.
- 
56. Draheim, M.M., Patterson, K.W., Rockwood, L.L., Guagnano, G.A., and **Parsons, E.C.M.** 2013. Attitudes of college undergraduates towards coyotes (*Canis latrans*) in an urban landscape: management and public outreach implications. *Animals* 3(1):1-18.
  57. **Parsons, E.C.M.** 2013. So you want to be a Jedi? Advice for conservation researchers wanting to advocate for their findings. *Journal of Environmental Studies and Sciences* 3(3): 340-342.
  58. **Parsons, E.C.M.** and Cornick, L. 2013. Politics, people and polar bears. *Marine Policy* 42: 178-179.
  59. Scarpaci, C. and **Parsons, E.C.M.** 2013. Recent advances in whale-watching research: 2011-2012. *Tourism in Marine Environments* 8(4): 207-217.

**Exhibit A: Curriculum Vitae**

60. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2013. State Of the Cetacean Environment Report (SOCER) 2012. *Journal of Cetacean Research and Management* 14 (Suppl.): 263-267.
61. Wright, A.J., Dolman, S., Jasny, M., **Parsons, E.C.M.**, Schiedek, D. and Young, S. 2013. Myth and momentum: A critique of environmental impact assessments. *Journal of Environmental Protection* 4 (8A2): 72-77.
62. Wright, A.J., **Parsons, E.C.M.**, Rose, N.A. and Witcomb-Vos, E. 2013. The science-policy disconnect: language issues at the science-policy boundary. *Environmental Practice* 15(1): 79-83.
- 
63. DellaSala, D.A., Fitzgerald, J.M., Jonsson, B.G., McNeely, J.A., Delali Dovie, B., Dieterich, M., Majluf, P., Nemtzov, S.C., Nevin, O.T., **Parsons, E.C.M.** and Watson, J.E.M. 2012. Priority actions for sustainable forest management in the international year of forests. *Conservation Biology* 26(3): 572-575.
64. Howes, L., Scarpaci, C. and **Parsons, E.C.M.** 2012. Ineffectiveness of a marine sanctuary zone to protect burrunan dolphins (*Tursiops australis sp. nov.*) from tourism activities in Port Phillip Bay, Australia. *Journal of Ecotourism* 11(3): 188-201.
65. Karaffa, P., Draheim, M., and **Parsons, E.C.M.** 2012. What's in a name? Do species' names impact student support for conservation? *Human Dimensions of Wildlife* 17: 308-310.
66. **Parsons, E.C.M.** 2012. The negative impacts of whale-watching. *Journal of Marine Biology* 2012 (807294): 9pp. (doi:10.1155/2012/807294)
67. **Parsons, E.C.M.** 2012. Killer whale killers. *Tourism in Marine Environments* 8(3): 153-160.
68. **Parsons, E.C.M.** 2012. From whaling to whale watching: a history of cetaceans in Scotland. *Glasgow Naturalist* 25(4): 53-57.
69. **Parsons, E.C.M.** 2012. You'll be a conservationist if... *Journal of Environmental Studies and Sciences* 2(4): 369-370.
70. Scarpaci, C. and **Parsons, E.C.M.** 2012. Recent advances in whale-watching research: 2010-2011. *Tourism in Marine Environments* 8(3): 161-171.
71. Sitar-Gonzales, A. and **Parsons, E.C.M.** 2012. The perceived conservation status of polar bears and penguins. *Human Dimensions of Wildlife* 17: 225-227.

**Exhibit A: Curriculum Vitae**

72. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2012. State Of the Cetacean Environment Report (SOCER) 2011. *Journal of Cetacean Research and Management* 13 (Suppl.): 244-255.
- 
73. Dolman, S., **Parsons, E.C.M.** and Wright, A.J. 2011. Cetaceans and military sonar: a need for better management. *Marine Pollution Bulletin* 63: 1-4.
74. Draheim, M.M., Rockwood, L.L., Guagnano, G. and **Parsons E.C.M.** 2011. The impact of information on students' beliefs and attitudes toward coyotes. *Human Dimensions of Wildlife* 16(1): 67-72.
75. McCafferty, D. and **Parsons, E.C.M.** 2011. Marine mammal ecotypes: implications for otter conservation and management. *Aquatic Mammals* 37(2): 205-207.
76. **Parsons, E.C.M.** and Cornick, L. 2011. Sweeping scientific data under a polar bear skin rug: the IUCN and the proposed listing of polar bears under CITES Appendix I. *Marine Policy* 35: 729-731.
77. Rose, N.A., Janiger, D., **Parsons E.C.M.** and Stachowitsch, M. 2011. Shifting baselines in scientific publications: A case study using cetacean research. *Marine Policy* 35: 477-482.
78. Ross, P.S., Barlow, J., Jefferson, T.A., Hickie, B.E., Lee, T., MacFarquhar, C., **Parsons, E.C.**, Riehl, K.N., Rose, N.A., Slooten, E., Tsai, C.Y., Wang, J.Y., Wright, A.J. and Yang, S.C. 2011. Ten guiding principles for the delineation of priority habitat for endangered small cetaceans. *Marine Policy* 35: 483-488.
79. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2011. State Of the Cetacean Environment Report (SOCER) 2010. *Journal of Cetacean Research and Management* 12 (Suppl.): 256-266.
80. Wright, A.J., Deak, T. and **Parsons, E.C.M.** 2011. Size matters: Management of stress responses and chronic stress in beaked whales and other marine mammals may require larger exclusion zones. *Marine Pollution Bulletin* 63: 5-9
81. Zirbel, K., Balint, P. and **Parsons, E.C.M.** 2011. Navy sonar, cetaceans and the US Supreme Court: A review of cetacean mitigation and litigation in the US. *Marine Pollution Bulletin* 63: 40-48.

**Exhibit A: Curriculum Vitae**

82. Zirbel, K., Balint, P and **Parsons, E.C.M.** 2011. Public awareness and attitudes towards naval sonar mitigation for cetacean conservation: A preliminary case study in Fairfax County, Virginia (the DC Metro area). *Marine Pollution Bulletin* 63: 49-55.
83. Draheim, M., Bonnely, I., Bloom, T., Rose, N. and **Parsons, E.C.M.** 2010. Tourist attitudes towards marine mammal tourism: an example from the Dominican Republic. *Tourism in Marine Environments* 6(4): 175-183.
84. **Parsons, E.C.M.** and Scarpaci, C. 2010. Recent advances in whale-watching research: 2009-2010. *Tourism in Marine Environments* 7(1): 43-53.
85. **Parsons, E.C.M.**, Bonnely De Calventi, I, Whaley, A., Rose, N.A. and Sherwin, S. 2010. A note on illegal captures of bottlenose dolphins (*Tursiops truncatus*) in the Dominican Republic. *International Journal of Wildlife Law and Policy* 13(4): 240-244.
86. **Parsons, E.C.M.**, Clark, J., Warham, J. and Simmonds, M.P. 2010. The conservation of British cetaceans: a review of the threats and protection afforded to whales, dolphins and porpoises in UK Waters, Part 1. *International Journal of Wildlife Law and Policy* 13 (1): 1-62.
87. **Parsons, E.C.M.**, Clark, J. and Simmonds, M.P. 2010. The conservation of British cetaceans: a review of the threats and protection afforded to whales, dolphins and porpoises in UK Waters, Part 2. *International Journal of Wildlife Law and Policy* 13(2): 99-175.
88. **Parsons, E.C.M.**, Rice, J.P. and Sadeghi, L. 2010. Awareness of whale conservation status and whaling policy in the US – a preliminary study on American youth. *Anthrozoös* 23(2): 119-127.
89. **Parsons, E.C.M.**, Rose, N.A. and Telecky, T.M. 2010. What, no science? The trade in live Indo-Pacific bottlenose dolphins from Solomon Islands – a CITES decision implementation case study. *Marine Policy* 34: 384-388.
90. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2010. State Of the Cetacean Environment Report (SOCER) 2009. *Journal of Cetacean Research and Management* 11 (Suppl. 2): 282-299.
91. Doukakis, J.P., **Parsons, E.C.M.**, Burns, W.C.G., Salomon, A.K., Hines, E. and Cigliano, J.A. 2009. Gaining traction: re-treading the wheels of marine conservation. *Conservation Biology* 23: 841-846.
92. **Parsons, E.C.M.**, Dolman, S., Jasny, M., Rose, N.A., Simmonds, M.P. and Wright, A.J. 2009. A critique of the UK's JNCC Seismic Survey Guidelines for minimizing acoustic disturbance to marine mammals: best practice? *Marine Pollution Bulletin* 58: 643-651.

**Exhibit A: Curriculum Vitae**

93. **Parsons, E.C.M.** and Draheim, M. 2009. A reason not to support whaling: a case study from the Dominican Republic. *Current Issues in Tourism* 12(4): 397- 403.
94. Scarpaci, C., Lück, M., and **Parsons, E.C.M.** 2009. Recent advances in whalewatching research: 2008-2009. *Tourism in Marine Environments* 6(1): 39-50.
95. Scarpaci, C., **Parsons, E.C.M.**, and Lück, M. 2009. Recent advances in whalewatching research: 2007-2008. *Tourism in Marine Environments* 5(4): 319-336.
96. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2009. State Of the Cetacean Environment Report (SOCER) 2008. *Journal of Cetacean Research and Management* 11 (Suppl.): 288-302.
97. Sutherland, W.J., Adams, W.M., Aronson, R.B., Aveling, R., Blackburn, T.M., Broad, S., Ceballos, G., Cote, I.M., Cowling, R.M., Da Fonesca, A.B, Dinerstein, E., Ferraro, P.J., Fleishman, E., Gascon, P., Hunter Jnr, M., Hutton, J., Kareiva, P., Kuria, A., MacDonald, D.W., MacKinnon, K., Madgwick, F.J., Mascia, M.B., McNeely, J., Milner-Gulland, E.J., Moon, S., Morley, C.G., Nelson, S., Osborn, D., Pai, M., **Parsons, E.C.M.**, Peck, L., Possingham, H., Prior, S.V., Pullin, A.S., Rands, M.R.W., Ranganathan, J., Redford, K.H., Rodriguez, J.P., Seymour, F., Sobel, J., Sodhi, N.S., Stott, A., Vance-Borland, K., and Watkinson, A. 2009. An assessment of the 100 questions of greatest importance to the conservation of global biodiversity. *Conservation Biology* 23(3): 557-567.
98. Wright, A.J., Rose, N.A., **Parsons, E.C.M.** and S. Dolman. 2009. Urging cautious policy applications of captive research data is not the same as rejecting those data. *Marine Pollution Bulletin* 58: 314-316.
- 
99. **Parsons, E.C.M.**, Dolman, S., Wright, A.J., Rose, N.A. and Burns, W.C.G. 2008. Navy sonar and cetaceans: just how much does the gun need to smoke before we act? *Marine Pollution Bulletin* 56: 1248-1257.
100. **Parsons, E.C.M.**, Wright, A.J. and Gore, M. 2008. The nature of humpback whale (*Megaptera novaeangliae*) song. *Journal of Marine Animals and Their Ecology* 1(1): 22-31.
101. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2008. State Of the Cetacean Environment Report (SOCER) 2007. *Journal of Cetacean Research and Management* 10 (Suppl.): 279-292.
102. Scarpaci, C., **Parsons, E.C.M.**, and Lück, M. 2008. Recent advances in whalewatching research: 2006-2007. *Tourism in Marine Environments* 5(1): 55-66.
103. Whaley, A.R. Wright, A.J., Bonnelly De Calventi, I., and **Parsons, E.C.M.** 2008. Humpback whale sightings in southern waters of the Dominican Republic lead to proactive conservation measures. *Marine Biodiversity Records* 1: e70, 1-3.



**Exhibit A: Curriculum Vitae**

- 
104. Gore M.A., Ahmad E., Ali Q.M., Culloch R.M., Hasnain S.A., Hussain B., Iqbal P., Khan U.W., Kiani S., MacLeod C., **Parsons E.C.M.**, Siddiqui P.J., Ormond R.F. and Waqas, U. 2007. Beaked whale, *Ziphius cavirostris*, remains recovered on the Pakistani coast. *Marine Biodiversity Records* 1: e90, 1-4.
105. Jiang, Y., Lück, M. and **Parsons, E.C.M.** 2007. Public awareness, education, and marine mammals in captivity. *Tourism Review International* 11(3): 237-250.
106. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2007. State Of the Cetacean Environment Report (SOCER) 2006. *Journal of Cetacean Research and Management* 9 (Suppl.): 275-293.
- 
107. Howard, C. and **Parsons, E.C.M.** 2006. Attitudes of Scottish city inhabitants to cetacean conservation. *Biodiversity and Conservation* 15: 4335-4356.
108. Howard, C. and **Parsons, E.C.M.** 2006. Public awareness of whale-watching opportunities in Scotland. *Tourism in Marine Environments* 2: 103-109.
109. **Parsons, E.C.M.**, Fortuna, C.M., Ritter, F., Rose, N.A., Simmonds, M.P., Weinrich, M., Williams, R. and Panigada S. 2006. Glossary of whalewatching terms. *Journal of Cetacean Research and Management* 8 (Suppl.): 249-251.
110. **Parsons, E.C.M.**, Lück, M. and Lewandowski, J. 2006. Recent advances in whalewatching research: 2005-2006. *Tourism in Marine Environments* 3: 179-189.
111. **Parsons, E.C.M.**, Lewandowski, J. and Lück, M. 2006. Recent advances in whalewatching research: 2004-2005. *Tourism in Marine Environments* 2: 119-132.
112. **Parsons, E.C.M.**, Rose, N.A., Bass, C., Perry, C. and Simmonds, M.P. 2006. It's not just poor science – Japan's "scientific" whaling may be a human health risk too. *Marine Pollution Bulletin* 52: 1118-1120.
113. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2006. State of the Cetacean Environment Report (SOCER) 2005. *Journal of Cetacean Research and Management* 8 (Suppl.): 198-217.
- 
114. Scott, N.J. and **Parsons, E.C.M.** 2005. A survey of public opinions in Southwest Scotland on cetacean conservation issues. *Aquatic Conservation* 15: 299-312.
115. Scott, N.J. and **Parsons, E.C.M.** 2005. A survey of public opinion on seal management in southwest Scotland. *Aquatic Mammals* 31: 104-109.

**Exhibit A: Curriculum Vitae**

116. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2005. State Of the Cetacean Environment Report (SOCER) 2004. *Journal of Cetacean Research and Management* 7 (Suppl.): 290-301.
- 
117. Barros, N.B., Jefferson, T.A. and **Parsons, E.C.M.** 2004. Feeding habits of Indo-Pacific humpback dolphins (*Sousa chinensis*) stranded in Hong Kong. *Aquatic Mammals* 30: 177-186.
118. MacLeod, K., Fairbairns, R., Gill, A., Fairbairns, B., Gordon, J., Blair-Myers, C. and **Parsons, E.C.M.** 2004. Seasonal distribution of minke whales (*Balaenoptera acutorostrata*) in relation to physiography and prey off the Isle of Mull, Scotland. *Marine Ecology Progress Series* 277: 263-274.
119. **Parsons, E.C.M.** 2004. The potential impacts of pollution on humpback dolphins - with a case study on the Hong Kong population. *Aquatic Mammals* 30: 18-37.
120. **Parsons, E.C.M.** 2004. The behaviour and ecology of the Indo-Pacific humpback dolphin (*Sousa chinensis*). *Aquatic Mammals* 30: 38-55.
121. **Parsons, E.C.M.** 2004. Sea monsters and mermaids in Scottish folklore: can these tales give us information on the historic occurrence of marine animals in Scotland? *Anthrozoös* 17: 73-80.
122. Rawles, C.J.G. and **Parsons, E.C.M.** 2004. Environmental motivation of whale-watching tourists in Scotland. *Tourism in Marine Environments* 1: 129-132.
123. Scott, N.J. and **Parsons, E.C.M.** 2004. A survey of public awareness of the occurrence and diversity of cetaceans in Southwest Scotland. *Journal of the Marine Biological Association of the United Kingdom* 84: 1101-1104.
- 
124. **Parsons, E.C.M.** 2003. Seal management in Scotland: tourist perceptions and the possible impacts on the Scottish tourism industry. *Current Issues in Tourism* 6: 540-546.
125. **Parsons, E.C.M.** and Rawles, C. 2003. The resumption of whaling by Iceland and the potential negative impact in the Icelandic whale-watching market. *Current Issues in Tourism* 6: 444-448.
126. **Parsons, E.C.M.** and Woods-Ballard, A. 2003. Acceptance of voluntary whalewatching codes of conduct in West Scotland: the effectiveness of governmental versus industry-led guidelines. *Current Issues in Tourism* 6: 172-182.
127. **Parsons, E.C.M.**, Warburton, C.A., Woods-Ballard, A., Hughes, A. and Johnston, P. 2003. The value of conserving whales: the impacts of cetacean-related tourism on the economy of rural West Scotland. *Aquatic Conservation* 13: 397-415.

**Exhibit A: Curriculum Vitae**

128. **Parsons, E.C.M.**, Warburton, C.A., Woods-Ballard, A., Hughes, A. Johnston, P., Bates, H. and Lück, M. 2003. Whale-watching tourists in West Scotland. *Journal of Ecotourism* 2: 93-113.
129. Woods-Ballard, A., **Parsons, E.C.M.**, Hughes, A.J., Velandar, K.A., Ladle, R.J. and Warburton, C.A., 2003. The sustainability of whale-watching in Scotland. *Journal of Sustainable Tourism* 11: 40-55.
- 
130. Barros, N.B., Jefferson, T.A. and **Parsons, E.C.M.** 2002. Food habits of finless porpoises (*Neophocaena phocaenoides*) in Hong Kong waters. *Raffles Bulletin of Zoology, Supplement* 10: 115-123.
- 
131. **Parsons, E.C.M.** and Chan, H.M. 2001. Organochlorine and trace metal concentrations in bottlenose dolphins (*Tursiops truncatus*) from the South China Sea. *Marine Pollution Bulletin* 42: 780-786.
132. **Parsons, E.C.M.**, Overstreet, R.M. and Jefferson, T.A. 2001. Parasites from Indo-Pacific hump-backed dolphins (*Sousa chinensis*) and finless porpoises (*Neophocaena phocaenoides*) stranded in Hong Kong. *Veterinary Record* 148: 776-780.
133. Stockin, K., Fairbairns, R.S., **Parsons, E.C.M.** and Sims, D. 2001. The effects of diel and seasonal cycles on the dive duration of the minke whale (*Balaenoptera acutorostrata*) off the Isle of Mull, Scotland. *Journal of the Marine Biological Association of the United Kingdom* 81: 189-190.
- 
134. Barros, N.B., **Parsons, E.C.M.** and Jefferson, T.A. 2000. Prey of offshore bottlenose dolphins from Hong Kong. *Aquatic Mammals* 26: 2-6.
135. **Parsons, E.C.M.** and Jefferson, T.A. 2000. Post-mortem investigations on stranded dolphins and porpoises from Hong Kong waters. *Journal of Wildlife Diseases* 36: 342-356.
- 
136. **Parsons, E.C.M.** 1999. Trace metal concentrations in the tissues of cetaceans from Hong Kong's territorial waters. *Environmental Conservation* 26: 30-40.
137. **Parsons, E.C.M.** 1999. The determination of trace metals in whole fish from North Lantau waters, Hong Kong. *ICES Journal of Marine Science* 56: 791-794.
138. **Parsons, E.C.M.**, Bossart, G. and Kinoshita, R. 1999. Necropsy of a finless porpoise calf stranded in Hong Kong. *Veterinary Record* 144: 75-76.

**Exhibit A: Curriculum Vitae**

139. **Parsons, E.C.M.**, Chan, H.M. and Kinoshita, R. 1999. Organochlorine and trace metal concentrations in a Pygmy Bryde's whale (*Balaenoptera edeni*) from the South China Sea. *Marine Pollution Bulletin* 38: 51-55.
- 
140. **Parsons, E.C.M.** 1998. The behaviour of Hong Kong's resident cetaceans: the Indo-Pacific hump-backed dolphin and the finless porpoise. *Aquatic Mammals* 24: 91-110.
141. **Parsons, E.C.M.** 1998. Trace metal pollution in Hong Kong: implications for the health of Hong Kong's Indo-Pacific hump-backed dolphins (*Sousa chinensis*). *Science of the Total Environment* 214: 175-184.
142. **Parsons, E.C.M.** 1998. Strandings of small cetaceans in Hong Kong's territorial waters. *Journal of the Marine Biological Association of the United Kingdom* 78: 1039-1042.
143. **Parsons, E.C.M.** 1998. Observations of Indo-Pacific hump-backed dolphins in Goa, India. *Marine Mammal Science* 14: 166-170.
144. **Parsons, E.C.M.** 1998. Trace metal concentrations in crustaceans from North Lantau waters, Hong Kong. *The Marine Biology of the South China Sea* 3: 411-422.
145. **Parsons, E.C.M.** and Chan, H.M. 1998. Organochlorines in Indo-Pacific hump-backed dolphins (*Sousa chinensis*) and finless porpoises (*Neophocaena phocaenoides*) from Hong Kong. *The Marine Biology of the South China Sea* 3: 423-437.
146. **Parsons, E.C.M.** and Wang J.Y. 1998. A review of finless porpoises (*Neophocaena phocaenoides*) from the South China Sea. *The Marine Biology of the South China Sea* 3: 287-306.
- 
147. **Parsons, E.C.M.**, Felley, M.L. and Porter, L.J. 1995. An annotated checklist of cetaceans recorded from Hong Kong's territorial waters. *Asian Marine Biology* 12: 79-100.

**JOURNAL IMPACT FACTORS (examples)**

(2015 5 year impact factor)

Advances in Marine Biology:	4.092
Aquatic Conservation:	2.475
Aquatic Mammals:	0.862
Anthozoös:	1.178
Biodiversity & Conservation:	2.724
Biological Conservation:	4.748
Biology Letters:	3.381
Conservation Biology:	5.087
Current Issues in Tourism:	1.704
Endangered Species Research:	1.325
Environmental Conservation:	3.425
Fisheries Research:	2.263

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Frontiers in Marine Science:	2.106 (pending)
ICES Journal of Marine Science:	2.801
Journal Marine Biol. Assoc. UK:	1.176
Journal of Sustainable Tourism:	3.439
Journal of Wildlife Diseases:	1.272
Marine Ecology Progress Series:	3.086
Marine Mammal Science:	1.972
Marine Policy:	2.715
Marine Pollution Bulletin:	3.512
Ocean & Coastal Management:	1.994
Raffles Bulletin of Zoology:	0.938
Science of the Total Environment:	4.317
Tourism in Marine Environments:	1.060
Veterinary Record:	1.632

**ALTMETRIC SCORES**

Altmetric scores are increasingly being seen as an indicator of how popular articles are with the media, the wider public and as a potential indicator of their “real world impact”. Below are some key articles with high ranking altmetric scores, or articles that rank highly within their specific journal.

Altmetric Score	Ranking	Year published	Journal	Title
477	#1	2013	Conservation Biology	How Twitter literacy can benefit conservation scientists
250	#1	2015	Endangered Species Research	Key research questions of global importance for cetacean conservation
263	#8	2014	Conservation Biology	Seventy-one important questions for the conservation of marine biodiversity
194	#1	2012	Tourism in Marine Environments	Killer whale killers
190	#3	2015	Ocean & Coastal Management	“Back off, man, I’m a scientist!” When marine conservation science meets policy
163	#3	2015	Frontiers in Marine Science	Is marine conservation science becoming irrelevant to policy makers?
138	#7	2016	Frontiers in Marine Science	The Kraken in the Aquarium: questions that aren’t being asked but urgently need to be addressed in order to advance marine conservation
124	#10	2016	Frontiers in Marine Science	Why IUCN Should Replace “Data Deficient” Conservation Status with a Precautionary “Assume Threatened” Status—A Cetacean Case Study
98	#2	2013	Journal of Environmental Studies and Sciences	So you want to be a Jedi? Advice for conservation researchers wanting to advocate for their findings
65	#10	2015	Marine Policy	Increased knowledge about sharks increases public concern about their conservation
56	#9	2015	Ocean & Coastal Management	Competitive outreach in the 21st century: Why we need conservation marketing
30	#7	2013	Journal of Environmental Studies and Sciences	You’ll be a conservationist if ...

## Exhibit A: Curriculum Vitae

**Contribution to Departmental Research Output**

Reporting Year	Number of Dept. Faculty	Percentage of Total Departmental Research Publication Output Authored/ Co-authored
2013-14	19	40.4%
2014-15	17	47.2%
2015-16	19	67.6%

**PROCEEDINGS PAPERS (PEER-REVIEWED)**

1. Bolaños-Jiménez, J., Auristela Villarroel-Marin A., **Parsons, E.C.M.** and Rose, N.A. 2007. Origin and development of whalewatching in the state of Aragua, Venezuela: is it sustainable? Pages 16 –27 in *Balancing Marine Tourism, Development, and Sustainability. Proceedings of the 5th International Coastal and Marine Tourism Congress*. Ed. Lück, M., Graeupl, A., Miller, M.L., Auyong, J., and Orams, M.B. School of Hospitality and Tourism and New Zealand Tourism Research Institute, AUT University, Auckland, New Zealand.
2. **Parsons, E.C.M.** and Rose, N.A. 2007. Sustainable versus non-sustainable dolphin tourism in the Caribbean: a case study in the Dominican Republic. Pages 114 – 127 in *Balancing Marine Tourism, Development, and Sustainability. Proceedings of the 5th International Coastal and Marine Tourism Congress*. Ed. Lück, M., Graeupl, A., Miller, M.L., Auyong, J., and Orams, M.B. School of Hospitality and Tourism and New Zealand Tourism Research Institute, AUT University, Auckland, New Zealand.
3. **Parsons, E.C.M.**, Kinoshita, R. and Chan, H.M. 1999. A summary of Indo-Pacific hump-backed dolphin mortality in Hong Kong: implications for the conservation of the population. *European Research on Cetaceans* 12: 18-25.

**BOOK CHAPTERS**

1. **Parsons, E.C.M.** and Brown, D.M. 2017. From hunting to watching: human interactions with cetaceans. In: *Marine Mammal Welfare* (Ed. A. Butterworth), 67-90. Springer International, Cham, Switzerland.
2. **Parsons, E.C.M.** 2015. Levels of marine human-wildlife conflict: a whaling case study. In: *Human-Wildlife Conflict: Complexity in the Marine Environment* (Ed. M.M. Draheim, F. Madden, J.B. McCarthy and E.C.M. Parsons), pp. 79-96. Oxford University Press, Oxford, UK.
3. Hoyt, E. & **Parsons, E.C.M.** 2014. The whale watching industry: historical development. In: *Whale-watching, Sustainable Tourism and Ecological Management* (Ed. J. Higham, L. Bjeder & R. Williams), pp. 57-70. Cambridge University Press.

**Exhibit A: Curriculum Vitae**

4. **Parsons, E.C.M.** 2014. The socioeconomic, educational and legal aspects of whalewatching: a Scottish case study. In: *Whale-watching, Sustainable Tourism and Ecological Management* (Ed. J. Higham, L. Bjeder & R. Williams), pp. 263-274. Cambridge University Press.

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5. Rose, N.A., Forkan, P.A., Block, K., Unti, B. & **Parsons, E.C.M.** 2011. Whales and the USA. In: *Whales and Dolphins: Cognition, Culture, Conservation and Human Perceptions* (Ed. P. Brakes & M.P. Simmonds), pp. 37-46. Earthscan, London. 220pp.

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6. **Parsons, E.C.M.**, Rose, N.A. and Simmonds, M. 2004. Whales – individuals, societies and cultures. In *Troubled Waters* (ed. P. Brakes, A. Butterworth, M. Simmonds & P. Lymbery), pp. 15-29. WSPA, London. 144pp.

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7. Chan, H.M., **Parsons, E.C.M.** and Blackmore, G. 2003. Chemical pollution research in Hong Kong: the past, present and future. In *Turning the Tides* (ed. P.K.S. Shin), pp. 229-236. The Marine Biological Association of Hong Kong. 383pp.
8. **Parsons, E.C.M.** and Dolman, S. 2003. The use of sound by cetaceans. In: *Oceans of Noise* (ed. M. Simmonds, S. Dolman & L. Weilgart), pp. 44-52. Whale and Dolphin Conservation Society, Chippenham. 164pp.
9. **Parsons, E.C.M.** and Dolman, S. 2003. Noise as a problem for cetaceans. In: *Oceans of Noise* (ed. M. Simmonds, S. Dolman & L. Weilgart), pp. 53-58. Whale and Dolphin Conservation Society, Chippenham. 164pp.
10. **Parsons, E.C.M.** Swift, R., and Dolman, S. 2003. Sources of noise. In: *Oceans of Noise* (ed. M. Simmonds, S. Dolman & L. Weilgart), pp. 24-43. Whale and Dolphin Conservation Society, Chippenham. 164pp.

**Submitted**

11. **Parsons, E.C.M.**, Wright, A.J. and Dolman, S. in press. Underwater noise pollution In: *Handbook of Global Environmental Issues* (Ed. W.C.G. Burns & J. Heinen), pp xx. World Scientific Publishers, New Jersey.

**ENCYCLOPEDIA ENTRIES**

1. **Parsons, E.C.M.** and Simmonds, M.P. 2012. Marine mammals. In: *Encyclopedia of Global Warming and Climate Change. 2<sup>nd</sup> Edition.* (Ed. S.G. Philander & J.G. Golson). Sage Publications, San Antonio, TX.
2. **Parsons, E.C.M.**, Milmoie, B.J. and Rose, N.A. 2012. Polar bear. In: *Encyclopedia of Global Warming and Climate Change. 2<sup>nd</sup> Edition.* (Ed. S.G. Philander & J.G. Golson). Sage Publications, San Antonio, TX.

**Exhibit A: Curriculum Vitae**

3. **Parsons, E.C.M.**, Milmo, B.J. and Rose, N.A. 2008. Polar bear. In: *Encyclopedia of Global Warming and Climate Change* (Ed. S.G. Philander & J.G. Golson), pp. 798-801. Sage Publications, San Antonio, TX.
4. Draheim, M. and **Parsons, E.C.M.** 2008. Hispaniola. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 220-221. CAB International, Oxford.
5. **Parsons, E.C.M.** 2008. Convention on the International Trade in Endangered Species (CITES). In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 117. CAB International, Oxford.
6. **Parsons, E.C.M.** 2008. El Niño/La Niña. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 153-154. CAB International.
7. **Parsons, E.C.M.** 2008. European Habitats Directive. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p.162. CAB International, Oxford.
8. **Parsons, E.C.M.** 2008. Hebrides. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 218-219. CAB International, Oxford.
9. **Parsons, E.C.M.** 2008. Specially Protected Areas and Wildlife Protocol of the Cartagena Convention (SPAW Protocol). In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 456-457. CAB International, Oxford.
10. **Parsons, E.C.M.** 2008. Queen Elizabeth II. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 387. CAB International, Oxford.
11. **Parsons, E.C.M.** 2008. Queen Mary II. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 388-389. CAB International, Oxford.
12. **Parsons, E.C.M.**, Jasny, M. and Rose, N.A. 2008. Sonar, Mid Frequency. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 446-447. CAB International.
13. **Parsons, E.C.M.**, Jasny, M. and Rose, N.A. 2008. Sonar, Low Frequency. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 447. CAB International.
14. **Parsons, E.C.M.** 2008. United Nations Convention on the Law of the Sea (UNCLOS). In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 500. CAB International, Oxford.
15. **Parsons, E.C.M.** 2008. Whale ecotourism. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 536-537. CAB International, Oxford.
16. **Parsons, E.C.M.** 2008. Whalewatching Subcommittee of the IWC. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 542. CAB International, Oxford.
17. **Parsons, E.C.M.** 2008. Marine mammals. In: *Encyclopedia of Global Warming and Climate Change* (Ed. S.G. Philander & J.G. Golson), pp. 619-620. Sage Publications, San Antonio, TX.



**Exhibit A: Curriculum Vitae**

18. **Parsons, E.C.M.** and Rose, N.A. 2008. Aboriginal whaling. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), p. 6. CAB International, Oxford.
  19. **Parsons, E.C.M.**, Milmo, B.J. and Rose, N.A. 2008. Polar bear. In: *Encyclopedia of Global Warming and Climate Change* (Ed. S.G. Philander & J.G. Golson), pp. 798-801. Sage Publications, San Antonio, TX.
  20. **Parsons, E.C.M.**, Romero, A., Kannada, S. and Rose, N.A. 2008 Whaling. In: *Encyclopedia of Tourism and Recreation in Marine Environments* (Ed. M. Lück), pp. 542-543. CAB International, Oxford.
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21. **Parsons, E.C.M.** 2007. Heavy metals. In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 860-861. Sage Publications, San Antonio, TX.
  22. **Parsons, E.C.M.** 2007. Polychlorinated biphenyls (PCBs). In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 1397-1399. Sage Publications, San Antonio, TX.
  23. **Parsons, E.C.M.** and Rose, N.A. 2007. Tuna fishing. In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 1779-1781. Sage Publications, San Antonio, TX.
  24. **Parsons, E.C.M.**, Campbell, A. and Rose, N.A. 2007. Oceanography. In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 1284-1286. Sage Publications, San Antonio, TX.
  25. **Parsons, E.C.M.**, Romero, A., Kannada, S. and Rose, N.A. 2007. Whales and whaling. In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 1947-1950. Sage Publications, San Antonio, TX.
  26. Regnery, R. and **Parsons, E.C.M.** 2007. The Save the Whale Movement. In: *Encyclopedia of Environment and Society* (Ed. P. Robbins), pp. 1565-1566. Sage Publications, San Antonio, TX.

**MEETING REPORTS**

1. **Parsons, E.C.M.** and Rose, N.A. 2009. Whale watching and the International Whaling Commission: a report of the 2008 sub-committee meeting. *Tourism in Marine Environments* 6(1): 51-57.
2. **Parsons, E.C.M.** and Rose, N.A. 2008. Whalewatching and the International Whaling Commission: a report of the 2007 sub-committee meeting. *Tourism in Marine Environments* 5: 67-71.
3. **Parsons, E.C.M.** and Rose, N.A. 2006. Whalewatching and the International Whaling Commission: a report of the 2006 sub-committee meeting. *Tourism in Marine Environments* 3: 191-195.
4. **Parsons, E.C.M.** 2006. Whalewatching and the International Whaling Commission: a report of the 2005 sub-committee meeting. *Tourism in Marine Environments* 2: 134-138.
5. **Parsons, E.C.M.** 2004. Whalewatching and the International Whaling Commission: a report of the 2004 sub-committee meeting. *Tourism in Marine Environments* 1: 133-134.

**PUBLISHED SCIENTIFIC REPORTS**

**Exhibit A: Curriculum Vitae**

1. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** (2018). *State of the Cetacean Environment Report (SOCER). Global Compendium 2014-2018*. The International Whaling Commission, Cambridge, UK. 92pp.

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2. Rose, N.A., **Parsons, E.C.M.** and Farinato, R. 2009. *The Case Against Marine Mammals in Captivity*. 4<sup>th</sup> Edition. The Humane Society of the United States and the World Society for the Protection of Animals, Washington DC. 76pp.

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3. **Parsons, E.C.M.**, Ross, A. and Simmonds, M.P. 2007. *The Conservation of British Cetaceans*. The Whale & Dolphin Conservation Society, Chippenham. 122pp.

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4. Arlot, S., **Parsons, E.C.M.** and Colbert, A. 2003. *Marine Special Areas of Conservation and Tourism: The Treshnish Isles and the Firth of Lorn*. Hebridean Whale and Dolphin Trust, Mull. 116pp.
5. De Boer, M.N., Baldwin, R., Burton, C.L.K., Eyre, L., Jenner, K.C.S., Jenner M-N.M., Keith, S.G., McCabe, K.A., **Parsons, E.C.M.**, Peddemors, V.M., Rosenbaum, H.C., Rudolph, P., Thiele, D. and Simmonds, M. 2003. *Cetaceans in the Indian Ocean Sanctuary: A Review*. Whale and Dolphin Conservation Society, Chippenham. 52pp.

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6. Scott, N.J. and **Parsons, E.C.M.** 2001. *Marine Environmental Awareness in Argyll, West Scotland*. Hebridean Whale and Dolphin Trust, Mull. 97pp.
7. Warburton, C.A., **Parsons, E.C.M.**, Woods-Ballard, A., Hughes, A. and Johnston, P. 2001. *Whale-watching in West Scotland*. Department of the Environment, Food and Rural Affairs, London. 73pp.

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8. Shrimpton, J.H. and **Parsons, E.C.M.** 2000. *Cetacean Conservation in West Scotland*. Hebridean Whale and Dolphin Trust, Mull. 85pp.

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9. **Parsons, E.C.M.** 1997. *Sewage pollution in Hong Kong: implications for the health and conservation of local cetaceans*. Friends of the Earth, Hong Kong. 42pp.

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10. Evans, P.G.H., Lewis, E.J., **Parsons, E.C.M.** and Swann, C. 1993. *A survey of whales and dolphins in Hebridean waters*. Seawatch Foundation, Oxford.

**PUBLISHED CONFERENCE PROCEEDINGS PAPERS (NON PEER-REVIEWED)**

1. Wright, A.J., **Parsons, E.C.M.**, Rose, N.A., Vos, E. 2008. Don't quote me on that: bridging the language gap between scientists and policy makers. *European Research on Cetaceans* 21: 5pp.

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**Exhibit A: Curriculum Vitae**

2. Warburton, C.A., **Parsons, E.C.M.**, Woods-Ballard, A., Hughes, A. and Johnston, P. 2004. The economic impact of whale-watching in West Scotland. *European Research on Cetaceans* 15: 215-219.

---
3. **Parsons, E.C.M.** 2003. Conservation of whales and dolphins. In: *Conservation, Rehabilitation and Welfare. Proceedings of the Ninth Annual Wildlife Symposium of the Glasgow University Veterinary Zoological Society*, pp. 9-20. Glasgow: GUVZS. 53pp.
4. **Parsons, E.C.M.** and Woods-Ballard, A.J. 2003. Whale-watching in western Scotland. In: *Viewing Marine Mammals in the Wild: Emerging Issues, Research and Management Needs*, pp. 12-14. Silver Spring, MD: NOAA. 82pp.

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5. **Parsons, E.C.M.**, Birks, I., Evans, P.G.H., Gordon, J.G., Shrimpton, J.H. and Pooley, S. 2000. The possible impacts of military activity on cetaceans in West Scotland. *European Research on Cetaceans* 14: 185-190.

---
6. Jeewoonarain, T., **Parsons, E.C.M.** and Evans, P.G.H. 1999. Operation sightings: sightings of cetaceans in the southern Hebrides, Scotland. *European Research on Cetaceans* 13: 237-241.
7. **Parsons, E.C.M.**, Shrimpton, J. and Evans, P.G.H. 1999. Cetacean conservation in Northwest Scotland: perceived threats to cetaceans. *European Research on Cetaceans* 13: 128-133.

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8. **Parsons, E.C.M.**, Chan, H.M. and Kinoshita, R. 1998. A summary of Indo-Pacific hump-backed dolphin mortality in Hong Kong: implications for the conservation of the population. *European Research on Cetaceans* 12: 18-25.

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9. **Parsons, E.C.M.** and Hoffmann, C.C. 1996. A preliminary examination of the conservation status of Hong Kong's cetaceans. *European Research on Cetaceans* 10: 12-14.

---
10. **Parsons, E.C.M.** 1995. Land-based observations of cetaceans in Hong Kong waters. *Journal of Oceanography in the Taiwan Strait (Special Publication 4)*: 34-37.
11. **Parsons, E.C.M.** 1995. Summary of cetacean strandings in Hong Kong waters. *Journal of Oceanography in the Taiwan Strait (Special Publication 4)*: 37-39.
12. **Parsons, E.C.M.** and Porter, L.J. 1995. The threats to Hong Kong's Indo-Pacific humpbacked dolphin population. In: *Proceedings of the Third Symposium on Cetacean Ecology and Conservation*. (ed. L. Chou), pp. 101-111. Taipei: National Taiwan University.

---
13. Evans, P.G.H., Swann, C., Lewis, E.J., **Parsons, E.C.M.**, Heimlich-Boran, J. and Heimlich-Boran, S. 1993. Survey of cetaceans in the Minches and Sea of Hebrides, Northwest Scotland. *European Research on Cetaceans* 7: 111-116.

## Exhibit A: Curriculum Vitae

**EDITORIALS (NON PEER-REVIEWED)**

1. Cigliano, J., Favaro, B., Oester, S. and **Parsons E.C.M.** 2015. Making marine science matter – A special issue highlighting the third International Marine Conservation Congress. *Ocean and Coastal Management* 115: 1-3.
2. Marino, L., Gulland, F. and **Parsons, E.C.M.** 2012. Protecting wild dolphins and whales: from individuals to populations. *Journal of Marine Biology* 2012 (934048): 2pp. (doi:10.1155/2012/934048).
3. Hines, E., **Parsons, E.C.M.** and Cigliano, J. 2011. Making marine science matter. *Bulletin of Marine Science* 87(2): 161-164.

**Miscellaneous**

1. Jones, R. and **Parsons, E.C.M.** 2003. *The Sea Kingdom: Coll and Tiree*. Hebridean Whale and Dolphin Trust, Tobermory, Scotland. 32pp.
2. Jones, R. and **Parsons, E.C.M.** 2002. *The Sea Kingdom: Isle of Mull*. Hebridean Whale and Dolphin Trust, Tobermory, Scotland. 28pp.
3. Evans, P.G.H. and **Parsons, E.C.M.** (Eds.). 1999. *European Research on Cetaceans* 12. The European Cetacean Society, Valencia, Spain. 436pp.
4. Evans, P.G.H., **Parsons, E.C.M.** and Clark, S.L. (Eds.). 1998. *European Research on Cetaceans* 11. The European Cetacean Society, Kiel, Germany. 314pp.

**PAPERS PRESENTED TO THE INTERNATIONAL WHALING COMMISSION**

1. **Parsons, E.C.M.** and Smith, C. 2018. Recent advances in whalewatching research: 2017-2018. Paper presented to the Scientific Committee at the 67<sup>th</sup> Meeting of the International Whaling Commission, 24 April-6 May 2018, Bled, Slovenia. SC67b/WW7.
2. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2018. State Of the Cetacean Environment Report (SOCER) 2018. Paper presented to the Scientific Committee at the 67<sup>th</sup> Meeting of the International Whaling Commission, 24 April-6 May 2018, Bled, Slovenia. SC67b/E1.
3. **Parsons, E.C.M.** and Brown, D.M. 2017. Recent advances in whalewatching research: 2016-2017. Paper presented to the Scientific Committee at the 67<sup>th</sup> Meeting of the International Whaling Commission, 9-21 May 2017, Bled, Slovenia. SC67a/WW5.
4. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2017. State Of the Cetacean Environment Report (SOCER) 2017. Paper presented to the Scientific Committee at the 67<sup>th</sup> Meeting of the International Whaling Commission, 9-21 May 2017, Bled, Slovenia. SC67a/E5.
5. Gero, S., Pace, S., Kaufmann, G., **Parsons, E.C.M.**, Ritter, F., Sironi, M., and Rose, N.A. 2016. Initial survey of the global commercial swim-with-whale industry. Paper presented to the Scientific

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- Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 4-20 June 2016, Bled, Slovenia. SC66b/WW2.
6. **Parsons, E.C.M.** and Brown, D.M. 2016. Recent advances in whalewatching research: 2015-2016. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 4-20 June 2016, Bled, Slovenia. SC66b/WW10.
  7. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2016. State Of the Cetacean Environment Report (SOCER) 2016. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 4-20 June 2016, Bled, Slovenia. SC66b/E2.
  8. Gleason, C. and **Parsons, E.C.M.** 2015. An initial review of whalewatching guidelines for endangered and critically endangered cetaceans. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW9.
  9. **Parsons, E.C.M.** and Scarpaci, C. 2015. Recent advances in whalewatching research: 2014-2015. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW8.
  10. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2015. The effects of whalewatching vessels on the behavior of common bottlenose dolphins (*Tursiops truncatus*) in Bocas Del Toro, Panama. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW12.
  11. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2015. Low levels of compliance with national whalewatching regulations in dolphinwatching boat operators in Bocas Del Toro, Panama. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW14.
  12. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2015. Tourists' perspectives on dolphinwatching in Bocas del Toro, Panama, support sustainable and educational tourism. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW15.
  13. Sitar, A., May-Collado, L.J., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2015. Opinions and perspectives of the dolphinwatching boat operators in Bocas del Toro, Panama. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/WW16.
  14. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2015. State Of the Cetacean Environment Report (SOCER) 2015. Paper presented to the Scientific Committee at the 66<sup>th</sup> Meeting of the International Whaling Commission, 22 May-3 June 2015, San Diego, California. SC66a/E3.
  15. Scarpaci, C. and **Parsons, E.C.M.** 2014. Recent advances in whalewatching research: 2013-2014. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 12-24 May 2014, Bled, Slovenia. SC65b/WW2.

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16. Sitar, A., May-Collado, L.J. and **Parsons, E.C.M.** 2014. High levels of non-compliance with whale-watching regulations in Bocas del Toro, Panama and effects of non-compliance on bottlenose dolphin behavior. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 12-24 May 2014, Bled, Slovenia. SC65b/WW9.
17. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2014. State Of the Cetacean Environment Report (SOCER) 2014. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 12-24 May 2014, Bled, Slovenia. SC65b/E1.
18. Scarpaci, C. and **Parsons, E.C.M.** 2013. Recent advances in whalewatching research: 2012-2013. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 3-15 June 2013, Jeju, South Korea. SC65a/WW1.
19. Simmonds, M.P., Dolman, S., Jasny, M., **Parsons, E.C.M.**, Weilgart, L. and Wright, A.J. 2013. Marine noise pollution – signs of progress: a preliminary review. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 3-15 June 2013, Jeju, South Korea. SC65a/E3.
20. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2013. State Of the Cetacean Environment Report (SOCER) 2013. Paper presented to the Scientific Committee at the 65<sup>th</sup> Meeting of the International Whaling Commission, 3-15 June 2013, Jeju, South Korea. SC65a/E1.
21. Scarpaci, C. and **Parsons, E.C.M.** 2012. Recent advances in whalewatching research: 2011-2012. Paper presented to the Scientific Committee at the 64<sup>th</sup> Meeting of the International Whaling Commission, 11-23 June 2012, Panama City, Panama. SC64/WW1.
22. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2012. State Of the Cetacean Environment Report (SOCER) 2012. Paper presented to the Scientific Committee at the 64<sup>th</sup> Meeting of the International Whaling Commission, 11-23 June 2012, Panama City, Panama. SC64/E2.
23. Scarpaci, C. and **Parsons, E.C.M.** 2011. Recent advances in whalewatching research: 2010-2011. Paper presented to the Scientific Committee at the 63<sup>rd</sup> Meeting of the International Whaling Commission, 30 May – 11 June 2011, Tromsø, Norway. SC63/WW1.
24. Stachowitsch, M., Rose, N.A., and **Parsons, E.C.M.** 2011. State Of the Cetacean Environment Report (SOCER) 2011. Paper presented to the Scientific Committee at the 63<sup>rd</sup> Meeting of the International Whaling Commission, 30 May – 11 June 2011, Tromsø, Norway. SC63/E1.
25. **Parsons, E.C.M.** and Scarpaci, C. 2010. Recent advances in whalewatching research: 2009-2010. Paper presented to the Scientific Committee at the 62<sup>nd</sup> Meeting of the International Whaling Commission, 30 May-11 June 2010, Agadir, Morocco. SC62/WW2.
26. Rose, N.A., Janiger, D., **Parsons, E.C.M.** and Stachowitsch, M. 2010. Shifting baselines in scientific publications: A case study using cetacean research. Paper presented to the Scientific Committee at the 62<sup>nd</sup> Meeting of the International Whaling Commission, 30 May-11 June 2010, Agadir, Morocco. SC62/E2.
27. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2010. State Of the Cetacean Environment Report (SOCER) 2010. Paper presented to the Scientific Committee at the 62<sup>nd</sup> Meeting of the International Whaling Commission, 30 May-11 June 2010, Agadir, Morocco. SC62/E1.

**Exhibit A: Curriculum Vitae**

28. Luksenburg, J. and **Parsons, E.C.M.** 2009. Effects of aircraft on cetaceans: implications for aerial whalewatching. Paper presented to the Scientific Committee at the 61<sup>st</sup> Meeting of the International Whaling Commission, 31 May - 12 June 2009, Madeira, Portugal. SC61/WW2.
29. Scarpaci, C., Lück, M. and **Parsons, E.C.M.** 2009. Recent advances in whalewatching research: 2008-2009. Paper presented to the Scientific Committee at the 61<sup>st</sup> Meeting of the International Whaling Commission, 31 May - 12 June 2009, Madeira, Portugal. SC61/WW1.
30. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2009. State Of the Cetacean Environment Report (SOCER) 2009. Paper presented to the Scientific Committee at the 61<sup>st</sup> Meeting of the International Whaling Commission, 31 May - 12 June 2009, Madeira, Portugal. SC61/E1.
31. Wright, A.J., Deak, T. and **Parsons, E.C.M.** 2009. Concerns related to chronic stress in marine mammals. Paper presented to the Scientific Committee at the 61<sup>st</sup> Meeting of the International Whaling Commission, 31 May - 12 June 2009, Madeira, Portugal. SC61/E16.
32. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2008. State Of the Cetacean Environment Report (SOCER) 2008. Paper presented to the Scientific Committee at the 60<sup>th</sup> Meeting of the International Whaling Commission, 1 - 19 June 2008, Santiago, Chile. SC60/E1.
33. Lusseau, D., Bejder, L., Carlson, C.A., Fortuna, C.M., **Parsons, E.C.M.**, Robbins, J., Simmonds, M.P., Weinrich, M. and Williams, R. 2007. Workshop for planning of large scale whalewatching research. Paper presented to the Scientific Committee at the 59<sup>th</sup> Meeting of the International Whaling Commission, 7 - 18 May 2007, Anchorage, Alaska. SC59/WW17.
34. Rose, N.A., **Parsons, E.C.M.** and Sellares, R. 2007. Swim-with-whale tourism: an update on development of a questionnaire. Paper presented to the Scientific Committee at the 59<sup>th</sup> Meeting of the International Whaling Commission, 7 - 18 May 2007, Anchorage, Alaska. SC59/WW6.
35. Scarpaci, C., **Parsons, E.C.M.**, and Lück, M. 2007. Recent advances in whalewatching research: 2006-2007. Paper presented to the Scientific Committee at the 59<sup>th</sup> Meeting of the International Whaling Commission, 7 - 18 May 2007, Anchorage, Alaska. SC59/WW1.
36. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2007. State Of the Cetacean Environment Report (SOCER) 2007. Paper presented to the Scientific Committee at the 59<sup>th</sup> Meeting of the International Whaling Commission, 7 - 18 May 2007, Anchorage, Alaska. SC59/E3.
37. **Parsons, E.C.M.**, Lück, M. and Lewandowski, J.K. 2006. Recent advances in whalewatching research: 2005-2006. Paper presented to the Scientific Committee at the 58<sup>th</sup> Meeting of the International Whaling Commission, 26 May-6 June 2006, St. Kitts. SC58/WW1.
38. **Parsons, E.C.M.**, Bonnelly di Calventi, I., Whaley, A., Rose, N.A. and Sherwin, S. 2006. A note on illegal captures of wild bottlenose dolphins (*Tursiops truncatus*) from the coastal waters of the Dominican Republic. Paper presented to the Scientific Committee at the 58<sup>th</sup> Meeting of the International Whaling Commission, 26 May-6 June 2006, St. Kitts. SC58/SM11.
39. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2006. State Of the Cetacean Environment Report (SOCER) 2006. Paper presented to the Scientific Committee at the 58<sup>th</sup> Meeting of the International Whaling Commission, 26 May-6 June 2006, St. Kitts. SC58/E1.

**Exhibit A: Curriculum Vitae**

40. Whaley, A.R., **Parsons, E.C.M.**, Sellares, R. and Bonnely Di Calventi, I. 2006. Dolphin ecology and behaviour in the Southeastern waters of the Dominican Republic: preliminary observations. Paper presented to the Scientific Committee at the 58<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2006, St. Kitts. SC58/SM12.
41. Whaley, A., Wright, A.J., Bonnely de Calventi, I. and **Parsons, E.C.M.** 2006. Humpback whale sightings in southern waters of the Dominican Republic lead to proactive conservation measures. Paper presented to the Scientific Committee at the 58<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2006, St. Kitts. SC58/WW2.
42. **Parsons, E.C.M.**, Lewandowski, J. and Lück, M. 2005. Recent advances in whalewatching research: 2004-2005. Paper presented to the Scientific Committee at the 57<sup>th</sup> Meeting of the International Whaling Commission, 30 May–10 June 2005, Ulsan, Korea. SC57/WW3.
43. **Parsons, E.C.M.** and Fortuna, C.M. 2005. A brief note on definitions of whalewatching activities. Paper presented to the Scientific Committee at the 57<sup>th</sup> Meeting of the International Whaling Commission, 30 May–10 June 2005, Ulsan, Korea. SC57/WW4.
44. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2005. State of the cetacean environment report 2005. Paper presented to the Scientific Committee at the 57<sup>th</sup> Meeting of the International Whaling Commission, 30 May–10 June 2005, Ulsan, Korea. SC57/E8.
45. Childerhouse, S., Gales, N., Baker, C.S., Bass, C., Berggren, P., Bickham, J., Breiwick, J., Brownell, R., Carlson, C., Charrassin, J.-B., Cipriano, F., Clapham, P., Collins, T., Cooke, J., Cozzi, B., Dinter, W., Engel, M., Findlay, K., Fortuna, C., Funahashi, N., Gedamke, J., Groch, K., Iniguez, M., Kasuya, T., Kell, L., Kock, K.-H., Krahn, P., Leaper, R., LeDuc, R., Mattila, D., Moore, S., Northridge, S., Olavarria, C., Palazzo, J., Panigada, S., **Parsons, C.**, Perrin, W., Pomilla, C., Porter, L., Reijnders, P., Ridoux, V., Ritter, F., Robbins, J., Rogan, E., Rojas, L., Rose, N., Rosenbaum, H., Rowles, T., Sadler, L., Secchi, E., Senn, D., Simmonds, M., Sironi, M., Stachowitsch, Thiele, D., Urban, J., Wade, P., Van Waerebeek, K., Waples, R., Weinrich, M., Williams, R., Wilson, B. and Zerbini, A. 2005. Comments on the Government of Japan's proposal for a second phase of special permit whaling in Antarctica (JARPN II). Paper presented to the Scientific Committee at the 57<sup>th</sup> Meeting of the International Whaling Commission, 30 May–10 June 2005, Ulsan, Korea. SC57/O22.
46. **Parsons, E.C.M.**, Classen, J.M, and Bauer, A. 2004. Recent advances in whale-watching research. Paper presented to the Scientific Committee at the 56<sup>th</sup> Meeting of the International Whaling Commission, 29 June–10 July 2004, Sorrento, Italy. SC56/WW6.
47. Stachowitsch, M., **Parsons, E.C.M.** and Rose, N.A. 2004. State of the cetacean environment report 2004. Paper presented to the Scientific Committee at the 56<sup>th</sup> Meeting of the International Whaling Commission, 29 June–10 July 2004, Sorrento, Italy. SC56/E29.
48. Gaillard, T., **Parsons, E.C.M.** and Dell, C. 2003. Field trials of whalewatching data collection forms in West Scotland. Paper presented to the Scientific Committee at the 55<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2003, Berlin, Germany. SC55/WW3.
49. **Parsons, E.C.M.** and Gaillard, T. 2003. Characteristics of high-speed whalewatching vessels in Scotland. Paper presented to the Scientific Committee at the 55<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2003, Berlin, Germany. SC55/WW2.



**Exhibit A: Curriculum Vitae**

50. Stachowitsch, M., Rose, N.A. and **Parsons, E.C.M.** 2003. State of the cetacean environment report. Paper presented to the Scientific Committee at the 55<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2003, Berlin, Germany. SC55/E7.
51. Weinrich, M. and **Parsons, E.C.M.** 2003. Effective use of the Data Recording System to study cetacean populations: a ranking of data types. Paper presented to the Scientific Committee at the 55<sup>th</sup> Meeting of the International Whaling Commission, 26 May–6 June 2003, Berlin, Germany. SC55/WW1.
52. De Boer, M.N., Baldwin, R., Burton, C.L.K., Eyre, L., Jenner, K.C.S., Jenner M-N.M., Keith, S.G., McCabe, K.A., **Parsons, E.C.M.**, Peddemors, V.M., Rosenbaum, H.C., Rudolph, P., Thiele, D. and Simmonds, M. 2002. Cetaceans in the Indian Ocean Sanctuary: a review. Paper presented to the Scientific Committee at the 54<sup>th</sup> Meeting of the International Whaling Commission, 26 April–10 May 2002, Shimonoseki, Japan. SC54/O5.
53. Dolman, S.J., **Parsons, E.C.M.** and Simmonds, M.P. 2002. Noise sources in the cetacean environment. Paper presented to the Scientific Committee at the 54<sup>th</sup> Meeting of the International Whaling Commission, 26 April–10 May 2002, Shimonoseki, Japan. SC54/E7.
54. **Parsons, E.C.M.** 2002. The behaviour and ecology of the Indian humpback dolphin (*Sousa chinensis plumbea*) and the Pacific humpback dolphin (*Sousa chinensis chinensis*). Paper presented to the Scientific Committee at the 54<sup>th</sup> Meeting of the International Whaling Commission, 26 April–10 May 2002, Shimonoseki, Japan. SC54/SM4.
55. **Parsons, E.C.M.** 2002. The impact of pollution on humpback dolphins. Paper presented to the Scientific Committee at the 54<sup>th</sup> Meeting of the International Whaling Commission, 26 April–10 May 2002, Shimonoseki, Japan. SC54/SM5.
56. De Boer, M.N., Eyre, L., Jenner, K.C.S., Jenner M-N.M., Keith, S.G., McCabe, K.A., **Parsons, E.C.M.**, Rosenbaum, H.C., Rudolph, P. and Simmonds, M. 2001. Cetaceans in the Indian Ocean Sanctuary: a preliminary review. Paper presented to the Scientific Committee at the 53<sup>rd</sup> Meeting of the International Whaling Commission, 3-16 July 2001, London. SC53/O6.
57. Grillo, V., **Parsons, E.C.M.** and Shrimpton, J.H. 2001. A review of sewage pollution in Scotland and its potential impacts on harbour porpoise populations. Paper presented to the Scientific Committee at the 53<sup>rd</sup> Meeting of the International Whaling Commission, 3-16 July 2001, London. SC53/E13.
58. **Parsons, E.C.M.** and Woods-Ballard, A. 2001. Voluntary whale-watching codes of conduct: how effective are they in managing whale-watching in West Scotland? Paper presented to the Scientific Committee at the 53<sup>rd</sup> Meeting of the International Whaling Commission, 3-16 July 2001, London. SC53/WW6.
59. Woods-Ballard, A., Hughes, A.J., **Parsons, E.C.M.**, Warburton, C.A., Velandar, K.A. and Ladle, R.J. 2001. The sustainability of whale-watching in Scotland. Paper presented to the Scientific Committee at the 53<sup>rd</sup> Meeting of the International Whaling Commission, 3-16 July 2001, London. SC53/WW5.

**Exhibit A: Curriculum Vitae**

60. Shrimpton, J.H. and **Parsons E.C.M.** 2000. A review of environmental threats to cetaceans in West Scotland. Paper presented to the Scientific Committee at the 52<sup>nd</sup> Meeting of the International Whaling Commission, 11-28 June 2000, Australia. SC52/E24.
61. Stockin, K., Fairbairns, R.S., **Parsons, E.C.M.** and Sims, D. 2000. A note on the effects of diel and seasonal cycles on the dive duration of the minke whale (*Balaenoptera acutorostrata*) off the Isle of Mull, Scotland. Paper presented to the Scientific Committee at the 52<sup>nd</sup> Meeting of the International Whaling Commission, 11-28 June 2000, Australia. SC52/O25.
62. Warburton, C.A., **Parsons, E.C.M.** and Goodwin, H. 2000. Whale-watching and marine wildlife tourism on the Isle of Mull, Scotland. Paper presented to the Scientific Committee at the 52<sup>nd</sup> Meeting of the International Whaling Commission, 11-28 June 2000, Australia. SC52/WW17.
63. **Parsons, E.C.M.** 1999. A review of environmental threats facing coastal small cetaceans in Asia. Paper presented to the Scientific Committee at the 51<sup>st</sup> Meeting of the International Whaling Commission, 1-15 May 1999, Grenada. SC51/SM47.

**PAPERS PRESENTED TO THE UNITED NATIONS ENVIRONMENT PROGRAMME**

1. **Parsons, E.C.M.**, Bonnelly de Calventi, I. and Vail, C.S. 2005. Case study illustrating socio-economics and sustainable utilization of marine mammal resources. Paper presented at the Regional Workshop of Experts for the Development of a Marine Mammal Action Plan for the Wider Caribbean, 18-21 July, Bridgetown, Barbados. UNEP/ CAR WG27/Ref11.
2. **Parsons, E.C.M.** 1995. A status review of small cetaceans in Hong Kong. Paper presented at the UNEP Workshop on the Biology and Conservation of Small Cetaceans and Dugongs of Southeast Asia, 27-30 June, Silliman University, Philippines. UNEP/SEA95/WP20.
3. Ross, G.J.B., Heinsohn, G.E., Cockcroft, V.G., **Parsons, E.C.M.**, Porter, L.J., Preen, A. and Leatherwood, S. 1995. Review of the taxonomic status of humpback dolphins, Genus *Sousa*. Paper presented at the UNEP Workshop on the Biology and Conservation of Small Cetaceans and Dugongs of Southeast Asia, 27-30 June, Silliman University, Philippines. UNEP/SEA95/WP19.

**UNPUBLISHED CONFERENCE PRESENTATIONS**

1. Naylor, W. & **Parsons, E.C.M.** 2018. Whales and us – what the US public knows & thinks about whales & dolphins. Presented at the *2018 American Cetacean Society Conference*, 2-4 November 2018, Newport Beach, California [Spoken; Invited].
2. **Parsons, E.C.M.**, Crerar, L. & Rose, N.A. 2017. Violation of marine mammal regulations and guidelines: the case of Captain James Tiberius Kirk. Presented at the *2018 American Cetacean Society Conference*, 2-4 November 2018, Newport Beach, California. [Poster].
3. **Parsons, E.C.M.**, Cosentino, M. & Wright, A.J. 2018. How not to get ahead in advertising - what many conservation NGOs are doing wrong. Presented at the *1<sup>st</sup> International Conservation Marketing & Engagement Congress*, 25-27 October 2018, Arlington, Washington DC metro area. [Spoken].
4. Sitar, A.S.M. & **Parsons, E.C.M.** 2018. Effectiveness of green commercials. Presented at the *1<sup>st</sup> International Conservation Marketing & Engagement Congress*, 25-27 October 2018, Arlington, Washington DC metro area. [Spoken].

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5. **Parsons, E.C.M.** 2018. A new endangered marine species – marine conservation scientists in academia? Presented at the *5<sup>th</sup> International Marine Conservation Congress*, 24-28 June 2018, Kuching, Malaysia [Spoken].
6. Amerson, A., and **Parsons, E.C.M.** 2018. Evaluating the sustainability of the gray whale-watching industry along the Pacific Coast of North America. Presented at the *5<sup>th</sup> International Marine Conservation Congress*, 24-28 June 2018, Kuching, Malaysia [Spoken].
7. **Parsons, E.C.M.** 2018. This is the worst academic presentation in the world...tribute Presented at the workshop *Talking the talk - giving effective and engaging presentations to diverse audiences*, 22 June 2018, Kuching, Malaysia [Spoken; Invited].
8. **Parsons, E.C.M.** 2018. So you want to be a jedi? Advice for conservation scientists who want to advocate for their science. Presented at the workshop *Talking the talk - giving effective and engaging presentations to diverse audiences*, 22 June 2018, Kuching, Malaysia [Spoken; Invited].
9. **Parsons, E.C.M.**, MacPherson, R., Villagomez, A. 2018. Conservation: “You keep using that word, I do not think it means what you think it means”. Freiburg University, Germany [Spoken; Invited].
10. **Parsons, E.C.M.**, Rose, N.A. and Sitar A.S. 2018. Sex and the sealife (or Blue-chicca-woo-woo Planet). *Presented at Awesome Con*, 30 March -1 April 2018. Washington DC. [Spoken].
11. **Parsons, E.C.M.** 2018. Cetaceans in captivity; conservation and science. Presented at the Symposium *Save the dolphins: Myths and reality of captivity*. 21 February 2018. Chamber of the Deputies, Mexico City, Mexico. [Invited; Spoken]
12. Roland, A., Wage, K.E. & **Parsons, E.C.M.** 2017. The marine soundscape off the Isle of Mull in Scotland's Inner Hebrides. *Presented at 174<sup>th</sup> Meeting of the Acoustical Society of America*, 4-8 December 2017, New Orleans, USA. [Spoken]. Abstract published in: *The Journal of the Acoustical Society of America* 142(4): 2685. <https://doi.org/10.1121/1.5014791>.
13. Brown, D., Robbins, J., Sieswerda, P.L. & **Parsons, E.C.M.** 2017. Urban humpback whales: sighting patterns in the New York metro area. *Presented at 22<sup>nd</sup> Biennial Conference on the Biology of Marine Mammals*, 22-27 October 2017, Halifax, Nova Scotia, Canada [Poster].
14. **Parsons, E.C.M.**, Crerar, L. & Rose, N.A. 2017. Violation of marine mammal regulations and guidelines: the case of Captain James Tiberius Kirk. *Presented at 22<sup>nd</sup> Biennial Conference on the Biology of Marine Mammals*, 22-27 October 2017, Halifax, Nova Scotia, Canada [Poster].
15. Roland, A., **Parsons, E.C.M.** & Wage, K. 2017. Impact of Scottish marine soundscape on minke whale (*Balaenoptera acutorostrata*) behavior budgets and habitat use. *Presented at 22<sup>nd</sup> Biennial Conference on the Biology of Marine Mammals*, 22-27 October 2017, Halifax, Nova Scotia, Canada [Poster].
16. Brown, D., Robbins, J., Sieswerda, P.L. & **Parsons, E.C.M.** 2017. Urban humpback whales: sighting patterns in the New York metro area. *Presented at Student Conference on Conservation Science*, 11-13 October 2017, American Museum of Natural History, New York, USA. [Spoken].
17. Draheim, M.M., **Parsons, E.C.M.** & Crate, S.A. 2017. What is a coyote? The discourse of human-coyote interactions in an urban area. *Presented at 28<sup>th</sup> International Congress for Conservation Biology*, 23-27 July 2017, Cartagena, Colombia [Spoken].
18. **Parsons, E.C.M.** 2016. This is the worst academic presentation in the world...tribute. Presented at the *Student Conference on Conservation Science – New York*, 20-22 October 2016, American Museum of Natural History, New York, USA [Invited; Spoken].

## Exhibit A: Curriculum Vitae

19. **Parsons, E.C.M.** 2016. Advocacy and activism are not dirty words – how activists can better help conservation scientists. Presented at the *4<sup>th</sup> International Marine Conservation Congress*, 30 July-3 August 2016, St John's, Newfoundland, Canada [Spoken].
20. **Parsons, E.C.M.** and Rose, N.A. 2016. The Blackfish Effect – citations, hearings, permits, and bills in the face of changing public opinion on captive cetaceans. Presented at the *4<sup>th</sup> International Marine Conservation Congress*, 30 July-3 August 2016, St John's, Newfoundland, Canada [Spoken].
21. **Parsons, E.C.M.** et al. 2016. Key research questions of global importance for cetacean conservation. Presented at the *2016 Ocean Sciences Meeting*, 21-26 February, New Orleans, Louisiana. [Spoken; Invited].
22. Crerar, L., **Parsons, E.C.M.** and Doming, D. 2015. Illegal trade of protected marine mammal bone via new test can distinguish bone samples sold as “mermaid ivory” or Steller’s sea cow (*Hydrodamalis gigas*) from other species. Presented at *21<sup>st</sup> Biennial Conference on the Biology of Marine Mammals*, 13-18 December 2015, San Francisco, California. [Poster].
23. Roland, A. and **Parsons, E.C.M.** 2015. Why not whaling data. Using energetics models to address population consequences of behavioral disturbance. Presented at *21<sup>st</sup> Biennial Conference on the Biology of Marine Mammals*, 13-18 December 2015, San Francisco, California. [Poster].
24. Sitar, A., May-Collado, L., Wright, A.J., Peters-Burton, E., Rockwood, L. and **Parsons, E.C.M.** 2015. Unsustainable dolphin-watching in Bocas Del Toro, Panama. Presented at *21<sup>st</sup> Biennial Conference on the Biology of Marine Mammals*, 13-18 December 2015, San Francisco, California. [Poster].
25. **Parsons, E.C.M.**, Cosentino, M., Wright, A.J. 2015. How not to get ahead in advertising – what many conservation NGOs are doing wrong. Presented at *27<sup>th</sup> International Congress for Conservation Biology*, 2-6 August 2015, Montpellier, France. [Invited; Spoken].
26. **Parsons, E.C.M.** 2015. Killer whale killers – a review of US court cases on captive orcas. Presented at *29<sup>th</sup> Annual Conference of the European Cetacean Society*, 23-25 March 2015, Malta. [Spoken]
27. **Parsons, E.C.M.**, Dolman, S and others. 2015. Professional ethical principles for the European Cetacean Society. Presented at *29<sup>th</sup> Annual Conference of the European Cetacean Society*, 23-25 March 2015, Malta. [Spoken]
28. Shah, A, & **Parsons, E.C.M.** 2015. Public concern about biodiversity, habitat and species conservation - a case study from the Washington DC metro area. Presented at *The Functions and Values of Biodiversity symposium*, 6-7<sup>th</sup> January 2015, Oxford University. [Poster]
29. **Parsons, E.C.M.** et al. 2014. Key research questions of global importance for cetacean conservation Presented at the *14<sup>th</sup> International Conference of the American Cetacean Society*, 7-9<sup>th</sup> November 2014, Newport Beach, California. [Invited; Spoken].
30. New, L., Hall, A., Harcourt, R., Kaufman, G & **Parsons, E.C.M.** 2014. The modelling and assessment of whale-watching impacts: an introduction. Presented at the *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014, Glasgow, Scotland. [Invited; Spoken].
31. **Parsons, E.C.M.** 2014. Have you got what it takes? Skill sets for the modern marine conservationist. Presented at the workshop *Want to save the world? Here's how: skill sets all marine conservationists should have*, 17<sup>th</sup> August 2014 in *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014, Glasgow, Scotland. [Invited; Spoken].

**Exhibit A: Curriculum Vitae**

32. **Parsons, E.C.M.**, Draheim, M., McCarthy, J.B. and Rose, N.A. 2014. Levels of marine human-wildlife conflict: a whaling case study. Presented at the *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014, Glasgow, Scotland. [Invited; Spoken].
33. **Parsons, E.C.M. et al.** 2014. Key research questions of global importance for cetacean conservation. Presented at the *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014, Glasgow, Scotland. [Spoken].
34. Scarpaci, C. & **Parsons, E.C.M.** 2014. The current state of the whale-watching industry around the globe. Presented at the *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014 Glasgow, Scotland. [Invited; Spoken].
35. Scott, C.A. & **Parsons, E.C.M.** 2014. "Cute and cuddly boys, cute and cuddly" – simply changing animal names can impact conservation concern. Presented at the *3<sup>rd</sup> International Marine Conservation Congress Mammals*, 14-18 August 2014, Glasgow, Scotland. [Invited; Spoken].
36. **Parsons, E.C.M.** 2014. The challenge of the oceans. Presented at the *Managing Our Planet*, 19 February 2014, Woodrow Wilson Center for Scholars, Washington DC. [Invited; Spoken].
37. **Parsons, E.C.M., et al.** 2013. Top questions of global importance for cetacean conservation. Presented at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9-13 December 2013, Dunedin, New Zealand. [Invited; Spoken].
38. Patterson, K., Rose, N.A. & **Parsons, E.C.M.** 2013. Annual survivalship rates (ASR) of captive killer whales: no improvement in 20 years. Presented at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9-13 December 2013, Dunedin, New Zealand. [Spoken].
39. **Parsons, E.C.M.** 2013. What's black and white and eating stuff all over? Hypotheses for the evolution of killer whale coloration and similar coloration patterns in prey species. Presented at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9-13 December 2013, Dunedin, New Zealand. [Poster].
40. Crerar, L.D., Crerar, A., Domning, D. & **Parsons, E.C.M.** 2013. Expanding the known range of the extinct Steller's sea cow (*Hydrodamalis gigas*) in include St. Lawrence Island, Alaska: A new population? Presented at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 9-13 December 2013, Dunedin, New Zealand. [Poster].
41. **Parsons, E.C.M. & Rose, N.A. &** 2013. Cetacean cognition studies and ethics – is it time to re-evaluate marine mammal laws? Presented at the *Cognition and self-awareness in cetaceans: a review of ethical implications for conservation laws* Workshop at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 8 December 2013, Dunedin, New Zealand. [Invited; Spoken].
42. Rose, N.A. & **Parsons, E.C.M.** 2013. Laws governing marine mammals – an ethical review (with emphasis on public display). Presented at the *Cognition and self-awareness in cetaceans: a review of ethical implications for conservation laws* Workshop at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 8 December 2013, Dunedin, New Zealand. [Invited; Spoken].
43. Sitar, A.L. & **Parsons, E.C.M.** 2013. Brief introduction to ethics. Presented at the *Cognition and self-awareness in cetaceans: a review of ethical implications for conservation laws* Workshop at the *20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 8 December 2013, Dunedin, New Zealand. [Invited; Spoken].
44. **Parsons, E.C.M.**, Draheim, M., McCarthy, J.B. and Rose, N.A. 2013. Levels of marine human-wildlife conflict: a whaling case study. Presented at the *11<sup>th</sup> International Mammalogical Congress*, 11-16 August 2013, Belfast, Northern Ireland. [Spoken].

**Exhibit A: Curriculum Vitae**

45. Gleason, C. & **Parsons, E.C.M.** 2013. The conservation awareness and attitudes of whale-watching tourists in Samaná, Dominican Republic. Presented at the *26<sup>th</sup> International Congress for Conservation Biology*, 21-25 July 2013, Baltimore, USA. [Spoken].
46. **Parsons, E.C.M.**, Shah, A., Karaffa, P. & Scott, C. 2013. It's all in the name. Public attitudes to the conservation of biodiversity, habitats and charismatic-sounding species. Presented at the *26<sup>th</sup> International Congress for Conservation Biology*, 21-25 July 2013, Baltimore, USA. [Spoken].
47. Rose, N.A. & **Parsons, E.C.M.** 2013. Human dimensions in marine mammal science. Presented at the *26<sup>th</sup> International Congress for Conservation Biology*, 21-25 July 2013, Baltimore, USA. [Invited; Spoken].
48. **Parsons, E.C.M.**, Draheim, M., McCarthy, J.B. and Rose, N.A. 2013. Levels of marine human-wildlife conflict: a whaling case study. Presented at the *27<sup>th</sup> Annual Conference of the European Cetacean Society*, 7-10 April 2013, Sebutal, Portugal. [Spoken].
49. Perez, N., Harmon, L., Sklarew, D. & **Parsons, C.** 2013. A novel qualitative evaluation technique for an overnight environmental education experience. Presented at the *Biennial Meeting of the George Wright Society*, 11 March 2013, Denver, Colorado. [Spoken]
50. Draheim, M.M., Rockwood, L.L., **Parsons, E.C.M.**, Guagnano, G., and Crate, S. 2012 Social conflict over coyotes in suburban Denver. Presented at *The Wildlife Society Annual Conference*. 13-18 October, Portland, Oregon, USA. [Spoken]
51. **Parsons E.C.M.** 2012. On mermaids, leviathans and fishes royale – a history of marine mammals. Presented at *Pennsic 41*, SCA Event, 27 July-11 August 2012, Cooper's Lake, PA, USA. [Spoken].
52. **Parsons, E.C.M.** 2011. Marine mammal watching guidelines and regulation in Great Britain. Presented at *Viewing and Interacting with Marine Mammals Workshop* at the *19<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 27 November 2011, Tampa, Florida. [Invited; Spoken].
53. Wright, A.J., **Parsons, E.C.M.**, Rose, N.A. and Witcomb-Vos, E. 2011. The science-policy disconnect: language issues at the science-policy boundary. Presented at *Science for the Environment Conference*, 5-6 October 2011, Arhaus University, Denmark. [Spoken].
54. Wright, A.J., Dolman, S.J., Jasny, M., **Parsons, E.C.M.**, Shiedek, D. and Young, S.B. 2011. Myth and momentum: An assessment of environmental impact assessments. Presented at *Science for the Environment Conference*, 5-6 October 2011, Arhaus University, Denmark. [Poster].
55. **Parsons E.C.M.** and Crerar, L. 2011. On mermaids, leviathans and fishes royale – a history of marine mammals. Presented at *Pennsic 40*, SCA Event, 29 July-14 August 2011, Cooper's Lake, PA, USA. [Spoken].
56. **Parsons, E.C.M.**, Gore, M., Marino, L., Milling, C., Orenstein, R. and Rose, N.A. 2011. Intelligence and self-awareness in dolphins – a call for a review of the MMPA, CITES and related laws on ethical grounds. Presented at the *2<sup>nd</sup> International Marine Conservation Congress*, 14-18 May 2011, Victoria, British Columbia, Canada. [Spoken].
57. Rose, N.A. and **Parsons, E.C.M.** 2011. Lost in translation: when marine conservation science meets policy. Presented at the *2<sup>nd</sup> International Marine Conservation Congress*, 14-18 May 2011, Victoria, British Columbia, Canada. [Spoken].
58. **Parsons E.C.M.** and Crerar, L. 2011. On mermaids, leviathans and fishes royale – a history of marine mammals. Presented at *Highland Forde Collegium*, SCA Event, 16 April 2011, MD, USA. [Invited; Spoken].
59. **Parsons, E.C.M.**, Gore, M., Marino, L., Milling, C. and Rose, N.A. 2010. SHILAS (Species of Human Intelligence Level and Awareness of Self) and environmental law – a dolphin case study. Presented at

**Exhibit A: Curriculum Vitae**

*Compassionate Conservation: Animal Welfare in Conservation Practice*, 1-3 September 2010, Lady Margaret Hall, Oxford, UK. [Spoken].

60. **Parsons E.C.M.** and Crerar, L. 2010. On mermaids, leviathans and fishes royale – a history of marine mammals. Presented at *Pennsic 39*, SCA Event, 31 July-15 August 2010, Cooper's Lake, PA, USA. [Spoken].
61. Draheim, M.M., Rose, N.A., Kruse, K.A. and **Parsons E.C.M.** 2010. Looking a gift horse in the mouth: corporate conservation education programs. Presented at the *24<sup>th</sup> International Congress for Conservation Biology*, 3-7 July 2010, Edmonton, Alberta, Canada. [Poster].
62. Patterson, K.W. and **Parsons E.C.M.** 2010. Conservation, captivity and whaling: a survey of Belize whale-watching tourist attitudes to cetacean conservation issues. Presented at the *24<sup>th</sup> International Congress for Conservation Biology*, 3-7 July 2010, Edmonton, Alberta, Canada. [Spoken].
63. Sitar-Gonzales, A. and **Parsons E.C.M.** 2010. Low public awareness of the conservation status of high profile polar species: polar bears and penguins. Presented at the *24<sup>th</sup> International Congress for Conservation Biology*, 3-7 July 2010, Edmonton, Alberta, Canada. [Poster].
64. Ambler, J. B. and **Parsons E.C.M.** 2010. The unique demographics of whale watchers in Virginia and their views on anthropogenic and environmental threats to whales. South East And Mid-Atlantic Marine Mammal Symposium (SEAMAMMS) Annual Meeting, March 2010, Virginia Beach, Virginia. [Spoken].
65. Draheim, M., Rockwood, L.L., **Parsons, E.C.M.** and Guagnano, G. 2009. Developing effective outreach material content to encourage human-coyote coexistence. In: *Carnivores 2009. Carnivores in a Changing World, November 15-18, Denver, Colorado*. p. 23. Defenders of Wildlife, Washington D.C. (Abstract). [Spoken].
66. Rose, N.A. and **Parsons, E.C.M.** 2009. Lost in translation - the science-policy intersect. Presented at the Workshop *Lost in Translation - The Science-Policy Intersect at the 18<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 11 October 2009, Quebec City, Canada. [Keynote; Invited; Spoken].
67. **Parsons E.C.M.** and Draheim, M. 2009. A reason to support whale conservation – a tourism impact case study from the Dominican Republic. Presented at the *18<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 12-16 October 2009, Quebec City, Canada. [Poster].
68. Patterson, K. and **Parsons E.C.M.** 2009. Conservation, captivity and whaling: a survey of Belize whale-watching tourist attitudes to cetacean conservation issues. Presented at the *18<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 12-16 October 2009, Quebec City, Canada. [Poster].
69. Draheim, Megan M., Larry L. Rockwood, Gregory Guagnano, and **E.C.M Parsons**. 2009. Predators and people in an urbanizing world. Presented at the *International Conference on Human Ecology*, 29 June – 3 July 2009, Manchester, UK. [Spoken].
70. Draheim, Megan M., Larry L. Rockwood, **E.C.M. Parsons** and Gregory Guagnano. 2009. Attitudes towards coyotes in urban landscapes: Management and public outreach implications. Presented at the *International Symposium of Urban Wildlife and the Environment*, 21-24 June 2009, Amherst, MA. [Spoken].
71. Luksenburg, J. and **Parsons, E.C.M.** 2009. The 'krill surplus' hypothesis and the shift in age at sexual maturity in the Antarctic minke whale *Balaenoptera bonaerensis*: A retrospective salute. Presented at the *International Marine Conservation Congress*, 20-24 May 2009, George Mason University, Fairfax, Virginia. [Poster].
72. **Parsons E.C.M.** and Draheim, M. 2009. A reason to support whale conservation – a tourism impact case study from the Dominican Republic. Presented at the *23<sup>rd</sup> Annual Conference of the European Cetacean Society*, 2-4 March 2009, Istanbul, Turkey. [Poster].

## Exhibit A: Curriculum Vitae

73. **Parsons E.C.M.** 2009. To publish or not to publish? That is the question... Presented at the Environmental Science & Policy Graduate Student Association Seminar on Publishing Scientific Papers. 23 February 2009, George Mason University, VA. [Invited; Spoken].
74. Draheim, M., Rockwood, L.L., **Parsons E.C.M.** and Guagnano, G. 2008. A survey of attitudes towards coyotes in a recently colonized area. Presented at the *Northeast Natural History Conference X*, 17-18 April 2008, Albany, NY. [Spoken].
75. Luksenburg, J., **Parsons, E.C.M.** and Ambler, J. 2008. Whaling and the shift in age at sexual maturity in the Antarctic minke whale *Balaenoptera bonaerensis*: a review. Presented at the *22<sup>nd</sup> Annual Conference of the European Cetacean Society*, 10<sup>th</sup>-12<sup>th</sup> March 2008, Egmond aan Zee, the Netherlands. [Poster]
76. **Parsons, E.C.M.** 2008. Whales and sonar: the science. Presented at *Of Whales and Sonar: Environmental Protection and Naval Training Collide in Winter v. NRDC*, Environmental Law Institute's Endangered Environmental Laws Program Ocean Seminar Series, 10<sup>th</sup> October 2008. Environmental Law Institute, Washington DC. [Invited; Spoken]
77. Sellares, R., Lancho, P., Bonnely, I., McConchie, T. and **Parsons, E.C.M.** 2008. New information on dolphin studies in waters of the Parque Nacional Del Este, Dominican Republic. Presented at the *22<sup>nd</sup> Annual Conference of the European Cetacean Society*, 10<sup>th</sup>-12<sup>th</sup> March 2008, Egmond aan Zee, the Netherlands. [Poster]
78. Sellares, R., Lancho, P., Bonnely, I., McConchie, T. and **Parsons, E.C.M.** 2008. Delfines en el Parque Nacional del Este. Continuación y Contribución. Presented at *VI Congreso de la Biodiversidad Caribeña*, 29 January – 1 february 2008, Santo Domingo, Dominican Republic. [Poster]
79. Draheim, M., Sellares, R., Bonnely, I., Bloom, T., Lancho, P., Jose Marti, M.J., Singh, M., Rose, N., and **Parsons, E.C.M.** 2007. The potential for marine mammal tourism in Bayahibe, Dominican Republic. Presented at the *Center for Tropical Ecology and Conservation 5<sup>th</sup> Annual Symposium, "Coastal Connections: Linking Research and Education in Tropical Coastal Systems"*, 3<sup>rd</sup> November 2007, Antioch University New England, Keene, New Hampshire. [Spoken]
80. **Parsons, E.C.M.** 2007. Codes of conduct for marine mammal tourism [Codigos de conducto para el turismo de mamiferos marinos]. Presented at the *2<sup>nd</sup> International Marine Mammal Ecotourism Workshop [II Taller Internacional Ecoturismo de Mamiferos Marinos]*, 20<sup>th</sup>-21<sup>st</sup> June 2007, Bayahibe, Dominican Republic. [Invited; Spoken]
81. **Parsons, E.C.M.**, Dolman, S., Jasny, M., Rose, N.A., Simmonds, M.P. & Wright, A.J. 2007. Seismic survey guidelines to reduce impacts on cetaceans: a critique. Presented at the *17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 29 November -3 December 2007, Cape Town, South Africa. [Spoken].
82. **Parsons, E.C.M.**, Sellares, R., Lancho, P., Draheim, M., McConchie, T., Whaley, A. and Bonnely, I. 2007. Dolphins and daiquiris: integrated coastal research, ecotourism and environmental education in the Caribbean. Presented at the *Center for Tropical Ecology and Conservation 5<sup>th</sup> Annual Symposium, "Coastal Connections: Linking Reseach and Education in Tropical Coastal Systems"*, 3<sup>rd</sup> November 2007, Antioch University New England, Keene, New Hampshire. [Keynote; Invited; Spoken]
83. McConchie, T.C. and **Parsons, E.C.M.** 2007. A comparison of digital media for dolphin photo-identification. Presented at the *17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 29 November -3 December 2007, Cape Town, South Africa. [Poster].
84. Wood, T., Szulczewski, M., **Parsons, C.**, Brown, B., Fuertes, A., Sevin, J. and Dallmeier, F. 2007. Smithsonian Mason Semester. George Mason University working in partnership with the Smithsonian Institution National Zoo. Presented at the *SENCER (Science Education for New Civic Engagements and Responsibilities) Summer Institute 2007*, 1<sup>st</sup> – 6<sup>th</sup> August 2007, Portland, Maine. [Poster]



## Exhibit A: Curriculum Vitae

85. Wood, T., Balint, P., Dallmeier, F., **Parsons, C.**, Anderson, W., Valle, C. and Brown, B. 2007. The Galapagos Islands – best preserved, most endangered, education for a conservation culture and ethic. *Presented at the SENCER (Science Education for New Civic Engagements and Responsibilities) Summer Institute 2007*, 1<sup>st</sup> – 6<sup>th</sup> August 2007, Portland, Maine. [Poster]
86. Wright, A.J., Fidler, F., and **Parsons, E.C.M.** 2007. By the numbers: resolving the conflicting standards of science and policy. Presented at the *17<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 29 November -3 December 2007, Cape Town, South Africa. [Poster].
87. Wright, A.J., **Parsons, E.C.M.**, Rose, N.A., Vos, E. 2007. Don't quote me on that: bridging the language gap between scientists and policy makers. Presented at the *21<sup>th</sup> Annual Conference of the European Cetacean Society*, 22<sup>nd</sup> – 25<sup>th</sup> April 2007, San Sebastián, Spain. [Spoken]
88. Rose, N.A. and **Parsons, E.C.M.** 2006. Marine noise. Presented at the *10<sup>th</sup> International Conference of the American Cetacean Society*, 10-12 November 2006, Ventura, CA, USA. [Invited; Spoken]
89. **Parsons, E.C.M.** 2005. From whaling to whale-watching: the history of marine mammal exploitation in Scotland. Presented at the *16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 12-16 December 2005, San Diego, USA. [Poster]
90. **Parsons, E.C.M.** 2005. Whalewatching: the global situation. Presented at the workshop *Whale watching – the way we should go: from whale meat market to whale watching market*. 15 June 2005, Ulsan, Korea. [Invited; Spoken]
91. Whaley, A.R., Bonnelly de Calventi I., McConchie, T. and **Parsons, E.C.M.** 2005. Initial findings from a dolphin research and conservation project in the Dominican Republic. Presented at the *16<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 12-16 December 2005, San Diego, USA. [Poster]
92. Whaley, A.R., **Parsons, E.C.M.**, Vasquez, O., Bonnelly de Calventi, I. and Rose, N.A. 2005. A multi-national dolphin research and conservation project in the Dominican Republic. In: *19<sup>th</sup> Annual Conference of the European Cetacean Society and Associated Workshops, April 2-7 2004, La Rochelle, France*, p. 70. European Cetacean Society, La Rochelle. (Abstract). [Poster]
93. **Parsons, E.C.M.**, Bonnelly de Calventi I., Rose, N.A., Vasquez, O., Whaley, A.R., Draheim, M. and McConchie, T. 2005. A multi-national dolphin research and conservation project in the Dominican Republic. Presented at *V Congreso de la Biodiversidad Caribeña*, 25-38 January 2005, Santo Domingo, Dominican Republic. [Poster]
94. Howard, C. and **Parsons, E.C.M.** 2004. Public attitudes to cetacean conservation in Scotland. Presented the *Wildlife Conservation: In Pursuit of Ecological Sustainability* forum, 16-19 June 2004, Limerick, Ireland. [Poster]
95. Howard, C. and **Parsons, E.C.M.** 2004. Public attitudes to cetacean conservation in Scotland. Presented at the *18<sup>th</sup> Annual Conference of the European Cetacean Society*, 28-31 March 2004, Kolmården, Sweden. [Poster]
96. **Parsons, E.C.M.** and Hung, S. 2004. Cetaceans and noise in Hong Kong: a case study. Presented at *Policy on Sound and Marine Mammals: An International Workshop*, 28-30 September 2004, London, England. [Poster]
97. **Parsons, E.C.M.** and Howard, C. 2004. Public attitudes to cetacean conservation in Scotland. In *18<sup>th</sup> Annual Meeting. Society for Conservation Biology, SCB 2004*, p. 210. Omnipress, New York. (Abstract).
98. **Parsons, E.C.M.** and Rawles, C. 2004. Why killing marine mammals does not pay: the projected negative impacts on tourism by whaling in Iceland and seal culls in Scotland. Presented the *Wildlife Conservation: In Pursuit of Ecological Sustainability* forum, 16-19 June 2004, Limerick, Ireland. [Poster]

## Exhibit A: Curriculum Vitae

99. Scott, N. J. and **Parsons, E.C.M.** 2003. Cetacean conservation issues in South-West Scotland: a survey of public awareness and opinions. Presented at the *15<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 15-19 December 2003, Greensboro, North Carolina. [Poster]
100. **Parsons, E.C.M.** 2003. The importance of conducting research in the development of whale and dolphin watching. Presented at the *Taller Internacional Para La Conservación De Los Delfines de la República Dominicana*, 26-27 June, 2003, Santo Domingo, Dominican Republic. [Invited; Spoken]
101. **Parsons, E.C.M.** 2003. Naval noise and disturbance of cetaceans in west Scotland. Presented at the Conference on the *Environmental Consequences of Underwater Sound*, 12-16 May, 2003, San Antonio, Texas. [Spoken]
102. **Parsons, E.C.M.** 2003. A review of whale-watching in Scotland. Presented at the *3<sup>rd</sup> Conference on Whale-watching in Iceland*, 22-23 March, 2003, Husavik, Iceland. [Invited; Spoken]
103. Carlson, C. and **Parsons, E.C.M.** 2003. Whale-watching around the world, the development of guidelines and regulations, and the role of operators in managing their industry. Presented at the *3<sup>rd</sup> Conference on Whale-watching in Iceland*, 22-23 March, 2003, Husavik, Iceland. [Invited; Spoken]
104. Carlson, C. and **Parsons, E.C.M.** 2003. Guidance and co-operation between whale-watching boats. Can whaling and whale-watching coexist? Presented at the *3<sup>rd</sup> Conference on Whale-watching in Iceland*, 22-23 March, 2003, Husavik, Iceland. [Invited; Spoken]
105. Carlson, C. and **Parsons, E.C.M.** 2003. How to market Icelandic whale-watching abroad. Presented at the *3<sup>rd</sup> Conference on Whale-watching in Iceland*, 22-23 March, 2003, Husavik, Iceland. [Invited; Spoken]
106. Dell, C., **Parsons, E.C.M.** and Evans, P.G.H. 2002. The distribution of killer whales (*Orcinus orca*) in West Scotland and movements of identified individuals. Presented at the *16<sup>th</sup> Annual Conference of the European Cetacean Society*, 7-11 April 2002, Liege, Belgium. [Poster]
107. **Parsons E.C.M.**, Warburton, C.A., Woods-Ballard, A., Hughes, A. and Johnston, P. 2001. The impact of whale-watching on the economy of West Scotland. Presented at the *14<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 28 November - 3 December 2001, Vancouver, Canada. [Poster]
108. Warburton, C.A., **Parsons E.C.M.**, Woods-Ballard, A., Hughes, A. and Johnston, P. 2001. Whale-watchers in West Scotland. Presented at the *14<sup>th</sup> Biennial Conference on the Biology of Marine Mammals*, 28 November - 3 December 2001, Vancouver, Canada. [Poster]
109. Soole, C., Gill, A., Johnston, P., Kuiker, K. and **Parsons, E.C.M.** 2001. Bottlenose dolphins in West Scotland. Presented at the *15<sup>th</sup> Annual Conference of the European Cetacean Society*, 6-9 May 2001, Rome, Italy. [Poster]
110. **Parsons E.C.M.** and Warburton, C.A. 2000. Marine wildlife tourism and the economic benefits to island communities. Presented at the *6<sup>th</sup> Islands of the World Conference*, 16-20 October 2000, Isle of Skye, Scotland. [Spoken]
111. Barry, S., **Parsons, E.C.M.**, McNee, J., McClellan, R., Evans, P.G.H., and McClellan, L. 2000. Cetacean sighting distribution in West Scotland in 1999. Presented at the *14<sup>th</sup> Annual Conference of the European Cetacean Society*, 2-5 April 2000, Cork, Ireland. [Poster]
112. **Parsons, E.C.M.**, Felley, M.L. and Hoffmann, C.C. 1997. Cetacean conservation in Hong Kong: problems and proposals. Presented at the *Annual Meeting of the Society of Conservation Biology*, June 1997, Vancouver, Canada. [Spoken].

**Exhibit A: Curriculum Vitae**

113. Kinoshita, R., Hui, S.W., Parsons, E.C.M., Vedros, N. and Geraci, J.R. 1997. Melioidosis in cetaceans in Ocean Park: an overview. Presented at the *28<sup>th</sup> Annual Conference of the International Association for Aquatic Animal Medicine*, March 1997, Harderwijk, The Netherlands. [Spoken]
114. Parsons, E.C.M. 1996. A summary of cetacean research in Hong Kong. Paper presented at the *Hong Kong Government Colloquium on Dolphin Management*, 1-3 July, Hong Kong. [Spoken]
115. Parsons, E.C.M. 1996. Research on Hong Kong's dolphins and porpoises. In: *Joint Universities Biology Symposium, 19 October 1996*. p 38. Hong Kong University of Science and Technology. (Abstract) [Spoken]
116. Parsons, E.C.M., Wong, H.P., To, Y.Y. and Porter, L.J. 1995. Aspects of the behaviour of the Indo-Pacific humpbacked dolphin (*Sousa chinensis*) in Hong Kong. Presented at *24th International Ethological Conference*, 10-17 August, Honolulu, Hawaii. [Poster]
117. Parsons, E.C.M. and Wong, H.P. 1995. Land-based surveys of Finless porpoise behaviour in Hong Kong's territorial waters. Presented at the *11th Biennial Conference on the Biology of Marine Mammals*, 14-18 December, Orlando, Florida. [Poster]

## Exhibit A: Curriculum Vitae

## TEACHING ACTIVITY

## GMU TEACHING EXPERIENCE

August 2008 to May 2018 Associate Professor

June 2005 to July 2008. Assistant Professor

August 2003 to May 2005. Adjunct Professor

– Department of Environmental Science and Policy, George Mason University, Fairfax, Virginia.

Instructed the following courses for undergraduate and graduate students:

**Courses taught:**

*Lecture courses*

- Introduction to Oceanography (BIOL/GEOL 309; 3.0 credit hours)
- Marine Ecology (BIOL 449; 3.0 credit hours)
- Marine Mammal Biology & Conservation<sup>+</sup> (EVPP 419/519/BIOL 454; 3.0 credit hours)
- Marine Mammal Biology & Conservation Field Course<sup>+</sup> (EVPP 420/520/BIOL 455; 1.0 credit hours)
- Marine Conservation<sup>+</sup> (EVPP 421/521/BIOL 450; 3.0 credit hours)
- Fundamentals of Ecology (EVPP 607 / BIO 607; 3.0 credit hours)
- Tropical Ecosystems (BIOL/EVPP 543-001; 4.0 credit hours)
- Conservation & Environmental Communication: Theory & Practice<sup>+</sup> (EVPP 429/529; 3.0 credit hours)

*Field courses*

- Underwater Research Methods<sup>+</sup> (EVPP 505 / BIOL 508; 2.0 credit hours)
- Ecology & Environment in Ecuador: Amazon & Galapagos<sup>+</sup> (EVPP 490/505 / BIOL 440; 3.0 credit hours)
- Antarctica: Ecology & Conservation<sup>+</sup> (EVPP 490/505 / BIOL 440; 3.0 credit hours)
- Tropical Ecosystems (BIOL/EVPP 440/ BIOL/EVPP 543-201; 1.0 credit hours)

*Graduate seminar courses*

- Hot Topics in Marine Conservation (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Endangered Mammals (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Endangered Species (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Urban Wildlife (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Ecotourism (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Cons.in Latin America& the Caribbean (seminar course)<sup>+#</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Marine Conservation Policy (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Environmental Education (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Animal Intelligence (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Ecological History (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Environmental Communication (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Animal and Conservation Ethics (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Hot Topics in Conservation (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)
- Tropical Conservation (seminar course)<sup>+</sup> (BIOL 692 / EVPP 692 / 991; 1.0-2.0 credit hours)

○ CURRICULUM DEVELOPMENT

- EVPP 480 – Sustainability in Practice [synthesis class] (with A Wingfield & E. Peters)
- Minor in Ocean and Estuarine Science
- Minor in Environmental Policy
- Minor in Conservation Biology
- Minor in Applied Conservation Studies (with A. Marchant & T. Wood)
- Minor in Environmental Science

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- Minor in Sustainability (with A. Wingfield)
- Minor in Palaeontology (with J. Nord & M. Uhen)
- Earth Science BS Concentration in Coastal Oceanography and Estuarine Science (with R. McBride)
- Biology BS Concentration in Marine and Freshwater Biology
- BS in Environmental Science (with R. Jonas)
- BS in Environmental Science Concentration in Conservation.
- BS in Environmental Science Concentration in Ecological Science.
- BS in Environmental Science Concentration in Marine, Estuarine and Freshwater Ecology.
- BA in Environmental and Sustainability Studies (with N. Darnell, R. Jonas, A. Wingfield & E. Freeman)
- Environmental Science & Policy MS Concentration in Conservation Science & Policy
- Environmental Science & Policy MS Concentration in Environmental Communication
- Accelerated MS in Environmental Science & Policy (with D Sklarew)
- Graduate certificate in Pedagogy in Geography and Environmental Science (with N Tryfonia)
- BA in Geography Concentration in Environmental Geography (with S Fuhrmann)
- BS in Environmental Science Concentration in Wildlife (with J vanderHam)

**Smithsonian-Mason Semester Conservation Studies courses** (with T. Wood, A. Marchant & J. Sevin)

- CONS 401 Conservation Sciences I (3 credits)<sup>+</sup>
- CONS 402 Conservation Sciences II (4 credits)<sup>+</sup>
- CONS 410 Human Dimensions of Global Conservation (3 credits)<sup>+</sup>
- CONS 490 Integrated Conservation Strategies (3 credits)<sup>+</sup>
- CONS 320 Conservation in Practice (3 credits)<sup>+</sup>

+ new courses developed

**OTHER TEACHING EXPERIENCE**

**October 2001 to present. Research Associate** – University Marine Biological Station, Millport, Isle of Cumbrae, Glasgow, Scotland.

Lectured on marine tourism lectures for BSc course in Coastal Zone Management (Birbeck College)  
Also developed and lectured for BSc in Marine Biology (Universities of London, Glasgow & Leicester):

**Courses taught:**

- Biology of Whales, Dolphins, Turtles and Seals<sup>+</sup> (US equivalent: 400 level; 6.0 credit hours)
- Large marine vertebrates<sup>+</sup> (US equivalent: 400 level; 6.0 credit hours)

+ new courses developed

**June 1998 to February 2003. Research & Education Director** – The Hebridean Whale and Dolphin Trust, Tobermory, Isle of Mull, Scotland.

Co-ordinated local and regional marine environmental education programmes including:

- lectures to schools, colleges, academic institutes and community groups;
- hosting workshops and symposiums;
- designing educational publications (booklets, leaflets, displays, presentations, posters);
- educational website design;
- devising and supervising MSc, PhD and undergraduate projects;
- writing popular articles and press releases;
- press/radio interviews and TV appearances;
- fund-raising for educational projects;
- managing education-related contracts, budgets and staff; and
- co-ordinating an internship programme.

**Exhibit A: Curriculum Vitae**

**Courses developed:**

- o Marine Mammal Science (outline for University of the Highlands & Islands BSc in Marine Science)
- o Marine Mammal Awareness Course (developed for tourism professionals)

**Sept. 1997 - June 1998. Lecturer** - Cannington College, Somerset, UK.

Delivering the following course to college students:

- o Mammalian anatomy & physiology (US equivalent: 200 level; 4.0 credit hours)
- o Human anatomy & physiology (US equivalent: 100 level; 4.0 credit hours)
- o Cell biology & genetics (US equivalent: 200 level; 4.0 credit hours)
- o Introductory chemistry (US equivalent: 100 level; 4.0 credit hours)
- o Statistics and data handling (US equivalent: 100 level; 3.0 credit hours)
- o Management of animal collections (US equivalent: 200 level; 3.0 credit hours)
- o Wildlife conservation & rehabilitation (US equivalent: 200 level; 3.0 credit hours)

Responsibilities included course organisation and setting and marking of assignments and examinations.

**Courses developed:**

- o Wildlife Rehabilitation Field Course (US equivalent: 200 level; 1.0 credit hours)

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**Nov. 1991 - June 92. Biology Teacher and House Tutor**- Christ's Hospital School, W. Sussex, UK.

Taught the following subjects to secondary (high) school students

- o Introductory chemistry;
- o Introductory physics;
- o Introductory and Intermediate Biology (to O-level).

House tutor with responsibilities including organising entertainment, discipline, and general administrative duties in a boys' boarding-house. Coached various school swimming teams. Helped organise the school's Duke of Edinburgh Award and conservation groups. Tutored final year (A-level) students for Oxford & Cambridge entrance examinations.

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**OTHER TEACHING**

**May 2000 to December 2002. Visiting Lecturer** – Dept. Life Sci., Napier University, Edinburgh, Scotland.

Visiting lecturer for MSc ecotourism course, developing courses and MSc/ undergraduate research project supervision.

**Courses developed:**

- o Marine and Island-based Ecotourism Field Course (US equivalent: 500 level; 2.0 credit hours)

**June 1997 - Aug. 1997. Biology Tutor** - NTK Educational Consultants, Hong Kong.

Provided tuition in biology and biochemistry for college and university entrants.

**Dec. 1993 - Dec. 1996. Lecturing and Undergraduate supervision** – Department of Biodiversity & Conservation, Hong Kong University.

Supervision of undergraduates in dolphin-related research projects. Lectured extensively, venues including Hong Kong University, local schools and other universities.

**July 1992 - Sept. 1992. Freelance tutor, Hong Kong.**

Provided tuition in Biology, Chemistry, Maths and Geography for high school students.

**Exhibit A: Curriculum Vitae**

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***Other Lecturing Experience***

Lectures and presentations given to universities and academic institutions in Bermuda, Canada, China, Chile, Dominican Republic, Germany, Hong Kong, Iceland, Italy, Japan, Korea, Pakistan, Singapore, Spain, South Africa, St. Kitts, Taiwan, the USA and the UK. Over 200 lectures/talks given to wildlife trusts, community groups and the general public.

## Exhibit A: Curriculum Vitae

## A Summary of GMU Course evaluations

## 2003-2004

ASSESSMENT CATEGORIES / SCORE (5 max)	Oceanography - Fall 03	Oceanography - Fall 04	Marine Mammal Biology - Spring 04	Marine Conservation Seminar - Fall 04	
	BIOL /GEOL 309	BIOL /GEOL 309	EVPP 505/ BIOL 507	EVPP 692	EVPP 991
Instructors preparation for the class	4.69	4.89	4.93	4.67	5.00
Organization of course materials	4.62	4.89	4.86	4.67	4.60
Motivation to learn provided by instructor	4.15	4.61	4.86	4.50	4.60
Intellectual challenge provided by instructor	4.42	4.67	4.64	4.50	4.60
Fairness with which instructor dealt with student	4.56	4.83	4.86	4.83	4.80
Overall rating of course	4.46	4.78	4.93	4.83	5.00

## 2005

ASSESSMENT CATEGORIES / SCORE (5 max)	Marine Mammal Biology - Spring 05		Oceanography - Fall 05	Marine Conservation - Fall 05	Fundamentals of Ecology - Fall 05
	EVPP 490	EVPP 505	BIOL / GEOL 309	EVPP 505/ BIOL 508	EVPP 607/BIOL 607
Instructors preparation for the class	5.00	5.00	5.00	5.00	4.72
Organization of course materials	5.00	5.00	4.67	4.90	4.56
Motivation to learn provided by instructor	4.83	4.80	4.50	4.90	4.67
Intellectual challenge provided by instructor	4.67	4.70	4.44	4.80	4.61
Fairness with which instructor dealt with student	5.00	5.00	4.83	5.00	4.94
Overall rating of course	4.83	4.90	4.89	5.00	4.82

## 2006

ASSESSMENT CATEGORIES / SCORE (5 max)	Tropical Ecosystems - Spring 06	Marine Ecology - Spring 06	Marine Mammal Biology - Spring 06	Endangered Mammals Seminar - Spring 06
	BIOL / EVPP 543	BIOL 449	EVPP 490 / 505 / BIOL 507	EVPP 692 / 991
Instructors preparation for the class	4.82	4.64	4.92	4.75
Organization of course materials	4.91	4.55	4.88	4.71
Motivation to learn provided by instructor	4.91	4.21	4.71	4.88
Intellectual challenge provided by instructor	4.82	4.30	4.50	4.75
Fairness with which instructor dealt with student	5.00	4.48	4.79	4.88
Overall rating of course	4.91	4.39	4.75	4.71



## Exhibit A: Curriculum Vitae

## 2006 continued

ASSESSMENT CATEGORIES SCORE (5 max)	Urban Wildlife - Fall 06	Marine Conservation - Fall 06	Fundamentals of Ecology - Fall 06
	EVPP 692 / 991	EVPP 490 / 505	BIOL/ EVPP 607
STUDENT NUMBERS	6	16	37
<i>Course requirements stated in syllabus</i>	5.00	4.90	4.88
<i>Course was well organised</i>	4.80	5.00	4.88
<i>Instructor explained materials clearly</i>	5.00	5.00	4.73
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.80	4.68
<i>Instructor showed respect for students</i>	5.00	5.00	4.96
<i>Instructor was accessible electronically or in person</i>	5.00	5.00	4.77
<i>Instructors followed stated grading procedure</i>	5.00	5.00	4.96
<i>Exams reflected what was covered in course</i>	5.00	4.90	4.92
<i>Assessments helped me to learn the material</i>	4.67	4.90	4.62
<i>Readings helped me to understand the course topic</i>	4.75	4.70	4.38
<i>Assessments and exams were returned properly</i>	5.00	5.00	5.00
<i>Instructor covered the important aspects of the course</i>	4.83	5.00	4.81
<i>The instructor made the course intellectually stimulating</i>	4.83	4.90	4.62
<i>The instructor encouraged students to be involved</i>	5.00	4.90	4.69
<i>Overall rating of the teaching</i>	4.83	4.90	4.73
<i>Overall rating of the course</i>	4.83	4.90	4.36

## 2007

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Ecology - Spring 07	Marine Mammal Biology & Conservation - Spring 07	Latin & Caribbean Conservation - Spring 07	Ecotourism - Spring 07	
	BIOL 449	EVPP 490 505 / BIOL 507	EVPP 692 / 991	EVPP 692	EVPP 991
STUDENT NUMBERS	58	28	10	5	7
<i>Course requirements stated in syllabus</i>	4.69	4.75	4.90	5.00	4.43
<i>Course was well organised</i>	4.67	4.44	4.90	5.00	4.57
<i>Instructor explained materials clearly</i>	4.62	4.75	4.80	5.00	4.57
<i>Helpful comments &amp; suggestion on returned material</i>	4.48	4.31	4.75	5.00	5.00
<i>Instructor showed respect for students</i>	4.77	4.75	4.90	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.69	4.44	4.90	5.00	5.00
<i>Instructors followed stated grading procedure</i>	4.76	4.69	5.00	5.00	5.00
<i>Exams reflected what was covered in course</i>	4.50	4.80	5.00	N/A	5.00
<i>Assessments helped me to learn the material</i>	4.24	4.50	5.00	4.80	4.86
<i>Readings helped me to understand the course topic</i>	3.85	3.86	5.00	4.33	5.00
<i>Assessments and exams were returned properly</i>	4.67	4.69	5.00	5.00	N/A
<i>Instructor covered the important aspects of the course</i>	4.68	4.75	5.00	4.75	4.80
<i>The instructor made the course intellectually stimulating</i>	4.48	4.69	5.00	4.60	4.57
<i>The instructor encouraged students to be involved</i>	4.41	4.69	5.00	5.00	4.86
<i>Overall rating of the teaching</i>	4.59	4.73	4.90	4.80	4.67
<i>Overall rating of the course</i>	4.50	4.75	4.90	4.80	4.50

## Exhibit A: Curriculum Vitae

## 2007 continued

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Conservation Policy – Summer 07	Oceanography - Fall 07	Marine Conservation - Fall 07	Fundamentals of Ecology - Fall 07
	EVPP 692 / 991	BIOL / GEOL 309	BIOL 508/ EVPP 490 / 505	BIOL/ EVPP 607
<b>STUDENT NUMBERS</b>	<b>9</b>	<b>66</b>	<b>24</b>	<b>21</b>
<i>Course requirements stated in syllabus</i>	5.00	4.85	4.86	4.83
<i>Course was well organised</i>	4.78	4.82	4.86	4.67
<i>Instructor explained materials clearly</i>	4.78	4.71	4.90	4.88
<i>Helpful comments &amp; suggestion on returned material</i>	4.83	4.59	4.71	4.78
<i>Instructor showed respect for students</i>	5.00	4.88	4.91	4.89
<i>Instructor was accessible electronically or in person</i>	4.89	4.69	4.91	4.88
<i>Instructors followed stated grading procedure</i>	4.89	4.79	4.86	4.94
<i>Exams reflected what was covered in course</i>	5.00	4.79	4.91	4.89
<i>Assessments helped me to learn the material</i>	4.78	4.58	4.75	4.56
<i>Readings helped me to understand the course topic</i>	4.75	4.61	4.86	4.76
<i>Assessments and exams were returned properly</i>	4.83	4.64	4.95	4.94
<i>Instructor covered the important aspects of the course</i>	4.89	4.85	4.86	4.78
<i>The instructor made the course intellectually stimulating</i>	5.00	4.71	4.77	4.78
<i>The instructor encouraged students to be involved</i>	5.00	4.58	4.95	4.67
<i>Overall rating of the teaching</i>	4.88	4.78	4.91	4.78
<i>Overall rating of the course</i>	4.88	4.72	4.86	4.67

## 2008

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Ecology – Spring 08	Marine Mammal Biology & Conservation – Spring 08	Underwater Research Methods - Spring 08	Tropical ecosystems - Spring 08
	BIOL 449	EVPP 490 505 / BIOL 507	EVPP 505 / BIOL 508	EVPP 543-201
<b>STUDENT NUMBERS</b>	<b>90</b>	<b>27</b>	<b>9</b>	<b>12</b>
<i>Course requirements stated in syllabus</i>	4.89	4.89	4.78	4.90
<i>Course was well organised</i>	4.77	4.74	4.44	4.90
<i>Instructor explained materials clearly</i>	4.73	4.84	4.78	4.90
<i>Helpful comments &amp; suggestion on returned material</i>	4.53	4.65	5.00	4.80
<i>Instructor showed respect for students</i>	4.90	4.95	4.89	4.90
<i>Instructor was accessible electronically or in person</i>	4.75	4.72	4.89	5.00
<i>Instructors followed stated grading procedure</i>	4.86	4.89	4.88	4.90
<i>Exams reflected what was covered in course</i>	4.74	4.89	5.00	4.90
<i>Assessments helped me to learn the material</i>	4.57	4.53	4.67	4.90
<i>Readings helped me to understand the course topic</i>	4.54	4.85	4.83	4.90
<i>Assessments and exams were returned properly</i>	4.50	4.84	5.00	4.90
<i>Instructor covered the important aspects of the course</i>	4.83	4.89	4.67	4.90
<i>The instructor made the course intellectually stimulating</i>	4.69	4.63	5.00	4.90
<i>The instructor encouraged students to be involved</i>	4.50	4.42	5.00	4.89
<i>Overall rating of the teaching</i>	4.76	4.74	4.78	5.00
<i>Overall rating of the course</i>	4.66	4.63	4.78	5.00

## Exhibit A: Curriculum Vitae

## 2008 continued

ASSESSMENT CATEGORIES SCORE (5 max)	Conservation Science - Spring 08
	NCLC475
STUDENT NUMBERS	15
<i>Course requirements stated in syllabus</i>	5.00
<i>Course was well organised</i>	4.92
<i>Instructor explained materials clearly</i>	4.92
<i>Helpful comments &amp; suggestion on returned material</i>	4.77
<i>Instructor showed respect for students</i>	5.00
<i>Instructor was accessible electronically or in person</i>	4.92
<i>Instructors followed stated grading procedure</i>	5.00
<i>Exams reflected what was covered in course</i>	4.89
<i>Assessments helped me to learn the material</i>	4.92
<i>Readings helped me to understand the course topic</i>	4.92
<i>Assessments and exams were returned properly</i>	4.75
<i>Instructor covered the important aspects of the course</i>	4.85
<i>The instructor made the course intellectually stimulating</i>	4.92
<i>The instructor encouraged students to be involved</i>	5.00
<i>Overall rating of the teaching</i>	4.92
<i>Overall rating of the course</i>	5.00

ASSESSMENT CATEGORIES SCORE (5 max)	Oceanography - Fall 08	Marine Conservation - Fall 08	Environmental Education - Fall 08
	BIOL / GEOL 309	BIOL 507/ EVPP 421/521	EVPP 692/991
STUDENT NUMBERS	119	27	7
<i>Course requirements stated in syllabus</i>	4.90	4.89	5.00
<i>Course was well organised</i>	4.86	5.00	4.86
<i>Instructor explained materials clearly</i>	4.90	4.94	4.86
<i>Helpful comments &amp; suggestion on returned material</i>	4.55	4.89	5.00
<i>Instructor showed respect for students</i>	4.92	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.74	4.72	5.00
<i>Instructors followed stated grading procedure</i>	4.86	4.84	5.00
<i>Exams reflected what was covered in course</i>	4.80	5.00	5.00
<i>Assessments helped me to learn the material</i>	4.51	4.89	5.00
<i>Readings helped me to understand the course topic</i>	4.56	4.80	5.00
<i>Assessments and exams were returned properly</i>	4.78	5.00	4.80
<i>Instructor covered the important aspects of the course</i>	4.88	5.00	5.00
<i>The instructor made the course intellectually stimulating</i>	4.64	5.00	5.00
<i>The instructor encouraged students to be involved</i>	4.35	4.94	5.00
<i>Overall rating of the teaching</i>	4.78	5.00	5.00
<i>Overall rating of the course</i>	4.57	4.89	5.00

## Exhibit A: Curriculum Vitae

2009

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Ecology – Spring 09	Marine Mammal Biology & Conservation – Spring 09	Conservation Science – Spring 08	Marine Mammal Biology Field Course – Summer 09
	BIOL 449	EVPP 419 519 / BIOL 507	CONS 401	EVPP 490/505/ BIOL 440/508
STUDENT NUMBERS	76		15	6
<i>Course requirements stated in syllabus</i>	5.00	4.67	4.50	4.67
<i>Course was well organised</i>	4.91	4.92	4.29	4.50
<i>Instructor explained materials clearly</i>	4.94	4.92	4.60	5.00
<i>Helpful comments &amp; suggestion on returned material</i>	4.93	4.38	4.36	4.75
<i>Instructor showed respect for students</i>	4.91	5.00	4.85	5.00
<i>Instructor was accessible electronically or in person</i>	4.97	4.83	4.42	5.00
<i>Instructors followed stated grading procedure</i>	4.94	4.54	4.42	5.00
<i>Exams reflected what was covered in course</i>	4.79	4.85	4.85	5.00
<i>Assessments helped me to learn the material</i>	4.88	4.31	4.73	5.00
<i>Readings helped me to understand the course topic</i>	4.82	3.75	4.64	4.83
<i>Assessments and exams were returned properly</i>	4.41	4.92	4.08	5.00
<i>Instructor covered the important aspects of the course</i>	4.91	4.62	4.71	5.00
<i>The instructor made the course intellectually stimulating</i>	4.73	4.23	4.71	5.00
<i>The instructor encouraged students to be involved</i>	4.69	4.38	4.79	5.00
<i>Overall rating of the teaching</i>	4.79	4.62	4.85	5.00
<i>Overall rating of the course</i>	4.74	4.54	4.73	5.00

ASSESSMENT CATEGORIES SCORE (5 max)	Oceanography – Fall 09	Marine Conservation – Fall 09	Animal Intelligence – – Fall 09	Animal Intelligence – Fall 09
	BIOL/GEOL 309	EVPP 419 519 / BIOL 508	EVPP 692	EVPP 991
STUDENT NUMBERS	119	28	5	5
<i>Course requirements stated in syllabus</i>	4.77	4.40	4.33	4.50
<i>Course was well organised</i>	4.75	4.60	4.33	4.25
<i>Instructor explained materials clearly</i>	4.63	4.45	3.50	4.75
<i>Helpful comments &amp; suggestion on returned material</i>	3.97	3.95	4.00	5.00
<i>Instructor showed respect for students</i>	4.67	4.80	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.58	4.50	4.67	5.00
<i>Instructors followed stated grading procedure</i>	4.83	4.84	4.67	5.00
<i>Exams reflected what was covered in course</i>	4.83	4.90	n/a	5.00
<i>Assessments helped me to learn the material</i>	4.40	4.55	5.00	4.75
<i>Readings helped me to understand the course topic</i>	4.18	4.21	4.67	4.25
<i>Assessments and exams were returned properly</i>	4.36	4.70	5.00	5.00
<i>Instructor covered the important aspects of the course</i>	4.79	4.90	5.00	4.75
<i>The instructor made the course intellectually stimulating</i>	4.25	4.60	4.33	4.67
<i>The instructor encouraged students to be involved</i>	3.95	4.55	5.00	5.00
<i>Overall rating of the teaching</i>	4.54	4.47	4.67	5.00
<i>Overall rating of the course</i>	4.25	4.50	4.67	4.50

## Exhibit A: Curriculum Vitae

2010

ASSESSMENT CATEGORIES SCORE (5 max)	Ecology of Ecuador: Amazon & Galapagos - Spring 10	Marine Mammal Biology & Conservation - Spring 10	Conservation Science - Spring 10	Marine Mammal Biology Field Course - Summer 10
	BIOL 440 / EVPP 505	EVPP 419/519 / BIOL 508	CONS 402	EVPP 490/505/ BIOL 440/508
<b>STUDENT NUMBERS</b>	<b>12</b>	<b>38</b>	<b>14</b>	<b>5</b>
<i>Course requirements and expectations were clear</i>	4.70	4.81	4.64	4.75
<i>Course was well organized</i>	4.40	4.86	4.50	4.25
<i>Instructor helped me to better understand the course material</i>	4.90	4.81	4.93	4.75
<i>Helpful comments &amp; suggestion on returned material</i>	n/a	4.65	4.57	5.00
<i>Instructor showed respect for students</i>	4.90	4.86	4.93	4.75
<i>Instructor was accessible electronically or in person</i>	5.00	4.95	4.71	5.00
<i>Course grading policy was clear</i>	5.00	4.86	4.43	5.00
<i>Graded work reflected what was covered in course</i>	n/a	4.95	4.86	5.00
<i>Assignments helped me to learn the material</i>	5.00	4.75	4.79	5.00
<i>Readings helped me to understand the course topic</i>	4.63	4.44	4.79	5.00
<i>Assessments and exams were returned in a reasonable amount of time</i>	n/a	4.95	4.36	5.00
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.89	4.86	4.86	4.5
<i>The instructor made the course intellectually stimulating</i>	5.00	4.76	5.00	4.75
<i>The instructor encouraged students to be involved</i>	4.80	4.71	4.86	5.00
<i>Overall rating of the teaching</i>	4.90	4.76	4.93	5.00
<i>Overall rating of the course</i>	4.90	4.65	4.86	5.00

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Conservation - Fall 10	Ecological History - Fall 10	Human Dimensions of Conservation - Fall 10
	EVPP 421 / 521	EVPP 692/991	CONS 410
<b>STUDENT NUMBERS</b>	<b>28</b>	<b>15</b>	<b>20</b>
<i>Course requirements and expectations were clear</i>	4.76	4.60	n/a*
<i>Course was well organized</i>	4.82	4.40	4.00
<i>Instructor helped me to better understand the course material</i>	4.65	3.80	4.65
<i>Helpful comments &amp; suggestion on returned material</i>	4.35	3.20	4.37
<i>Instructor showed respect for students</i>	4.88	4.70	4.80
<i>Instructor was accessible electronically or in person</i>	4.53	4.22	4.47
<i>Course grading policy was clear</i>	4.65	4.50	n/a*
<i>Graded work reflected what was covered in course</i>	4.82	4.88	4.55
<i>Assignments helped me to learn the material</i>	4.59	4.40	4.60
<i>Readings helped me to understand the course topic</i>	3.50	4.43	n/a*
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	4.33	n/a*
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.82	4.33	4.47
<i>The instructor made the course intellectually stimulating</i>	4.35	4.10	4.80
<i>The instructor encouraged students to be involved</i>	4.41	5.00	4.85
<i>Overall rating of the teaching</i>	4.49	4.10	4.75
<i>Overall rating of the course</i>	4.50	4.10	4.70

\*NB syllabus, readings, examinations and distribution of grades was dealt by other faculty members as part of a team-taught, multi-faculty course.

## Exhibit A: Curriculum Vitae

2011

ASSESSMENT CATEGORIES SCORE (5 max)	Ecology of Ecuador: Amazon & Galapagos – Spring 11	Marine Mammal Biology & Conservation – Spring 11	Marine Mammal Biology & Conservation Field Course – Summer11
	BIOL 440 / EVPP 490/505	EVPP 419/519 / BIOL 507	EVPP 490/505/ BIOL 440/507
STUDENT NUMBERS	7	33	9
<i>Course requirements and expectations were clear</i>	4.71	4.72	5.00
<i>Course was well organized</i>	4.71	4.88	4.83
<i>Instructor helped me to better understand the course material</i>	4.43	4.88	4.83
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.81	5.00
<i>Instructor showed respect for students</i>	4.71	4.88	5.00
<i>Instructor was accessible electronically or in person</i>	5.00	4.88	5.00
<i>Course grading policy was clear</i>	4.86	4.85	4.83
<i>Graded work reflected what was covered in course</i>	5.00	4.88	4.83
<i>Assignments helped me to learn the material</i>	5.00	4.69	4.60
<i>Readings helped me to understand the course topic</i>	4.33	4.67	4.40
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	4.92	5.00
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.86	4.92	5.00
<i>The instructor made the course intellectually stimulating</i>	5.00	4.96	5.00
<i>The instructor encouraged students to be involved</i>	5.00	4.80	5.00
<i>Overall rating of the teaching</i>	4.57	4.88	5.00
<i>Overall rating of the course</i>	4.86	4.85	4.83

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Conservation – Fall 11	Endangered species seminar – Fall 11	Endangered species seminar (2 <sup>nd</sup> section) – Fall 11	Conservation Theory – Fall 11
	EVPP 421/521	EVPP 692/991	EVPP 692/991	CONS 401
STUDENT NUMBERS	38	15	19	15
<i>Course requirements and expectations were clear</i>	4.85	4.79	4.71	4.67
<i>Course was well organized</i>	4.96	4.71	4.65	4.67
<i>Instructor helped me to better understand the course material</i>	4.96	4.50	4.60	4.93
<i>Helpful comments &amp; suggestion on returned material</i>	4.93	4.07	4.60	4.60
<i>Instructor showed respect for students</i>	4.96	4.86	4.94	4.60
<i>Instructor was accessible electronically or in person</i>	4.96	4.57	4.82	4.36
<i>Course grading policy was clear</i>	4.88	4.62	4.88	4.60
<i>Graded work reflected what was covered in course</i>	4.92	4.85	4.75	4.73
<i>Assignments helped me to learn the material</i>	4.81	4.57	4.73	4.60
<i>Readings helped me to understand the course topic</i>	4.65	4.14	4.50	4.38
<i>Assessments and exams were returned in a reasonable amount of time</i>	4.92	4.82	4.86	4.21
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.96	4.54	4.75	4.92
<i>The instructor made the course intellectually stimulating</i>	4.85	4.62	4.81	4.87
<i>The instructor encouraged students to be involved</i>	4.93	4.92	4.94	4.86
<i>Overall rating of the teaching</i>	4.96	4.64	4.65	4.93
<i>Overall rating of the course</i>	4.96	4.50	4.71	4.86

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## Exhibit A: Curriculum Vitae

2012

ASSESSMENT CATEGORIES SCORE (5 max)	Tropical Ecosystems - Spring 12	Marine Mammal Biology & Conservation - Spring 12	Environmental Communication Seminar - Spring 12	Marine Mammal Biology Field Course - Summer 12
	BIOL 543 / EVPP 543	EVPP 419/519 / BIOL 454	EVPP 692/991	EVPP 419+ 420 /519+520 BIOL 454+455
STUDENT NUMBERS	10	41	13	9
<i>Course requirements and expectations were clear</i>	4.78	4.85	5.00	4.22
<i>Course was well organized</i>	4.00	4.90	5.00	4.56
<i>Instructor helped me to better understand the course material</i>	4.33	4.90	5.00	5.00
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.75	4.92	4.67
<i>Instructor showed respect for students</i>	4.78	4.95	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.60	4.85	4.83	5.00
<i>Course grading policy was clear</i>	4.88	4.85	4.85	4.22
<i>Graded work reflected what was covered in course</i>	4.71	4.90	4.92	4.33
<i>Assignments helped me to learn the material</i>	4.75	4.79	4.92	4.67
<i>Readings helped me to understand the course topic</i>	3.67	4.35	5.00	4.44
<i>Assessments and exams were returned in a reasonable amount of time</i>	3.33	4.83	5.00	4.43
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.29	4.80	5.00	5.00
<i>The instructor made the course intellectually stimulating</i>	4.33	4.85	5.00	5.00
<i>The instructor encouraged students to be involved</i>	4.56	4.85	5.00	5.00
<i>Overall rating of the teaching</i>	4.60	4.85	5.00	5.00
<i>Overall rating of the course</i>	4.60	4.84	5.00	4.56

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Conservation - Fall 12	Marine Conservation - Seminar - Fall 12
		EVPP 692/991
STUDENT NUMBERS	36	15
<i>Course requirements and expectations were clear</i>	4.77	4.79
<i>Course was well organized</i>	4.85	4.64
<i>Instructor helped me to better understand the course material</i>	4.73	4.86
<i>Helpful comments &amp; suggestion on returned material</i>	4.48	4.69
<i>Instructor showed respect for students</i>	4.92	4.93
<i>Instructor was accessible electronically or in person</i>	4.64	4.86
<i>Course grading policy was clear</i>	4.69	4.93
<i>Graded work reflected what was covered in course</i>	4.73	4.93
<i>Assignments helped me to learn the material</i>	4.58	4.93
<i>Readings helped me to understand the course topic</i>	4.30	5.00
<i>Assessments and exams were returned in a reasonable amount of time</i>	4.65	4.91
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.88	4.85
<i>The instructor made the course intellectually stimulating</i>	4.77	4.86
<i>The instructor encouraged students to be involved</i>	4.92	4.93
<i>Overall rating of the teaching</i>	4.84	4.79
<i>Overall rating of the course</i>	4.76	4.79

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## Exhibit A: Curriculum Vitae

2013

ASSESSMENT CATEGORIES SCORE (5 max)	Antarctic Ecology & Conservation - Spring 13	Marine Mammal Biology & Conservation - Spring 13	Animal & Conservation Ethics Seminar - Spring 13
	EVPP 490/505/ BIOL 508	EVPP 419/519 / BIOL 454	EVPP 692/991
<b>STUDENT NUMBERS</b>	<b>4</b>	<b>45</b>	<b>13</b>
<i>Course requirements and expectations were clear</i>	5.00	4.93	4.92
<i>Course was well organized</i>	4.50	4.93	4.58
<i>Instructor helped me to better understand the course material</i>	5.00	5.00	4.67
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.89	3.75
<i>Instructor showed respect for students</i>	5.00	5.00	4.83
<i>Instructor was accessible electronically or in person</i>	5.00	4.96	4.90
<i>Course grading policy was clear</i>	5.00	4.89	4.83
<i>Graded work reflected what was covered in course</i>	5.00	4.89	4.92
<i>Assignments helped me to learn the material</i>	5.00	4.74	4.50
<i>Readings helped me to understand the course topic</i>	5.00	4.75	4.44
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	4.96	4.90
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	5.00	5.00	4.58
<i>The instructor made the course intellectually stimulating</i>	5.00	4.89	4.58
<i>The instructor encouraged students to be involved</i>	5.00	4.78	4.83
<i>Overall rating of the teaching</i>	5.00	5.00	4.50
<i>Overall rating of the course</i>	5.00	4.96	4.25

ASSESSMENT CATEGORIES SCORE (5 max)	Environmental Communication Techniques - Fall 13	Marine Conservation - Fall 13
	EVPP 692/991	EVPP 421/521 / BIOL 450
<b>STUDENT NUMBERS</b>	<b>15</b>	<b>40</b>
<i>Course requirements and expectations were clear</i>	4.77	4.87
<i>Course was well organized</i>	4.69	4.90
<i>Instructor helped me to better understand the course material</i>	4.69	4.90
<i>Helpful comments &amp; suggestion on returned material</i>	4.62	4.67
<i>Instructor showed respect for students</i>	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.92	5.00
<i>Course grading policy was clear</i>	4.62	4.83
<i>Graded work reflected what was covered in course</i>	4.69	4.97
<i>Assignments helped me to learn the material</i>	4.62	4.90
<i>Readings helped me to understand the course topic</i>	4.43	4.88
<i>Assessments and exams were returned in a reasonable amount of time</i>	4.90	4.87
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.69	4.90
<i>The instructor made the course intellectually stimulating</i>	4.85	4.73
<i>The instructor encouraged students to be involved</i>	4.92	4.83
<i>Overall rating of the teaching</i>	4.69	4.79
<i>Overall rating of the course</i>	4.58	4.79

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## Exhibit A: Curriculum Vitae

2014

ASSESSMENT CATEGORIES SCORE (5 max)	Hot Topics in Conservation - Spring 14	Marine Mammal Biology & Conservation - Spring 14	Marine Conservation - Fall 14	Tropical Conservation - Fall14
	EVPP 692/991	EVPP 419/519 / BIOL 454	EVPP 421/521 / BIOL 450	EVPP 692/991
STUDENT NUMBERS	14	35	30	12
<i>Course requirements and expectations were clear</i>	4.69	4.67	4.86	5.00
<i>Course was well organized</i>	4.54	4.81	4.82	5.00
<i>Instructor helped me to better understand the course material</i>	4.38	4.81	4.82	4.73
<i>Helpful comments &amp; suggestion on returned material</i>	4.58	4.79	4.59	4.91
<i>Instructor showed respect for students</i>	4.77	4.95	5.00	5.00
<i>Instructor was accessible electronically or in person</i>	4.55	4.80	4.95	4.91
<i>Course grading policy was clear</i>	4.69	4.57	4.76	5.00
<i>Graded work reflected what was covered in course</i>	4.75	4.80	4.85	5.00
<i>Assignments helped me to learn the material</i>	4.23	4.52	4.77	4.91
<i>Readings helped me to understand the course topic</i>	4.44	4.57	4.33	5.00
<i>Assessments and exams were returned in a reasonable amount of time</i>	4.70	4.90	4.91	5.00
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.92	4.85	4.95	5.00
<i>The instructor made the course intellectually stimulating</i>	4.38	4.75	4.90	4.82
<i>The instructor encouraged students to be involved</i>	4.62	4.72	4.82	5.00
<i>Overall rating of the teaching</i>	4.38	4.81	4.95	4.82
<i>Overall rating of the course</i>	4.00	4.71	4.82	4.90

2015

ASSESSMENT CATEGORIES SCORE (5 max)	Environmental Communication - Spring 15	Marine Mammal Biology & Conservation - Spring 15	Marine Conservation - Fall 15	Endangered Species - Fall 15
	EVPP 490/505	EVPP 419/519 / BIOL 454	EVPP 421/521 / BIOL 450	EVPP 692/991
STUDENT NUMBERS	8	28	25	8
<i>Course requirements and expectations were clear</i>	4.88	4.89	4.67	5.00
<i>Course was well organized</i>	5.00	5.00	4.78	5.00
<i>Instructor helped me to better understand the course material</i>	5.00	4.84	4.94	5.00
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.67	4.67	5.00
<i>Instructor showed respect for students</i>	5.00	5.00	4.83	5.00
<i>Instructor was accessible electronically or in person</i>	4.88	4.68	4.76	5.00
<i>Course grading policy was clear</i>	4.88	4.95	4.61	5.00
<i>Graded work reflected what was covered in course</i>	5.00	5.00	4.61	5.00
<i>Assignments helped me to learn the material</i>	5.00	4.61	4.44	5.00
<i>Readings helped me to understand the course topic</i>	4.75	4.63	4.60	5.00
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	5.00	4.89	5.00
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	5.00	5.00	4.94	5.00
<i>The instructor made the course intellectually stimulating</i>	5.00	4.89	5.00	5.00
<i>The instructor encouraged students to be involved</i>	5.00	4.44	4.83	5.00
<i>Overall rating of the teaching</i>	5.00	4.95	5.00	5.00
<i>Overall rating of the course</i>	5.00	4.94	4.83	5.00

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## Exhibit A: Curriculum Vitae

2016

ASSESSMENT CATEGORIES SCORE (5 max)	Environmental Communication - Spring 16	Marine Mammal Biology & Conservation - Spring 16	Hot Topics in Conservation Science - Fall 16	Marine Conservation - Fall 16
	EVPP 490/505	EVPP 419/519 / BIOL 454	EVPP 692/991	EVPP 421/521 / BIOL 450/507
STUDENT NUMBERS	6	30	13	41
<i>Course requirements and expectations were clear</i>	4.67	4.95	4.77	4.72
<i>Course was well organized</i>	5.00	4.90	4.69	4.92
<i>Instructor helped me to better understand the course material</i>	5.00	4.95	4.77	4.96
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.71	4.85	4.88
<i>Instructor showed respect for students</i>	5.00	4.90	5.00	4.92
<i>Instructor was accessible electronically or in person</i>	4.80	4.71	5.00	4.75
<i>Course grading policy was clear</i>	4.88	4.86	4.85	4.72
<i>Graded work reflected what was covered in course</i>	5.00	4.90	4.85	4.80
<i>Assignments helped me to learn the material</i>	5.00	4.81	4.85	4.83
<i>Readings helped me to understand the course topic</i>	5.00	4.85	4.69	4.68
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	4.90	5.00	4.96
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	5.00	5.00	4.77	4.96
<i>The instructor made the course intellectually stimulating</i>	4.80	4.95	4.69	4.84
<i>The instructor encouraged students to be involved</i>	5.00	4.81	4.85	4.71
<i>Overall rating of the teaching</i>	5.00	4.90	4.77	4.92
<i>Overall rating of the course</i>	5.00	5.00	4.69	4.83

2017

ASSESSMENT CATEGORIES SCORE (5 max)	Tropical Ecosystems - Spring 17	Marine Mammal Biology & Conservation - Spring 17	Tropical Conservation - Fall 17	Marine Conservation - Fall 17
	EVPP 543	EVPP 419/519 / BIOL 454	EVPP 692/991	EVPP 421/521 / BIOL 450/507
STUDENT NUMBERS	13	26	6	36
<i>Course requirements and expectations were clear</i>	5.00	4.74	5.00	4.70
<i>Course was well organized</i>	5.00	4.79	4.67	4.83
<i>Instructor helped me to better understand the course material</i>	5.00	4.74	5.00	4.61
<i>Helpful comments &amp; suggestion on returned material</i>	5.00	4.39	5.00	4.61
<i>Instructor showed respect for students</i>	5.00	4.68	5.00	4.96
<i>Instructor was accessible electronically or in person</i>	5.00	4.68	4.83	4.87
<i>Course grading policy was clear</i>	5.00	4.63	4.67	4.74
<i>Graded work reflected what was covered in course</i>	5.00	4.79	4.83	4.78
<i>Assignments helped me to learn the material</i>	4.56	4.59	5.00	4.61
<i>Readings helped me to understand the course topic</i>	5.00	4.67	5.00	4.50
<i>Assessments and exams were returned in a reasonable amount of time</i>	5.00	4.88	5.00	4.91
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	5.00	4.74	4.67	5.00
<i>The instructor made the course intellectually stimulating</i>	4.78	4.68	5.00	4.48
<i>The instructor encouraged students to be involved</i>	5.00	4.58	5.00	4.70
<i>Overall rating of the teaching</i>	4.89	4.68	5.00	4.61
<i>Overall rating of the course</i>	4.78	4.68	4.67	4.65

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## Exhibit A: Curriculum Vitae

2018

ASSESSMENT CATEGORIES SCORE (5 max)	Marine Mammal Biology & Conservation - Spring 18 EVPP 419/519 / BIOL 454	Environmental Science Communication - Spring 18 EVPP 429/529
<b>STUDENT NUMBERS</b>	<b>35</b>	<b>10</b>
<i>Course requirements and expectations were clear</i>	4.76	4.90
<i>Course was well organized</i>	4.86	4.90
<i>Instructor helped me to better understand the course material</i>	4.85	5.00
<i>Helpful comments &amp; suggestion on returned material</i>	4.71	5.00
<i>Instructor showed respect for students</i>	4.90	5.00
<i>Instructor was accessible electronically or in person</i>	4.89	4.80
<i>Course grading policy was clear</i>	4.71	4.90
<i>Graded work reflected what was covered in course</i>	4.86	5.00
<i>Assignments helped me to learn the material</i>	4.85	5.00
<i>Readings helped me to understand the course topic</i>	4.60	4.80
<i>Assessments and exams were returned in a reasonable amount of time</i>	4.90	5.00
<i>Instructor covered the important aspects of the course as outlined in the syllabus</i>	4.95	5.00
<i>The instructor made the course intellectually stimulating</i>	4.81	5.00
<i>The instructor encouraged students to be involved</i>	4.86	5.00
<i>Overall rating of the teaching</i>	4.81	4.90
<i>Overall rating of the course</i>	4.71	5.00

## Exhibit A: Curriculum Vitae

**RESEARCH STUDENTS SUPERVISED****UK Graduate Theses - External supervisor**

- Hoffmann C.C. 1995. *Feasibility study into the proposed sanctuary at Lung Kwu Chau and Sha Chau for the Indo-Pacific humpback dolphin Sousa chinensis*. Masters Thesis. Heriot-Watt University, Edinburgh. 62pp.
- Shrimpton, J. 1999. *Cetacean conservation in the Hebrides: review and management recommendations*. Masters thesis. Heriot-Watt University, Edinburgh. 122pp.
- Hill, J.A. 1999. *Oil spills and marine wildlife: guidelines for a response plan for the Isle of Mull*. Masters thesis. Heriot-Watt University, Edinburgh. 117pp.
- Leaver, I.D. 1999. *A contingency plan for the at sea response to an oil spill incident in the waters of the Inner Hebrides*. Masters thesis. Heriot-Watt University, Edinburgh. 54pp.
- Warburton, C. 1999. *Marine wildlife tourism and whale-watching on the Isle of Mull*. Masters thesis. University of Kent. 100pp.
- Hughes, A. 2000. *Tourism as a sustainable industry in the rural community of Arisaig, West Scotland*. Masters thesis. Napier University. 44pp.
- Pooley, S. 2000. *An identification of potential impacts of military activities on cetaceans in the Hebrides*. Masters thesis. Heriot-Watt University, Edinburgh. 72pp.
- Woods-Ballard, A. 2000. *Whale watching in Scotland, with a case study on the Isle of Skye*. Masters thesis. Edinburgh University. 121pp.
- Potter, S.L. 2001. *Distribution and abundance of bottlenose dolphins, Tursiops truncatus, around the Isle of Islay, Scotland*. Masters thesis. Aberdeen University. 69pp.
- Scott, N. 2001. *Marine environmental awareness in Argyll, West Scotland*. Masters thesis. Stirling University. 103pp.
- Zölck, M. 2001. *Land-based survey of cetaceans around Ardnamurchan Point and the Small Isles, Scotland*. Masters thesis. Aberdeen University. 47pp.
- Bridgeland, R. 2002. *A study of the extent of interpretation in marine wildlife tourism in Western Scotland*. Masters thesis. Napier University. 67pp.
- Lazaratou, M. 2002. *Results of a preliminary land based survey on common minke whales (Balaenoptera acutorostrata) in the waters around Ardnamurchan Point, Scotland*. Masters thesis. University of Edinburgh. 40pp.
- Howard, C. 2003. *Cetacean conservation and tourism issues: a comparative study of marine environmental awareness in the central belt*. Masters thesis. Heriot-Watt University, Edinburgh, Scotland. 89pp.
- Barry, S. 2004. *An overview of the effects of naval sonar activity world-wide on cetaceans with relation to cetaceans on the west coast of Scotland*. Masters thesis. Heriot-Watt University, Edinburgh. 94pp.

**External examiner**

- Ponnampalam, L. 2008. *The ecology and habitat use of spinner dolphins in Egypt*. PhD thesis. University Marine Biological Station Millport (University of London).
- Lambert, E. 2012. *The resilience of whale-watching tourism to climate change*. PhD thesis. Aberdeen University.
- Bannon, S. 2013. *The influence of environmental variable in the spatial and temporal occurrence of cetaceans off the west coast of Scotland*. PhD thesis. Aberdeen University.
- Meissner, A. 2016. PhD thesis. *Marine mammal tourism in the Bay of Plenty, New Zealand: effects, implications and management*. Massey University, New Zealand.

**Exhibit A: Curriculum Vitae****US Graduate Theses****Masters Advisory Committee Director - Completed:**

(winners of prizes #; nominated for prizes \*)

**Thesis track MS students**

- McConchie, T. 2007. *Computer assisted analysis of individual bottlenose dolphin fins off Wallops Island, Virginia*. Masters thesis. George Mason University, Virginia. (joint director with D. Kelso)
- #O'Bryhim, J. 2009. *Public knowledge, attitudes and behavior to sharks and shark conservation*. Masters thesis. George Mason University, Virginia.
- Wong, D.L. 2009. *Public perception of mammals and mammal conservation in Fairfax County*. Masters thesis. George Mason University, Virginia.
- #Fazio, J. 2010. *A behavioral assessment of the clouded leopard (Neofelis nebulosa); a comparative analysis of reproductive success*. Masters thesis. George Mason University, Virginia.
- Griffith, D. 2010. *Waste reduction as a method to reach conservation goals; a comparative analysis of plastic waste management*. Masters thesis. George Mason University, Virginia.
- #Patterson, K. 2010. *Conservation, captivity, and whaling: a survey of Belize whale-watching tourist attitudes to cetacean conservation issues*. Masters thesis. George Mason University, Virginia.
- #Sitar-Gonzales, A. 2011. *A survey of student opinions of green commercials*. Master's thesis. George Mason University, Virginia.
- Tracy, S. 2012. *Understanding conservation: a study of student attitudes and understanding of the effects of human activities on global ecosystems*. Master's thesis. George Mason University, Virginia.
- \*Redman, M. 2013. *Keeping green schoolyards green: a study of challenges and success strategies for the long-term sustainability of schoolyard habitats*. Master's thesis. George Mason University, Virginia.
- \*Ozbenian, S. 2013. *Survey of attitudes toward, conflicts with and management of wolves and bears in rural villages in Armenia*. Master's thesis. George Mason University, Virginia.
- Roland, A. 2013. *Population size and viability of bottlenose dolphins (Tursiops truncatus) off the coast of the Parque Nacional De Este, Dominican Republic*. Master's thesis. George Mason University, Virginia.
- #Abrahams, H. 2014. *Mitochondrial control region diversity and phylogeographic patterns of the Atlantic white-sided dolphin (Lagenorhynchus acutus) along the East Coast of the United States*. Master's thesis. George Mason University, Virginia.
- Scott, C. 2015. *Otter social science research: an evaluation of the general public's knowledge of otter species*. Master's thesis. George Mason University, Virginia.
- #Denham, W. 2015. *Public knowledge, attitudes and behaviour towards dolphins and dolphin conservation*. Master's thesis. George Mason University, Virginia.
- Donahue, K. 2015. *Public perception of cetacean conservation in the DC Metropolitan area*. Master's thesis. George Mason University, Virginia.
- Kanojia, M. 2017. *Addressing deforestation on the island of Hispaniola*. Master's thesis. George Mason University, Virginia.
- #Brown, D.M. 2018. *An analysis of opportunistic data to investigate humpback whale (Megaptera novaeangliae) sighting patterns and vessel risk in the northwestern New York Bight*. Master's thesis. George Mason University, Virginia.

**Project track MS students**

- McDuff, H. 2008. *How sea turtle populations are impacted by shrimp trawls along the United States east coast and the Gulf of Mexico*. Masters project. George Mason University, Virginia.
- Tador, S. 2008. *The use of patent variables in biotech firm valuation-the case of misspecified models*. Masters project. George Mason University, Virginia.
- Willis, T. 2009. *Decentralized wind energy generation: advantages and challenges*. Masters project. George Mason University, Virginia.

**Exhibit A: Curriculum Vitae**

- Galgano, M.R. 2011. *A review of Brucella — focusing on marine mammals and the associated zoonotic health risk*. Master's project. George Mason University, Virginia.
- Hendren, A. 2012. *The public perception of marine invertebrates in the Washington, D.C. Area*. Master's project. George Mason University, Virginia.
- Sharma, A. 2012. *Marine plastic pollution*. Master's project. George Mason University, Virginia.
- McKee, K. 2016. *Is it just a little bit of history repeating? Using past forestry strategies to frame future marine planning*. Master's project. George Mason University, Virginia.
- Scully, S. 2017. *Gyres ... or international garbage dumps*. Master's project. George Mason University, Virginia.

**PhD Student Advisory Committee Director - Completed:**

- Ambler, J.B. 2011. *Whales and the people who watch them: baleen whales in Virginia's near-shore waters and the educational and conservation potential of whale watching*. Doctoral thesis. George Mason University, Virginia.
- #Crerar, L. 2012. *Genetics of the Steller's sea cow (Hydrodamalis gigas): a study of ancient bone material*. Doctoral thesis. George Mason University, Virginia.
- Luksenburg, J. 2012. *The cetaceans of Aruba: a multidisciplinary study*. Doctoral thesis. George Mason University, Virginia.
- \*Shafer, C.L. 2013. *Grizzly emigration and land use: an interdisciplinary case study of the Greater Yellowstone ecosystem*. Doctoral thesis. George Mason University, Virginia.
- #Thornhill, J.L., 2014. *Bridging the gap between research and decision-making: empirical evidence from a case study of gray wolf (Canis lupus) management in the US*. Doctoral thesis. George Mason University, Virginia.
- #Sitar, A.S.M. 2015. *Is dolphin-watching sustainable in Bocas Del Toro, Panama?* Doctoral thesis. George Mason University, Virginia.
- \*Cella, E.L. 2015. *Understanding residents' knowledge of, attitudes toward, and participation in sea turtle conservation in Tortuguero, Costa Rica and near the Archie Carr National Wildlife Refuge, Florida, USA*. Doctoral thesis. George Mason University, Virginia.
- #O'Bryhim, J.R. 2015. *The shark trade in Costa Rica: genetic, mercury contamination and human dimensions and the implications for conservation*. Doctoral thesis. George Mason University, Virginia.
- #Fazio, J. 2016. *Assessment of current captive management of the fishing cat (Prionailurus viverrinus)*. Doctoral thesis. George Mason University, Virginia.
- Kohanowich, K.M. 2016. *From Cousteau to Cameron: testing a quadrant model for undersea marine research infrastructure management*. Doctoral thesis. George Mason University, Virginia.
- #Shah, A. 2016. *An evaluation of social goals in Philippine marine protected areas*. Doctoral thesis. George Mason University, Virginia.
- Tracy, S. 2017. *Inclusion of environmental education into public school curricula*. Doctoral thesis. George Mason University, Virginia.
- #Roland, A. 2017. *Impacts of ambient noise on minke whale (Balaenoptera acutorostrata) habitat use and behaviour*. Doctoral thesis. George Mason University, Virginia.
- Razafinjatovo, P. 2018. *Establishing Marine Spatial Planning in Madagascar, drawing lessons from experience in the US and Europe*. Doctoral thesis. George Mason University, Virginia.
- Gleason, C. 2018. *A socio-economic and management evaluation of whale-watching in Samaná, Dominican Republic*. Doctoral thesis. George Mason University, Virginia.
- \*Marshall McLean, K.A. 2018. *US fishery disasters: trends, causes, and impacts of Pacific salmon declines on Native American communities*. Doctoral thesis. George Mason University, Virginia.

**Masters/ PhD Student Advisory Committee Member - Completed:**

## Exhibit A: Curriculum Vitae

- Lewandowski, J.K. 2005. *Assessing public input on further regulatory measures by the National Marine Fisheries Service to address harassment of wild marine mammals from interactive viewing activities.* Masters thesis. George Mason University, Fairfax, Virginia. 124pp.
  - Draheim, M. 2007. *Who's afraid of the big bad coyote? A survey of messaging and existing attitudes in the National Capital Region.* Masters thesis. George Mason University, Virginia.
  - Alcorn, J. 2008. *U.S. environmental security: understanding and enabling it to matter.* Masters thesis. George Mason University, Virginia.
  - Morabito, P. 2009. *A survey of stereotypic behavior in captive North American river otters (Lontra canadensis).* Masters thesis. George Mason University, Virginia.
  - Crane, J.A. 2010. *Keiko: a case study of releasing a killer whale from captivity.* Masters project. George Mason University, Virginia.
  - Gleason, C. 2010. *The nature of whalewatching and whalewatchers in the Dominican Republic.* Masters thesis. Antioch University, New England.
  - Zirbel, K. 2010. *Navy sonar, cetaceans and the Supreme Court: Fairfax County public attitudes and potential ramifications.* Masters thesis. George Mason University, Virginia.
  - Perez, N. 2012. *A qualitative evaluation tool for elementary student attitudes during an overnight environmental education experience.* Masters thesis. George Mason University, Virginia.
  - Busch, K. 2013. *An investigation into the effects of the National Wildlife Federation's certified wildlife habitat program on mammalian species richness in urbanized residential properties.* Masters thesis. George Mason University, Virginia.
  - Bair, R. 2013. *Relating environmental literacy to standards of learning biology and earth science: a case study from Prince William County, Virginia.* Masters thesis. George Mason University, Virginia.
  - Hansen, A. 2013. *Early life history, habitat use, and microsatellite allele frequency of two common reef fishes (Stegastes partitus and Thalassoma bifasciatum) in marine protected areas of the Northwestern Gulf of Mexico.* Masters thesis. George Mason University, Virginia.
  - Peredo, C. 2015. *A statistical analysis of marine mammal dispersal routes across major ocean regions using beta diversity at the generic level.* Masters thesis. George Mason University, Virginia.
  - Holstein, B. 2015. *Analyzing photovoltaic potential using a Geographic Information System: a case study of Prince William County public schools.* Masters thesis. George Mason University, Virginia.
  - Butt, M. 2016. *An additional approach to blue carbon conservation.* Masters thesis. George Mason University, Virginia.
  - Petruny, L. 2016. *Biostratigraphic and stable isotope study of selected foraminifera from the Turonian Lindi formation, southeastern Tanzania (Tanzanian drilling project site 34 drill core).* Masters thesis. George Mason University, Virginia.
  - Villari, J.R. 2016. *Three-dimensional cranial morphology of odontocetes: creating a morphological dataset.* Masters Project. George Mason University, Virginia.
  - Beichler, A. 2017. *Survey of Northern Virginia residents on their awareness, knowledge and attitude toward black bears.* Masters thesis. George Mason University, Virginia.
  - Metcalf, C. 2018. *A sustainable guide to surviving the zombie apocalypse.* Masters thesis. George Mason University, Virginia.
- 
- Bordelais, J.-P. 2007. *A comparative study of environmental policy development in the Caribbean: Barbados, the Dominican Republic and Guadeloupe.* Doctoral thesis. George Mason University, Virginia. 160pp.
  - Hawkins, M. 2009. *An assessment of awareness of fish consumption advisories concerning mercury among women of childbearing age.* Doctoral thesis. George Mason University, Virginia.
  - Mickelberg, J.L. 2011. *Understanding and managing isolation in a fragmented population of golden lion tamarins, Leontopithecus rosalia.* Doctoral thesis. George Mason University, Virginia.
  - Smith, A.K. 2011. *A mid-Atlantic stream suitability index for brook trout (Salvelinus fontinalis).* Doctoral thesis. George Mason University, Virginia.

**Exhibit A: Curriculum Vitae**

- #Dutta, T. 2012. *Patterns of genetic structure and gene flow of leopards (Panthera pardus) in Central India*. Doctoral thesis. George Mason University, Virginia.
- Draheim, M.M. 2012. *Social conflict and human-coyote interactions in suburban Denver*. Doctoral thesis. George Mason University, Virginia.
- Davis, H.A. 2013. *The biological and economic benefits of shade coffee plantations in the Blue Mountain, Jamaica W.I*. Doctoral thesis. George Mason University, Virginia.
- Sevin, J. 2014. *Factors effecting the distribution of the endangered Shenandoah salamander (Plethodon shenandoah)*. Doctoral thesis. George Mason University, Virginia.
- Schwartz, K. 2014. *Development of the zoological information management system: linking in situ and ex situ conservation efforts*. Doctoral thesis. George Mason University, Virginia.
- Lewandowski, J.K. 2015. *Transforming conflict into effective action: a case study on the effects of anthropogenic sound on marine mammals*. Doctoral thesis. George Mason University, Virginia.
- \*Patterson, K.W. 2015. *The microbial and molecular ecology of tissue-loss diseases affecting Acropora cervicornis in the Florida Keys National Marine Sanctuary*. Doctoral thesis. George Mason University, Virginia.
- Prado-Oveado, N. 2015. *Hyperprolactinemia and ovarian acclivity in captive female African elephants (Loxodonta africana)*. Doctoral thesis. George Mason University, Virginia.
- Orr, J.M. 2016. *The eastern box turtle, Terrapene carolina carolina; population ecology, growth, relocation, and soil pH of resting forms*. Doctoral thesis. George Mason University, Virginia.
- Muldrow, M. 2016. *Assessing reef experts' baselines and values regarding the Florida Keys coral reef ecosystem. Implications for historical ecological knowledge of the region*. Doctoral thesis. George Mason University, Virginia.
- Walsh-Thomas, J.M. 2016. *An evaluation of metaphors in climate change discourse*. Doctoral thesis. George Mason University, Virginia.
- \*Romano, E. 2017. *Caenorhabditis elegans as a model to determine the molecular effects of plausible environmental determinants of breast cancer*. Doctoral thesis. George Mason University, Virginia.

**Masters/ PhD Student Advisory Committee Director - Ongoing:**

- Samantha Oester. PhD project: Tentative – *Environmental awareness in Haiti*.
- Ashley Dunlap. MS project: Tentative – *The effectiveness of infographics as an education tool*.

**Masters/ PhD Student Advisory Committee Member - Ongoing:**

- MS: Lenore Pedicord, Merna Saad; PhD: Treda Grayson, Lisa Schreff, Krysten Moskey

**Undergraduate Research Projects**

- Arlot, S. 2001. *Promoting whale-watching tourism in Western Scotland. The role of ecotourism in setting up an accreditation scheme*. Diploma thesis. Périgueux and Napier Universities. 77pp.
- MacLeod, C.A. 2001. *What is the potential for a marine-based ecotourism facility in the Western Isles?* Honors thesis. University of the Highlands and Islands. 53pp.
- Moore, A. 2001. *Marine wildlife tourism on the Isle of Coll*. Honours thesis. Glasgow University. 62pp.
- Pettigrew, R. 2001. *Tourism – a sustainable Industry? Exploring the opportunities and threats to rural communities – The Isle of Mull*. Honours thesis. Edinburgh University. 69pp.
- Arlot, S. 2002. *Perceived attitudes to visitor management in the Treshnish Isles and the Firth of Lorn SAC*. Honours thesis. Napier University. 121pp.
- Rawles, C. 2003. *Is an environmental consciousness central to modern day ecotourism, with particular reference to whale watching tours operating out of Tobermory on the Isle of Mull, Scotland*. Undergraduate thesis. University of Reading. 36pp.



**Exhibit A: Curriculum Vitae**

- Sitar-Gonzales, A. 2009. The awareness of, and attitudes towards, global warming and climate flagship species. George Mason University.  
Published as: *Sitar-Gonzales, A. and Parsons, E.C.M. 2009. The perceived conservation status of polar bears and penguins. Human Dimensions of Wildlife 17: 225-227.*
- #Via, W. 2012. Atlantic Bluefin tuna: how mankind is eating the species off the planet. Undergraduate research thesis. George Mason University, Virginia. (*Winner of Robert T Hawkes Award for Outstanding Project*).

**AWARDS & SERVICE****AWARDS & FELLOWSHIPS**

- Awards:** Young Achiever in Scotland [1999]  
Scottish Thistle Award [2000]  
Outstanding BIS Faculty Member [2012]  
Teacher of Distinction [2018]
- Student Scholarships:** Wang Guangwu (Vice-Chancellor's) Scholarship [1995 & 1996]  
Jardine Matheson Scholarship [1995]  
Fox Prize [1988]
- Fellowships:** Elected a Fellow of the Marine Biological Association [2014]  
Elected a Fellow of the Royal Society of Biology [2012]  
Honorary Research Fellow of the Department of Zoology,  
University of Aberdeen [2002]; University of Glasgow [2015-]  
Elected a Fellow of the Royal Geographic Society [1997]
- Recognitions:** Entered into *Who's Who in Science and Technology* [2000]  
Entered into *Who's Who in the World* [2003]  
Entered into *Who's Who in America* [2006]  
Entered into *Who's Who of Emerging Leaders* [2007]  
**George Mason University**  
Teacher of Distinction [2018]  
Teacher who's made a difference [2016, 2017]
- Nominations:** **George Mason University**  
US Professor of the Year Award [2011] (<http://www.usprofessorsoftheyear.org/>)  
David King Faculty Teaching Award [2010]  
Advisor of the Year [2006, 2011, 2015, 2017]  
Teaching Excellence Award [2007, 2014, 2015, 2016, 2017]  
SHEV Outstanding Faculty Award [2017]  
John Toups Medal for Excellence in Teaching [2017]
- Other:** *Ocean 180 Video Challenge* finalist 2018 (w/ Chelsea Gray)  
(<http://ocean180.org/2018-finals/2018-challenge.html>)  
1<sup>st</sup> place - *National Center for Science & Civic Engagement* Fieldwork Photo Contest 2017

**COMMITTEE & BOARD MEMBERSHIPS**

**Exhibit A: Curriculum Vitae**

***International Organisations***

- Scientific Committee of the International Whaling Commission [99-]
  - IWC Sub-Committees - *Environmental Concerns Sub-committee* [99-]
  - *Small Cetaceans Sub-committee* [99-]
  - *Whale-watching Sub-committee* [99-]
  - *By-catch and Mortality Sub-committee* [01-]
  - *Whale Sanctuary Review Working Group* [02-03,18]
- Co-Chair of IWC Environmental Concerns Standing Working Group* [13-16]
- Chair of IWC Scientific Committee/Conservation Committee Effectiveness Working Group* [17]
- Chair of IWC Sanctuaries Working Group* [18]
- UK Delegate to the IWC Scientific Committee* [03-13]
- Conservation Committee of the International Whaling Commission [08-10]
  - UK Delegate to the IWC Conservation Committee* [08-09]
- IUCN Commission on Ecosystem Management [09-]

***Professional Societies***

- Society for Marine Mammalogy
  - *Board* [16-]
  - *Membership Chair* [16-]
  - *Awards Committee* [10-16]
  - *Membership Committee* [14-]
  - *Social media committee* [16-]
- American Cetacean Society
  - *Board of Directors* [15-17]
  - *Executive Committee* [16-17]
- Society for Conservation Biology
  - *Conservation Chair* [15-17]
  - *Board of Governors* [09-16]
  - *Conference Chair* [13-15]
  - *Policy Committee* [07-15]
  - *Conference Committee* [13-]
  - *Chapters Committee* [15-]
- Society for Conservation Biology - Marine Section
  - *President* [09-11,11-13]
  - *Board of Directors* [06-16]
  - *Policy Chair* [07-09]
  - *Policy Committee* [07-18]
  - *Student Matters Chair* [06-07]
- Society for Conservation Biology – Conservation Marketing & Outreach Working Group
  - *Co-Founder*
  - *Board of Directors* [15-18]
  - *Treasurer* [15-17]
  - *Conference Chair* [17-18]
  - *Review Board* [08-]
- David H. Smith Fellowship

***Conferences & Events***

- 1<sup>st</sup> International Conservation Marketing & Engagement Congress – Chair* [17-18]
- 5<sup>th</sup> International Marine Conservation Congress - Publication Committee (Chair)* [16-18]
  - *Organizing Committee* [16-18]
  - *Sponsorship Committee* [16-18]
- 4<sup>th</sup> International Marine Conservation Congress - Scientific Program Committee* [15-16]
  - *Fundraising Committee* [15-16]
  - *Publication Committee (Chair)* [15-16]

**Exhibit A: Curriculum Vitae**

- 27<sup>th</sup> *International Congress for Conservation Biology*
  - *Oceans Online Org. Committee* [15-16]
  - *Executive Committee* [14-15]
  - *Organising Committee* [14-15]
  - *Scientific Committee* [14-15]
- 3<sup>rd</sup> *International Marine Conservation Congress*
  - *Chair* [11-14]
- Workshop co-Convenor (w/ J. Cigliano & D. Johns) – *Mapping priority areas for marine conservation*. 25-26 June 2018, Kuching, Malaysia.
- Workshop Convenor (w/ K Waters) – *Talking the talk: giving effective and engaging presentations to diverse audiences*. 22 June 2018, Kuching, Malaysia.
- Workshop Convenor – *Talking the talk: giving effective and engaging presentations*. 13 October 2017, American Museum of Natural History, New York, USA.
- Workshop Convenor – *Talking the talk: giving effective and engaging presentations*. 22 October 2016, American Museum of Natural History, New York, USA.
- Workshop Convenor – *Yes, but is it conservation? How do you measure if marine conservation has been a success?* 3<sup>rd</sup> August 2016, St John's, Newfoundland.
- Workshop Convenor – *Research questions critical to the advancement of marine conservation*. 2<sup>nd</sup> August 2016, St John's, Newfoundland.
- Workshop Convenor – *Evaluating and monitoring the marine bushmeat crisis: integrating social science*. 1<sup>st</sup> August 2016, St John's, Newfoundland.
- Symposium co-Convenor – *Human dimensions of conservation in the Caribbean: lessons for marine and coastal work in small island states and other underserved regions*. 31<sup>st</sup> July 2016, St John's, Newfoundland.
- Workshop co-Convenor – *The verdict on marine megafauna tourism is in: where do we go from here?* 12<sup>th</sup> August 2014, Glasgow, Scotland.
- Workshop co-Convenor – *Integrating marine mammal conservation: human dimensions and the practitioner*, 14<sup>th</sup> August 2014, Glasgow, Scotland.
- Workshop co-Convenor – *Marine Animals in conservation: ethics and welfare?* 17<sup>th</sup> August 2014, Glasgow, Scotland in 3<sup>rd</sup> *International Marine Conservation Congress*, 14-18 August, Glasgow, Scotland.
- Symposium co-Convenor – *Human-wildlife conflict: complexity in the marine environment*, 16<sup>th</sup> August 2014 in 3<sup>rd</sup> *International Marine Conservation Congress*, 14-18 August, Glasgow, Scotland.
- Workshop Convenor – *Top twenty research questions of global importance for cetacean conservation*, 7 December 2013, Dunedin, New Zealand. [13]
- Workshop co-Convenor – *Integrating marine mammal conservation: human dimensions and the practitioner*, 8 December 2013, Dunedin, New Zealand. [13]
- Workshop co-Convenor – *Cognition and self-awareness in cetaceans: a review of ethical implications for conservation laws*, 8 December 2013, Dunedin, New Zealand. [13]
- Workshop Convenor – *Conservation: "You keep using that word, I do not think it means what you think it means"*, 12 October 2013, Miami. [13]
- 26<sup>th</sup> *International Congress for Conservation Biology*
  - *Vice-Chair* [11-13]
  - *Program Chair* [11-13]
- 2<sup>nd</sup> *International Marine Conservation Congress*
  - *Program co-Chair* [09-11]
  - *Steering Committee* [09-11]
- Workshop co-Convenor - *Lost in Translation - the Science-Policy Intersect*, 11 October 2009, Quebec City, Canada. [09]
- 1<sup>st</sup> *International Marine Conservation Congress* – *Local Secretariat (Director)* [07-09]
  - *Sustainability Committee (chair)* [07-09]
  - *Venue Committee* [07]
- Academic Review Committee - 6<sup>th</sup> *International Congress on Coastal and Marine Tourism*,

**Exhibit A: Curriculum Vitae**

23-26 June 2009, Port Elizabeth, South Africa [08-09]  
Scientific Program Committee – *Society for Conservation Biology 22<sup>nd</sup> Annual Meeting*, 13-17 July 2008, Chattanooga, Tennessee [07-08]  
Steering Committee – 2<sup>nd</sup> *IWC Workshop on Cetaceans and Climate Change*, 21-25 February 2009, Siena, Italy [07-08]  
Steering Committee - *IWC Large-Scale Whalewatching Research Initiative Workshop*, 30 March – 4 April 2008, Banbury, Western Australia [07-08]  
Review Panel - 5<sup>th</sup> *International Congress on Coastal and Marine Tourism*, 11-14 Sept. 2007, Auckland, New Zealand [07]  
Intel Science Challenge - *Judge* [14-16]  
Broadcom MASTERS research award - *Judge* [17-]  
Virginia Science Fair - *Student Award Judge (Zoology)* [07-09]  
National Ocean Science Bowl - *Über Judge* [12]  
Chesapeake Bay Bowl - *Über Judge* [06-13, 15-16]  
Student Award Judge – *International Congress for Conservation Biology* [07, 10]  
Student Award Judge – *Biennial Conference on the Biology of Marine Mammals* [03-].  
Award Judge & Co-Founder - Leatherwood (Asian Conservation) Award – *Biennial Conference on the Biology of Marine Mammals* [05-15].  
Conservation award judge – *Biennial Conference on the Biology of Marine Mammals* [17].  
Steering Committee – 4<sup>th</sup> *International Congress on Coastal and Marine Tourism*, 15-18 Nov. 2006, Turkey [06]  
Steering Committee - *IWC Habitat Degradation Workshop*, 12 – 15 Nov. 2005, Siena, Italy [03-04]  
Scientific Advisory Committee - *IWC Whale-watching Management Workshop*, 6-9 March 2004, Cape Town, S. Africa – [03-04]

***Editorial Positions***

Frontiers in Marine Science – *Associate Editor* [14-]  
Journal of Environmental Studies and Sciences – *Managing Editor* [18-]  
– *Associate Editor* [10-]  
Tourism in Marine Environments - *Editorial Board* [05-].  
Conservation Biology – *Handing Editor* [13-14]  
Ocean and Coastal Management – *Guest Editor* (special issue on the International Marine Conservation Congress)  
Marine Pollution Bulletin – *Guest Editor* (special issue on sonar mitigation)  
Bulletin of Marine Science – *Guest Editor* (special issue “*Making marine science matter*”)  
Journal of Marine Biology – *Guest Editor* (special issue on whale and dolphin conservation)  
European Research on Cetaceans - *Editor* [97-99]; *Asst. Editor* [95-96]

***Scientific Advisory***

Proyecto Amigos de los Delfines – *Scientific Advisor* [03-]  
Eastern Taiwan Strait Sousa Technical Advisory Working Group – *Vice Chair* [07-17]

***University Committees & Organisations***

College of Science *Curriculum Committee* [09-18]: *Chair* [11-12; 15-18]; *Co-chair* [13-15]; *Deputy Chair* [12-13]  
Environmental Science & Policy - *Ad hoc By-laws Committee* [16-17]  
Environmental Science & Policy – *Academic Assessment Committee* [15-17]

**Exhibit A: Curriculum Vitae**

Environmental Science & Policy - *Graduate Executive Committee* [09-]  
 Environmental Science & Policy - *Curriculum Committee* [07-13]  
 Mason Center for Conservation Studies - *Deputy Director* [08-12]  
 Mason Center for Conservation Studies - *Academics Committee* [08-12]  
 Mason Center for Conservation Studies - *Curriculum Committee* [08-12]  
*Inter-Colleageate Curriculum Committee* [11-12]  
 Environmental Science & Policy Graduate Student Association - *Faculty Advisor* [06-18]  
 George Mason University Environmental Awareness Group - *Faculty Advisor* [07-12]  
 Faculty search committees: conservation biology (x2 positions); environmental policy; aquatic ecology (chair); undergraduate coordinator (chair)

**United Kingdom**

NADAIR (Nature And Development in the Argyll Islands Region) Trust - *Director* [01-03]  
 Scottish Environment Link - *Marine Task Force* [00-03]  
 Hebridean Marine National Park Partnership - *Council Member* [02-03]  
 Tourism and the Environment Forum - *Steering Committee* [01-03]  
 UK Biodiversity Action Plan - *Cetaceans Steering Group* [00-02]  
 UK Biodiversity Action Plan - *Marine Turtles Steering Group* [00-02]  
 UK Biodiversity Action Plan - *Basking Sharks - Steering Group* [00-01]  
 Scottish Environment Link - *Tourism Task Force* [02]  
 Argyll & Bute Regional Environmental Education Forum - *Steering Group* [00-02]  
 Highland Region Bio-Diversity Action Plan - *Steering Group* [99-01]  
 Argyll Bio-Diversity Action Plan - *Marine Technical Group* [99-02]  
 Mull & Iona Ranger Service - *Management Committee* [99-02]  
 Marine Animal Rescue Coalition - *Committee Member* [99-02]  
 Royal Navy/Environmental NGO Liaison Committee - *Initiator & Committee Member* [99-02]  
 British Divers Marine Life Rescue - *Regional Co-ordinator* [98-02]  
 UK Cetacean Sighting Network - *Regional Co-ordinator* [98-02]  
 Mull & Iona Land & Sea Forum - *Steering Committee* [98-02]

**Hong Kong**

Royal Geographical Society (Hong Kong) - *Council* [95-97]  
 Hong Kong Marine Conservation Society - *Secretary* [94-96]  
 Hong Kong Dolphin Conservation Society - *Scientific Advisor* [04-]

**College**

World Wide Fund for Nature [Oxford University Group] - *Secretary* [92-93]  
 Oxford University Underwater Exploration Group - *Social Secretary* [90-91]  
 College Revue - *Producer* [90]  
 St Peters College - *Undergraduate Student Committee* [89-90]  
 St Peter's College - *College Social Secretary* [89-90]

**SCIENTIFIC MEMBERSHIPS**

Flora & Fauna International, Society for Marine Mammalogy, Marine Biological Association (HK&UK), The Society for Conservation Biology, The British Ecological Society, Institute of Biology, Scottish Association for Marine Science, Marine Biological Association of the United Kingdom, European Cetacean Society, Royal Geographical Society.

**Exhibit A: Curriculum Vitae****Scientific Peer Review**

Reviewer for the journals: *African Journal of Marine Science, Animals, Animal Behaviour, Animal Welfare, Annals of Marine Biology and Research, Anthozoos, Aquatic Conservation, Aquatic Mammals, Asian Marine Biology, Behavioral Ecology, Biodiversity and Conservation, Biological Conservation, Bulletin of Marine Science, Conservation Biology, Conservation Letters, Continental Shelf Research, Current Issues in Tourism, Diseases of Aquatic Organisms, Ecological Economics, Endangered Species Research, Environmental Communication, Environmental Management, Environmental Science & Policy, European Journal of Wildlife Research, European Research on Cetaceans, Frontiers in Marine Science, Frontiers in Psychology, Global Ecology and Conservation, Human Dimensions of Wildlife, ICES Journal of Marine Science, International Journal of Fisheries and Aquaculture, International Journal of Marine Biology, International Laboratory Animal Research Journal, Journal of Applied Animal Welfare Science, Journal of Cetacean Research and Management, Journal of Ecotourism, Journal of Environmental Management, Journal of Environmental Studies and Sciences, Journal of Marine Biology, Journal of the Marine Biological Association of the United Kingdom, Landscape Research, Latin American Journal of Aquatic Mammals, Mammalia, Mammal Review, Mammalian Species, Marine Ecology, Marine Ecology Progress Series, Marine Mammal Science, Marine Policy, Marine Pollution Bulletin, Nature, Ocean and Coastal Management, Pakistan Journal of Zoology, PeerJ, PLOS ONE, Raffles Bulletin of Zoology, Regional Studies in Marine Science, Remote Sensing of Environment, Society and Natural Resources, Science of the Total Environment, Sustainability, Tourism Geographies, Tourism in Marine Environments, Veterinary Record, Wildlife Biology in Practice, Wildlife Research.*

**Grant reviewing**

*Broadcom Masters Science Talent Search, Research Grants Council of Hong Kong; Office of Naval Research; Smith Fellowship Program; Intel Science Talent Search; Regeneron Science Talent Search; International Whaling Commission*

**OTHER RELEVANT QUALIFICATIONS**

- BDMLR Marine Mammal Medic
- BSAC Dive Leader
- Full Clean Driving Licence

**MEDIA APPEARANCES**

- Over 200 interviews for national and international newspapers and magazines.
- Over 50 TV and radio interviews, both national and international (Australia, Canada, China, Dominican Republic, Japan, Korea, UK and USA; BBC World Service, Voice of America and CNN).
- Presenter/Producer/Creator of the *Marine Conservation Happy Hour* podcast
- Presenter/Producer/Creator of the *Dugongs and Seadragons* podcast
- Frequent contributor to the *Speak Up for Blue* podcast
- Senior Correspondent for *Southern Fried Science* (#1 marine science blog globally)

## Exhibit A: Curriculum Vitae

## GRANTS &amp; CONTRACTS RECEIVED

Year	Amount	Project	Funding body
1993	HK\$ 2,000,000	Multi-disciplinary research into cetacean biology & ecology in Hong Kong waters <sup>1</sup>	Agriculture and Fisheries Dept., Hong Kong Government.
1997	HK\$ 24,000	Investigation into the lesions and symptoms caused by the disease meliodosis in cetaceans	The Veterinary Department, Ocean Park, Hong Kong.
	HK\$ 10,000	Investigation into the impacts of sewage pollution upon cetaceans in Hong Kong	Friends of the Earth, Hong Kong.
	HK\$ 10,000	A review of threats facing cetaceans in Hong Kong and management recommendations for a conservation strategy	Worldwide Fund for Nature, Hong Kong.
1998	HK\$ 20,000	A review of the possible impacts of marine construction-related noise pollution on cetaceans in Hong Kong	Ecosystems Ltd., Hong Kong
	£ 8,000	Study upon the ecology of the minke whale in Argyll waters	Worldwide Fund for Nature, UK.
	£ 17,000	Marine education and interpretation programme for the Argyll region <sup>2</sup>	Scottish Natural Heritage, Argyll & Bute Council, LEADER, Argyll and the Islands Enterprise
	£ 500	Production of an educational website and factsheets on cetacean biology	Sylvia Aitken Trust
	US\$ 10,000	Study into the distribution and ecology of harbour porpoises in West Scottish waters <sup>3</sup>	Prince Bernhard Fund for Nature, the Netherlands
1999	US\$ 7,000	Study into the impacts of inshore gillnetting upon harbour porpoises in West Scotland <sup>3</sup>	Prince Bernhard Fund for Nature, the Netherlands
	£ 25,500	Marine education and interpretation programme for the Argyll region	Scottish Natural Heritage, Jerwood Fnd., Pantone & McCorquodale Trusts
	£ 756	Travel grant to attend the Scientific Committee at the 52 <sup>nd</sup> International Whaling Commission Meeting	Whale & Dolphin Conservation Society & Environmental Investigation Agency
	£ 900	Review into the biology and conservation of Scottish marine mammals	Mammal Society, Scottish Assoc. of Marine Science
2000	£ 10,500	Marine education and interpretation programme for the Argyll region	Scottish Natural Heritage, J & R Wilson Trust
	£ 60,000	A photo-identification research programme for bottlenose dolphins in West Scotland <sup>2</sup>	Worldwide Fund for Nature, UK.
	£ 17,000	Investigation into the economic impacts of whale-watching and marine ecotourism on rural communities in West Scotland <sup>4</sup>	Department of the Environment, Transport and Regions, UK Govnt.
	£ 36,000	Heritage Tourism Development Officer for the Islands of Mull & Iona <sup>5</sup>	Heritage Lottery Fund
	£ 54,000	Marine life sightings and awareness project	Heritage Lottery Fund, Scottish Natural Heritage and Argyll & the Islands Enterprise
	£ 208,140	Marine education and interpretation programme for the Argyll region	Natural Heritage and Argyll & the Islands Enterprise
	£ 494,239	Cetacean science vessel and marine life interpretation project <sup>6</sup>	Natural Heritage and Argyll & the Islands Enterprise
2001	£ 175	Travel grant to attend the Scientific Committee at the 53 <sup>rd</sup> International Whaling Commission Meeting	Whale and Dolphin Conservation Society
2002	£ 1,650	Review of the potential impacts of boat traffic on cetaceans in Hong Kong	Agriculture and Fisheries Dept., Hong Kong Government.
	£ 500	Literature review of the impacts of boat noise on cetaceans	Whale and Dolphin Conservation Society

## Exhibit A: Curriculum Vitae

	£ 370	Travel grant to attend the Scientific Committee at the 54 <sup>th</sup> International Whaling Commission Meeting	Whale and Dolphin Conservation Society
2003	£ 12,000	The distribution and ecology of basking sharks <sup>7</sup>	Esmee Fairbairns Foundation
	US\$ 1,760	Production of marine education and interpretation projects	Hebridean Whale & Dolphin Trust
	US\$ 360	Report on environmental research prioritisation in the IWC scientific committee	Whale & Dolphin Conservation Society
	US\$ 600	Travel grant to attend the 3 <sup>rd</sup> Icelandic Whale-watching conference	Whale & Dolphin Conservation Society
	US\$ 750	Development of instructions for a cetacean sighting data recording system	Whale & Dolphin Conservation Society
	US\$ 1,400	Grant to support the writing of a book chapter on whale biology & behaviour	World Society for the Protection of Animals
	US\$ 4,470	Reviewing cetacean occurrence and habitat use in the Western Pacific Ocean	Natural Resources Defense Council
2004	US\$ 1,875	The potential economic impact of low frequency sonar on cetacean tourism	Natural Resources Defense Council
	US\$ 1,480	Travel grant to attend the IFAW Forum on Wildlife Conservation, Limerick	Humane Society of the United States
	US\$ 3,700	Equipment grants for surveys on bottlenose dolphins in the Dominican Republic <sup>8</sup>	Cetacean Society International, Whale & Dolphin Conservation Society
	US\$ 1,460	Travel grant to attend the Marine Mammal Commission workshop on noise and cetaceans, London	Marine Mammal Commission
	US\$ 3,600	Contract to draft a report on cetaceans in captive facilities	World Society for the Protection of Animals
	US\$ 837	Travel grant to attend the IWC International Workshop on Habitat Degradation, Siena	International Whaling Commission
	2005	US\$ 15,000	Grant to support bottlenose dolphin photo-ID study in the Dominican Republic
US\$ 450		Travel grant to attend the 5 <sup>th</sup> Congress on the Biodiversity of the Caribbean	The Nature Conservancy
US\$ 3,345		Contract to write review on UK cetacean conservation	Whale and Dolphin Conservation Society
US\$ 460		Contract to write strategy document on researching cetacean health and whaling issues	Whale and Dolphin Conservation Society
US\$ 2,245		Travel grant to attend the Scientific Committee at the 57 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
US\$ 600		Contract to write fact sheets on sustainable cetacean tourism	World Society for the Protection of Animals
2006	US\$ 19,000	Grant to support bottlenose dolphin research in the Dominican Republic	Humane Society International, World Society for the Protection of Animals
	US\$ 105,000	Grant for dolphin ecotourism research and monitoring in the Dominican Republic <sup>9</sup>	International Development Bank
	US\$ 600	Travel grant to attend the Scientific Committee at the 58 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$ 5,700	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$ 25,000	Grant for dolphin ecotourism research and monitoring in the Dominican Republic <sup>11</sup>	White Water to Blue Water Initiative, National Marine Sanctuary Foundation
	US\$ 1,020	Travel grant to visit the Dominican Republic	Fundemar
	US\$ 578	Grant to attend Marine Section Board meeting of the Society for Conservation Biology	Christiansen Foundation, via Society for Conservation Biology
2007	US\$ 2,493	Grant to teach marine mammal course in Pakistan	Darwin Foundation
	US\$ 8,000	Grant towards administering research project in Dominican Republic	Humane Society International
	US\$ 250	Small grant to collect questionnaires on ecotourism in the Dominican Republic <sup>12</sup>	Humane Society International



## Exhibit A: Curriculum Vitae

	US\$	434	Grant to attend Marine Section Board meeting of the Society for Conservation Biology	Christiansen Foundation, via Society for Conservation Biology
	US\$	2,500	Travel grant to attend the Scientific Committee at the 59 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$	5,700	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$	860	Expenses for expert testimony related to whales and sonar impacts	Natural Resources Defense Council
	US\$	375	Contract to write brief on impacts of sonar on whales in Hawaii	Earthjustice
	US\$	3,000	Grant to support dolphin research in Panama <sup>13</sup>	World Society for the Protection of Animals
	US\$	1,000	Grant to support dolphin research in Belize <sup>14</sup>	Whale and Dolphin Conservation Society
	US\$	1,000	Contract to draft a report on cetaceans in captive facilities	World Society for the Protection of Animals
	US\$	750	Grant to support captive dolphin research analysis	Humane Society International
	US\$	350	Grant to purchase equipment for Belize dolphin research	Humane Society International
	US\$	275	Grant to purchase equipment for Aruba dolphin research	Humane Society International
	US\$	700	Travel grant for Aruba dolphin research	Humane Society International
	US\$	750	Travel grant for Bahamas shark conservation research	Humane Society International
	US\$	1,100	Travel grant for Dominican Republic dolphin research presentation at the European Cetacean Society conference	Humane Society International
	US\$	500	Grant to purchase equipment for Panama dolphin research	Humane Society International
	US\$	2,000	Grant for bottlenose dolphin surveys in Panama	Humane Society International
	US\$	5,000	Scholarship to support graduate student research on the Keiko/Free Willy killer whale rehabilitation project	Humane Society International
2008	US\$	2,800	Travel grant to attend the Scientific Committee at the 60 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$	4,950	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
2009	US\$	280,000	International Marine Conservation Congress <sup>15</sup>	Packard Foundation, Moore Foundation, Rufford Charitable Trust, World Bank, NOAA, IUCN, Nature Conservancy, National Park Service, Smithsonian Institution, Government of Canada, Humane Society International
	US\$	1,915	Travel grant to attend the Scientific Committee at the 61 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$	4,950	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
2010	US\$	3,300	Travel grant to attend the Scientific Committee at the 62 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$	4,950	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$	194,000	2 <sup>nd</sup> International Marine Conservation Congress <sup>15</sup>	Moore Foundation, Marisla Foundation, Rufford Charitable Trust, SSHRC, MARE, Google, University of Victoria, George Mason University, Humane Society International, Simon Fraser University
2011	US\$	1,000	Grant to support swim-with-whale tourism survey <sup>16</sup>	Pacific Whale Foundation
	US\$	2,000	Travel grant to attend the Scientific Committee at the 63 <sup>rd</sup> International Whaling Commission Meeting	Humane Society International
	US\$	4,950	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
2012	US\$	4,100	Grant to produce the annual State of the Cetacean	International Whaling Commission

## Exhibit A: Curriculum Vitae

		<b>Environment Report for the IWC Scientific Committee<sup>10</sup></b>	
	US\$ 2,000	Travel grant to attend the Scientific Committee at the 64 <sup>th</sup> International Whaling Commission Meeting	Humane Society International
	US\$ 20,000	Grant for focus group/expert panel for "71 important questions for the conservation of marine biodiversity" study	Society for Conservation Biology Marine Section
	US\$ 103,000	Grants to support the 4 <sup>th</sup> International Marine Conservation Congress	Events Queensland, Brisbane Convention Center
2013	US\$ 2,735	Travel grant to attend the Scientific Committee at the 65 <sup>th</sup> International Whaling Commission Meeting	International Whaling Commission, Humane Society International
	US\$ 89,750	Grants to support the 26 <sup>th</sup> International Congress for Conservation Biology <sup>17</sup>	Rufford Foundation, Fish & Wildlife Service, NASA and others
	US\$ 20,000	Funding for (a) marine mammal cognition and ethics workshop and (b) focus group/expert panel for "Key research questions of global importance for cetacean conservation" study	Society for Conservation Biology Marine Section
	US\$ 3,000	Grant to analyse captive orca mortality rates. <sup>14</sup>	Animal Welfare Institute
	US\$ 9,100	Grant to support research on the sustainability of bottlenose dolphin tourism in Panama <sup>18</sup>	Humane Society International, Cetacean Society International, Pacific Whale Foundation
2014	US\$ 3,800	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$ 2,525	Travel grant to attend the Scientific Committee at the 65 <sup>th</sup> International Whaling Commission Meeting	International Whaling Commission, Animal Welfare Institute
	US\$ 50,700	Grants to support the 3 <sup>rd</sup> International Marine Conservation Congress <sup>20</sup>	Marisla Foundation, Rufford Foundation, Moore Foundation, University of Glasgow, NRDC, Animal Welfare Institute
2015	US\$ 3,800	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$ 2,530	Travel grant to attend the Scientific Committee at the 2015 International Whaling Commission Meeting	Animal Welfare Institute; International Whaling Commission
	US\$ 2,000	Travel grant to attend the 2015 Oxford Biodiversity Institute Symposium	George Mason University
	US\$ 250	Grant to support open access publication	George Mason University
	US\$ 2,900	Travel grant to attend the Scientific Committee at the 27 <sup>th</sup> International Whaling Commission Congress for Conservation Biology	Society for Conservation Biology
2016	US\$ 3,800	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission
	US\$ 2,000	Travel grant to attend 2016 Ocean Sciences meeting	George Mason University
	US\$ 31,000	Grants to support the 4 <sup>th</sup> International Marine Conservation Congress <sup>21</sup>	Marisla Foundation, NRDC, Animal Welfare Institute
	US\$ 3,000	Travel grant to attend the Scientific Committee at the 2016 International Whaling Commission Meeting	Animal Welfare Institute; International Whaling Commission
	US\$ 2,000	Travel grant to attend the 4 <sup>th</sup> International Marine Conservation Congress	George Mason University
	US\$ 1,140	Travel grant to attend Student Conference on Conservation Science New York to run education workshops/ recruitment	Society for Conservation Biology Marine Section; George Mason University
	US\$ 715	Travel grant to attend Society for Marine Mammalogy meeting	Society for Marine Mammalogy
	US\$ 2,500	Grant to support focus group on social science research needs and procedures to analyse the aquatic bushmeat trade	Society for Conservation Biology Marine Section
2017	US\$ 3,800	Grant to produce the annual State of the Cetacean Environment Report for the IWC Scientific Committee <sup>10</sup>	International Whaling Commission

## Exhibit A: Curriculum Vitae

	US\$ 3,000	Travel grant to attend the Scientific Committee at the 2017 International Whaling Commission Meeting	Animal Welfare Institute; International Whaling Commission
	US\$ 500	Travel grant to attend Student Conference on Conservation Science New York to run education workshops/ recruitment	George Mason University
	US\$ 1,750	Grants to support open access publication	George Mason University
	US\$ 6,350	Joint scientific/conservation committee strategic planning meeting on whalewatching	International Whaling Commission
2018	US\$ 2,150	Sponsorship to attend Symposium on dolphins in captivity held at Chamber of Deputies, Mexico City <sup>16</sup>	Animal Heroes
	US\$ 3,000	Travel grant to attend the Scientific Committee at the 2018 International Whaling Commission Meeting	Animal Welfare Institute; International Whaling Commission
	US\$ 2,500	Contract to provide information on marine mammals and sea turtles in the Gulf of Mexico for policy documents	Oceana
	US\$ 30,050	Evaluating the sustainability of Sri Lanka's whale-watching industry <sup>21</sup>	National Geographic
	US\$ 1,700	Grant to support open access publication	George Mason University
	US\$ 24,000	Grant to produce the revised edition of The Case Against Marine Mammals in Captivity report	Animal Welfare Institute, World Animal Protection
	US\$ 550	Funding for travel to the ACS conference	American Cetacean Society
	US\$ 1,725	Funding/Sponsorship for Conservation Marketing & Engagement meeting <sup>22</sup>	Wiley, Harris Teeter, Safeway
	US\$ 2,400	Evaluating impacts of low frequency sonar upon whales	Natural Resources Defence Council
	US\$ 31,000	Conservation Marketing & Engagement meeting <sup>23</sup>	Various

**Total Funds raised: US\$ 2,656,363**

**In addition: 14 MS assistantships; 12 PhD assistantships  
\$211,350 in other Graduate student fellowships  
\$132,109 via Graduate student research funds**

## Notes:

<sup>1</sup> Grant application co-authored with B. Morton<sup>3</sup> Grant application co-authored with R. Swift<sup>5</sup> Grant application co-authored with J. Hilder<sup>7</sup> Grant application co-authored with D. Sims<sup>9</sup> Grant application co-authored with I. Bonnelly di Calventi & R. Sellares<sup>11</sup> Grant application co-authored with J. Felt & I. Bonnelly di Calventi<sup>13</sup> Project in conjunction with J. Luksenburg<sup>15</sup> Project in conjunction with SCB Marine Section Board<sup>17</sup> Project in conjunction with A. Hummer & J. Cigliano<sup>19</sup> Project in conjunction with A. Lombard<sup>21</sup> Project in conjunction with S. Oester, B. Favaro, E. Hind<sup>23</sup> Project in conjunction with A. Sitar<sup>2</sup> Grant application co-authored with C. Fleming<sup>4</sup> Grant application co-authored with C. Warburton<sup>6</sup> Grant application co-authored with C. Fleming & A. Gill<sup>8</sup> Grant application co-authored with A. Whaley & T. McConchie<sup>10</sup> Grant shared with M. Stochowitsch & N.A. Rose<sup>12</sup> Project in conjunction with M. Draheim<sup>14</sup> Project in conjunction with K. Patterson<sup>16</sup> Project in conjunction with N. Rose<sup>18</sup> Project in conjunction with A. Sitar<sup>20</sup> Project in conjunction with J. Cigliano, S. Oester, N. Welden<sup>22</sup> Grant application co-authored with A. DeVos & A. Sitar<sup>24</sup> Project in conjunction with A. Sitar, A. Wright, B. Tully and C. Gray.

## REFERENCES

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**Exhibit A: Curriculum Vitae**

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**Exhibit B: List of Materials Considered**

Published Articles and Scientific Studies

DeMaster, D.P. & Drevenak, J.K. (1988). *Survivorship Patterns in Three Species of Captive Cetaceans*, Marine Mammal Science, 4(4).

Ford, J.K.B. (2009). *Killer whale: Orcinus orca*. In W.F. Perrin et al. (eds.), *Encyclopedia of Marine Mammals*, 2nd edition (San Diego, California: Academic Press).

Jett, J. & Ventre, J. (2015). *Captive killer whale (Orcinus orca) survival*, Marine Mammal Science.

Matkin, G.O. et al. (2014). *Life history and population dynamics of southern Alaska resident killer whales (Orcinus orca)*, Marine Mammal Science, 30(2).

Olesiuk, P.F. et al. (1990). *Life History and Population Dynamics of Resident Killer Whales (Orcinus orca) in the Coastal Waters of British Columbia and Washington State*, Rep. Int. Whal. Commn.

Olesiuk, P.F. et al. (2005). *Life History and Population Dynamics of Northern Resident Killer Whales (Orcinus orca) in British Columbia*, Canadian Science Advisory Secretariat.

Robeck, T.R. et al. (2015). *Comparisons of life-history parameters between free-ranging and captive killer whale (Orcinus orca) populations for application toward species management*, Journal of Mammology, 96(5).

Ross, P.S. et al. (2000). *High PCP Concentrations in Free-Ranging Pacific Killer Whales, Orcinus orca: Effects of Age, Sex and Dietary Preference*, Marine Pollution Bulletin (Vol. 40, No. 6).

Small, R.J. & DeMaster, D.P. (1995). *Survival of Five Species of Captive Marine Mammals*, Marine Mammal Science, 11(2).

Towers, J.R. et al. (2015). *Photo-identification Catalogue and Status of the Northern Resident Killer Whale Population in 2014*, Canadian Technical Report of Fisheries and Aquatic Sciences 3139.

Pleadings and Discovery Responses

Plaintiffs' Third Amended Class Action Complaint (Dkt. 94)  
SeaWorld's Objections and Responses to Plaintiffs' First Set of Requests for Admission  
SeaWorld's Second Supplemental Responses to Plaintiffs' Second Set of Interrogatories

**Exhibit B: List of Materials Considered**

Deposition Transcripts

Transcript of Deposition of Marc Anderson  
Transcript of Deposition of Peter Frey  
Transcript of Deposition of Scott Gass  
Transcript of Deposition of Fred Jacobs  
Transcript of Deposition of Kelly Nelson  
Transcript of Deposition of Todd Robeck

Documents Produced in Litigation

Dold Ex. 125 (SW-AND0250689)  
Frey Ex. 82 (42WEST\_0000063)  
Gass Ex. 70 (SW-AND0001960)  
Jacobs Ex. 220 (SW-AND0069094)  
Jacobs Ex. 222 (SW-AND0252817)  
Kermes Ex. 104 (COV\_PPG\_00303)  
Nelson Ex. 48 (NELSON\_000018)  
Robeck Ex. 94 (SW000515)  
Williams Ex. 280 (Push Digital 10088)  
SW-AND0104733

Websites

<https://www.cnn.com/2019/01/29/us/seaworld-orca-kayla-trnd/index.html>  
<https://seaworld.org/animals/all-about/killer-whale/>  
<https://seaworld.org/animals/all-about/killer-whale/longevity/>

**EXHIBIT C: SeaWorld Captive Orcas Life History Traits**

ORCA NAME (OR ID)	SEX	Wild-Caught (W) or Captive-Born (C)	DATE OF BIRTH	DATE OF DEATH	AGE AT DEATH	(If alive) AGE AS OF 2/8/2019
Kyara	F	C	4/19/2017	7/24/2017	0.26	n/a
Katerina	F	C	11/4/1998	5/5/1999	0.50	n/a
Victoria	F	C	8/3/2012	6/16/2013	0.87	n/a
Nyar	F	C	12/31/1993	4/1/1996	2.25	n/a
Kakela	Unknown	W	1/1/1977	9/3/1979	2.67	n/a
Halyn	F	C	10/9/2005	6/15/2008	2.68	n/a
Canuck	M	W	1/1/1971	12/1/1974	3.92	n/a
Kandu	F	W	1/1/1966	6/6/1971	5.43	n/a
Kandu 2	M	W	1/1/1969	6/1/1975	6.42	n/a
Kanuck 2	M	W	1/1/1975	8/2/1981	6.59	n/a
Shamu	F	W	1/1/1962	8/23/1971	9.64	n/a
Kona	F	W	1/1/1968	9/28/1977	9.74	n/a
Sandy	F	W	1/1/1967	10/22/1977	10.81	n/a
Frankie	M	W	1/1/1962	1/29/1974	12.08	n/a
Sumar	M	C	5/14/1998	9/7/2010	12.31	n/a
Kilroy	M	W	1/1/1966	9/23/1978	12.73	n/a
Kona 2	F	W	1/1/1975	10/15/1987	12.79	n/a
Taku	M	C	9/9/1993	10/17/2007	14.11	n/a
Samoa	F	W	1/1/1978	3/14/1992	14.20	n/a
Kahana	F	W	1/1/1977	5/14/1991	14.37	n/a
Kandu 3	F	W	1/1/1975	8/21/1989	14.64	n/a
Nootka 4	F	W	1/1/1980	9/13/1994	14.70	n/a
Kenau	F	W	1/1/1976	8/6/1991	15.60	n/a
Splash	M	C	8/15/1989	4/5/2005	15.64	n/a
Kotar	M	W	1/1/1977	4/1/1995	18.25	n/a
Unna	F	C	12/27/1996	12/21/2015	18.98	n/a
Ramu	M	W	1/1/1963	1/12/1982	19.03	n/a
Kanduke	M	W	1/1/1971	9/20/1990	19.72	n/a
Gudrun	F	W	1/1/1976	2/25/1996	20.15	n/a
Winston	M	W	1/1/1966	4/28/1986	20.33	n/a
Taima	F	C	7/11/1989	6/6/2010	20.90	n/a
Haida 2	F	W	1/1/1980	8/1/2001	21.58	n/a
Knootka	F	W	1/1/1968	3/13/1990	22.20	n/a
Bjossa	F	W	1/1/1978	10/8/2001	23.77	n/a
Kalina	F	C	9/26/1985	10/4/2010	25.02	n/a
Winnie	F	W	1/1/1975	4/11/2002	27.28	n/a
Orky 2	M	W	1/1/1961	9/26/1988	27.74	n/a
Kayla	F	C	11/26/1988	1/28/2019	30.17	n/a
Tilikum	M	W	1/1/1982	1/6/2017	35.01	n/a

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## EXHIBIT C: SeaWorld Captive Orcas Life History Traits

ORCA NAME (OR ID)	SEX	Wild-Caught (W) or Captive-Born (C)	DATE OF BIRTH	DATE OF DEATH	AGE AT DEATH	(If alive) AGE AS OF 2/8/2019
Kasatka	F	W	1/1/1976	8/15/2017	41.62	n/a
Amaya	F	C	12/2/2014	n/a	Alive	4.18
Kamea	F	C	12/6/2013	n/a	Alive	5.17
Makani	M	C	2/14/2013	n/a	Alive	5.98
Adan	M	C	10/12/2010	n/a	Alive	8.32
Makaio	M	C	10/9/2010	n/a	Alive	8.33
Sakari	F	C	1/7/2010	n/a	Alive	9.09
Morgan	F	W	1/1/2008	n/a	Alive	11.10
Malia	F	C	3/12/2007	n/a	Alive	11.91
Nalani	F	C	9/18/2006	n/a	Alive	12.39
Trua	M	C	11/23/2005	n/a	Alive	13.21
Kalia	F	C	12/21/2004	n/a	Alive	14.13
Skyla	F	C	2/9/2004	n/a	Alive	15.00
Ikaika	M	C	8/25/2002	n/a	Alive	16.45
Kohana	F	C	5/3/2002	n/a	Alive	16.76
Nakai	M	C	9/1/2001	n/a	Alive	17.44
Tekoa	M	C	11/8/2000	n/a	Alive	18.25
Tuar	M	C	6/22/1999	n/a	Alive	19.63
Keto	M	C	6/17/1995	n/a	Alive	23.64
Shouka	F	C	2/25/1993	n/a	Alive	25.95
Keet	M	C	2/2/1993	n/a	Alive	26.02
Kyuquot	M	C	12/24/1991	n/a	Alive	27.12
Takara	F	C	7/9/1991	n/a	Alive	27.58
Orkid	F	C	9/23/1988	n/a	Alive	30.38
Ulises	M	W	1/1/1978	n/a	Alive	41.10
Katina	F	W	1/1/1976	n/a	Alive	43.10
Corky 2	F	W	1/1/1967	n/a	Alive	52.10



**EXHIBIT D: SeaWorld Captive Orcas Average Life Span**

<b>ORCA NAME (OR ID)</b>	<b>SEX</b>	<b>Wild-Caught (W) or Captive- Born (C)</b>	<b>DATE OF BIRTH</b>	<b>DATE OF DEATH</b>	<b>AGE AT DEATH</b>
Victoria	F	C	8/3/2012	6/16/2013	0.87
Nyar	F	C	12/31/1993	4/1/1996	2.25
Halyn	F	C	10/9/2005	6/15/2008	2.68
Kandu	F	W	1/1/1966	6/6/1971	5.43
Shamu	F	W	1/1/1962	8/23/1971	9.64
Kona	F	W	1/1/1968	9/28/1977	9.74
Sandy	F	W	1/1/1967	10/22/1977	10.81
Kona 2	F	W	1/1/1975	10/15/1987	12.79
Samoa	F	W	1/1/1978	3/14/1992	14.20
Kahana	F	W	1/1/1977	5/14/1991	14.37
Kandu 3	F	W	1/1/1975	8/21/1989	14.64
Nootka 4	F	W	1/1/1980	9/13/1994	14.70
Kenau	F	W	1/1/1976	8/6/1991	15.60
Unna	F	C	12/27/1996	12/21/2015	18.98
Gudrun	F	W	1/1/1976	2/25/1996	20.15
Taima	F	C	7/11/1989	6/6/2010	20.90
Haida 2	F	W	1/1/1980	8/1/2001	21.58
Knootka	F	W	1/1/1968	3/13/1990	22.20
Bjossa	F	W	1/1/1978	10/8/2001	23.77
Kalina	F	C	9/26/1985	10/4/2010	25.02
Winnie	F	W	1/1/1975	4/11/2002	27.28
Kayla	F	C	11/26/1988	1/28/2019	30.17
Kasatka	F	W	1/1/1976	8/15/2017	41.62

Average Lifespan (All):	15.95
Average Lifespan (Males):	15.99
Average Lifespan (Females):	16.50

## EXHIBIT E: SeaWorld Captive Orcas Average Lifespan if All Living Orcas Live Additional 20 Years

ORCA NAME (OR ID)	SEX	Wild- Caught (W) or Captive- Born (C)	DATE OF BIRTH	DATE OF DEATH	AGE AT DEATH	(If alive) AGE AS OF 2/8/2039
Victoria	F	C	8/3/2012	6/16/2013	0.87	n/a
Nyar	F	C	12/31/1993	4/1/1996	2.25	n/a
Kakela	Unknown	W	1/1/1977	9/3/1979	2.67	n/a
Halyn	F	C	10/9/2005	6/15/2008	2.68	n/a
Canuck	M	W	1/1/1971	12/1/1974	3.92	n/a
Kandu	F	W	1/1/1966	6/6/1971	5.43	n/a
Kandu 2	M	W	1/1/1969	6/1/1975	6.42	n/a
Kanuck 2	M	W	1/1/1975	8/2/1981	6.59	n/a
Shamu	F	W	1/1/1962	8/23/1971	9.64	n/a
Kona	F	W	1/1/1968	9/28/1977	9.74	n/a
Sandy	F	W	1/1/1967	10/22/1977	10.81	n/a
Frankie	M	W	1/1/1962	1/29/1974	12.08	n/a
Sumar	M	C	5/14/1998	9/7/2010	12.31	n/a
Kilroy	M	W	1/1/1966	9/23/1978	12.73	n/a
Kona 2	F	W	1/1/1975	10/15/1987	12.79	n/a
Taku	M	C	9/9/1993	10/17/2007	14.11	n/a
Samoa	F	W	1/1/1978	3/14/1992	14.20	n/a
Kahana	F	W	1/1/1977	5/14/1991	14.37	n/a
Kandu 3	F	W	1/1/1975	8/21/1989	14.64	n/a
Nootka 4	F	W	1/1/1980	9/13/1994	14.70	n/a
Kenau	F	W	1/1/1976	8/6/1991	15.60	n/a
Splash	M	C	8/15/1989	4/5/2005	15.64	n/a
Kotar	M	W	1/1/1977	4/1/1995	18.25	n/a
Unna	F	C	12/27/1996	12/21/2015	18.98	n/a
Ramu	M	W	1/1/1963	1/12/1982	19.03	n/a
Kanduke	M	W	1/1/1971	9/20/1990	19.72	n/a
Gudrun	F	W	1/1/1976	2/25/1996	20.15	n/a
Winston	M	W	1/1/1966	4/28/1986	20.33	n/a
Taima	F	C	7/11/1989	6/6/2010	20.90	n/a
Haida 2	F	W	1/1/1980	8/1/2001	21.58	n/a
Knootka	F	W	1/1/1968	3/13/1990	22.20	n/a
Bjossa	F	W	1/1/1978	10/8/2001	23.77	n/a
Kalina	F	C	9/26/1985	10/4/2010	25.02	n/a
Winnie	F	W	1/1/1975	4/11/2002	27.28	n/a
Orky 2	M	W	1/1/1961	9/26/1988	27.74	n/a
Kayla	F	C	11/26/1988	1/28/2019	30.17	n/a
Tilikum	M	W	1/1/1982	1/6/2017	35.01	n/a
Kasatka	F	W	1/1/1976	8/15/2017	41.62	n/a
Amaya	F	C	12/2/2014	n/a	n/a	24.18
Kamea	F	C	12/6/2013	n/a	n/a	25.17
Makani	M	C	2/14/2013	n/a	n/a	25.98
Adan	M	C	10/12/2010	n/a	n/a	28.32
Makaio	M	C	10/9/2010	n/a	n/a	28.33
Sakari	F	C	1/7/2010	n/a	n/a	29.09
Morgan	F	W	1/1/2008	n/a	n/a	31.10

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**EXHIBIT E: SeaWorld Captive Orcas Average Lifespan if All Living Orcas Live Additional 20 Years**

ORCA NAME (OR ID)	SEX	Wild- Caught (W) or Captive- Born (C)	DATE OF BIRTH	DATE OF DEATH	AGE AT DEATH	(If alive) AGE AS OF 2/8/2039
Malia	F	C	3/12/2007	n/a	n/a	31.91
Nalani	F	C	9/18/2006	n/a	n/a	32.39
Trua	M	C	11/23/2005	n/a	n/a	33.21
Kalia	F	C	12/21/2004	n/a	n/a	34.13
Skyla	F	C	2/9/2004	n/a	n/a	35.00
Ikaika	M	C	8/25/2002	n/a	n/a	36.45
Kohana	F	C	5/3/2002	n/a	n/a	36.76
Nakai	M	C	9/1/2001	n/a	n/a	37.44
Tekoa	M	C	11/8/2000	n/a	n/a	38.25
Tuar	M	C	6/22/1999	n/a	n/a	39.63
Keto	M	C	6/17/1995	n/a	n/a	43.64
Shouka	F	C	2/25/1993	n/a	n/a	45.95
Keet	M	C	2/2/1993	n/a	n/a	46.02
Kyuquot	M	C	12/24/1991	n/a	n/a	47.12
Takara	F	C	7/9/1991	n/a	n/a	47.58
Orkid	F	C	9/23/1988	n/a	n/a	50.38
Ulises	M	W	1/1/1978	n/a	n/a	61.10
Katina	F	W	1/1/1976	n/a	n/a	63.10
Corky 2	F	W	1/1/1967	n/a	n/a	72.10

Average Lifespan (All):	25.5
Average Lifespan (Males):	26.5
Average Lifespan (Females):	25.4

# **EXHIBIT 2**

UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

MARC ANDERSON, KELLY NELSON, *and*  
JULIETTE MORIZUR,

Plaintiffs,

v.

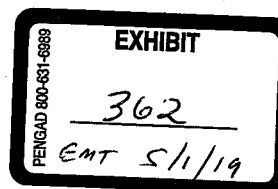
SEAWORLD PARKS AND ENTERTAINMENT,  
INC.,

Defendant.

Case No.: 4:15-cv-02172-JSW-JCS

REBUTTAL EXPERT REPORT OF E.C.M. PARSONS, Ph.D

CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER



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## I. INTRODUCTION

1. On February 8, 2019, I submitted a report pursuant to my role as an expert witness on behalf of Mr. Marc Anderson, Ms. Kelly Nelson, and Ms. Juliette Morizur (“Plaintiffs”) in this case. In that report, I provided my opinions on the accuracy of certain statements made by Defendant SeaWorld Parks & Entertainment, Inc. (“SeaWorld”) and detailed my qualifications and experience.

2. I have been asked to prepare this rebuttal report to evaluate certain opinions provided by SeaWorld’s experts, Kevin Willis and Todd Robeck (collectively referred to herein as “SeaWorld’s Experts”). I understand that expert discovery is still ongoing, and that Mr. Willis and Dr. Robeck will be deposed in the coming weeks. I reserve the right to further supplement my opinions, and to expand and elaborate on my opinions at trial.

## II. SEAWORLD’S EXPERTS’ CRITIQUES OF THE RELEVANT SCIENTIFIC LITERATURE ARE NOT VALID

3. SeaWorld’s Experts claim to take issue with certain of the scientific literature cited in my February 8 report. But both Dr. Robeck and Mr. Willis misrepresent the conclusions and the scientific community’s acceptance of that literature.

4. For example, SeaWorld’s Experts imply that the Olesiuk et al. (1990)<sup>1</sup> paper is not a reliable study of orca longevity. Specifically, they claim that the ages of wild orcas J2 and K7 were overestimated in the Olesiuk et al. (1990) paper.<sup>2</sup> But they do not dispute that numerous scientific articles published since 1990 have accepted and relied upon the findings in

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<sup>1</sup> Olesiuk, P.F. *et al.* (1990). Life history and population dynamics of resident killer whales (*Orcinus orca*) in the coastal waters of British Columbia and Washington State. *Report of the International Whaling Commission*, Special Issue 12: 209–242.

<sup>2</sup> Dr. Robeck does not cite to any literature or other authority to support his claim that K7’s age was overestimated.

Olesiuk et al. (1990). Indeed, Dr. Robeck concedes that several independent scientists have used K7's estimated age in peer-reviewed publications, including in the top-tier journal *Science*<sup>3</sup> and the extremely prestigious publication *Proceedings of the Royal Society*.<sup>4</sup>

5. In any event, two outliers amongst hundreds of data points would not affect the statistical analysis performed by Olesiuk et al. (1990). As an analogy, observance of one or two very cold days does not refute climate change when many, many data points show an increasing trend in temperature. Statistical analyses account for small numbers of extreme outliers.

6. Matkin et al. (2014)<sup>5</sup>—cited favorably by SeaWorld's Experts—confirmed that any potential overestimation of the ages of J2 and K7 had a “negligible effect” on the Olesiuk et al. (1990) conclusions. In a portion of the quoted paragraph that Dr. Robeck *omitted* from his opinions, Matkin et al. (2014) observed: “Eliminating the correction factor slightly decreases the age-specific reproductive and survival estimates in the older female age categories but has negligible effect on classification of females into post-reproductive age classes.” In fact, Matkin et al. (2014) did not dispute the general conclusions of Olesiuk et al. (1990). Thus, SeaWorld's Experts' discussion of the purportedly overestimated ages of J2 and K7 is a scientific red herring, and by deliberately ignoring the second half of the Matkin et al. (2014) quote, SeaWorld's Experts attempt to obfuscate the minimal effect that these ages have on the relevant issues here.<sup>6</sup>

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<sup>3</sup> Foster, E.A. et al. (2012). Adaptive prolonged postreproductive life span in killer whales. *Science* 337(6100): 1313. doi: 10.1126/science.1224198.

<sup>4</sup> Johnstone, R.A. & Cant, M.A. (2010). The evolution of menopause in cetaceans and humans: the role of demography. *Proceedings of the Royal Society B: Biological Sciences* 277(1701). <https://doi.org/10.1098/rspb.2010.0988>.

<sup>5</sup> Matkin, C.O. et al. (2014). Life history and population dynamics of southern Alaska resident killer whales (*Orcinus orca*). *Marine Mammal Science* 30(2): 460-479.

<sup>6</sup> On the other hand, as described in my February 8 report and below, SeaWorld's Experts' use of ASR to calculate life expectancy is a much graver statistical and scientific problem.



7. In addition, SeaWorld's Experts almost entirely ignore the Olesiuk et al. (2005)<sup>7</sup> study that updated the findings of the 1990 paper with the benefit of 15 more years of observational data. Olesiuk et al. (2005) was internally peer-reviewed by the Canadian Government and confirmed the Olesiuk et al. (1990) results, taking into account the starvation years of the Northern Resident and Southern Resident wild orca populations in the late 1990s and early 2000s.<sup>8</sup> Olesiuk et al. (2005) states: "It has become clear that killer whales can live much longer than the 25-30 years suggested by annuli in teeth (Mitchell and Baker 1980; Christensen 1982, 1984) or survival rates of captive animals (Small and DeMaster 1995). Most of the females that were in their teens when our study began 3 decades ago, are still alive today. Indeed, several of the females that were post-reproductive, suggesting they were at least in their 30s or 40s when the study began, are still alive. Similarly, although we can't estimate their exact ages, several males that were physically mature at the beginning of the study, suggesting they were in their late teens, and possibly much older, are still alive."

8. Notably, SeaWorld's Experts repeatedly tout that Robeck et al. (2015)<sup>9</sup> is a peer-reviewed article, but fail to mention that the scientific literature they critique was also peer-reviewed. Jett and Ventre (2015)<sup>10</sup> was peer reviewed, as was Jett (2016),<sup>11</sup> in *Marine Mammal*

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<sup>7</sup> Olesiuk, P.F. et al. (2005). *Life history and population dynamics of Northern Resident killer whales (Orcinus orca) in British Columbia*, Canadian Science Advisory Secretariat.

<sup>8</sup> As described in my February 8 report and below, the Robeck et al. (2015) paper improperly disregarded this environmental calamity in its analysis.

<sup>9</sup> Robeck, T., et al. (2015). *Comparisons of life-history parameters between free-ranging and captive killer whale (Orcinus orca) populations for application toward species management*. J. Mammology.

<sup>10</sup> Jett, J. & Ventre, J. (2015). *Captive killer whale (Orcinus orca) survival*. Marine Mammal Science.

<sup>11</sup> Jett, J. (2016). Response to Robeck et al.'s critique of Jett and Ventre (2015) captive killer whale (*Orcinus orca*) survival. *Marine Mammal Science* 32(2): 793-798.

*Science*. Parsons and Rose (2018)<sup>12</sup> was peer-reviewed. Olesiuk et al. (2005) (the update of Olesiuk et al. (1990) which was, itself, peer-reviewed) was internally peer-reviewed by the Canadian Government. Even peer-reviewed papers may get critiqued by the scientific community, for example in the form of rebuttal papers, of which there are several against Robeck et al. (2015).<sup>13</sup> In fact, Robeck et al. (2015) has been resoundingly critiqued by others in the scientific community—despite being peer-reviewed. As an article in the prestigious journal *Nature* observed, “[Dr. Douglas] DeMaster notes that the comparison that Robeck and his colleagues made between captive killer whales and a disturbed wild population is not useful.”<sup>14</sup>

9. It should be noted that the Robeck et al. (2015) paper does not appear in *Marine Mammal Science*. As the official journal of the Society for Marine Mammalogy, the professional society for marine mammal science, *Marine Mammal Science* can draw from more specific marine mammal science expertise than *Journal of Mammalogy*, where Robeck et al. (2015) appears.<sup>15</sup> Thus, the peer-review in *Marine Mammal Science* would be more apt and include experts from the field.

10. Dr. Robeck also mischaracterizes a recent paper I published in a tourism journal.<sup>16</sup> That paper mentions orca mortality rates, citing Ford (2009)<sup>17</sup> for estimated ages of wild orcas

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<sup>12</sup> Parsons, E.C.M. & Rose, N.A. (2018). The *Blackfish* Effect: Corporate and policy change in the face of shifting public opinion on captive cetaceans. *Tourism in Marine Environments* 13: 73–83.

<sup>13</sup> See, e.g., Jett (2016); Franks, D.W. et al. (2016). The significance of postreproductive lifespans in killer whales: a comment on Robeck et al. *Journal of Mammalogy* 97(3): 903-909.

<sup>14</sup> Callaway, E. (2016). Clash over killer whale captivity. *Nature* 531: 426-427.

<sup>15</sup> Many of the articles SeaWorld’s Experts critique *did* appear in the prestigious *Marine Mammal Science*. See, e.g., Jett and Ventre (2015).

<sup>16</sup> Parsons and Rose (2018).

and a number of papers that found the majority of captive orcas died in their 20s and 30s. Dr. Robeck does not dispute the accuracy of these citations; instead he attributes to me and my co-author a statement that was not made in the article.

11. Finally, Dr. Robeck cites to a paper he references as “Jaakkola and Willis (2019).” I searched for such paper, and was unable to find any indication that it has been finally accepted or published by any journal. As I do social media for the journal *Marine Mammal Science*, I get notified by the editor when papers are accepted. Also of note, both Jaakkola and Willis are associated with the zoological and captivity industry, and of course Mr. Willis is being paid to serve as SeaWorld’s expert witness in this case.

### **III. SEAWORLD’S EXPERTS’ OPINIONS CONFIRM THE FLAWS IN THE ROBECK ET AL. (2015) PAPER**

#### **A. At Best, Robeck et al. (2015) Concludes That SeaWorld’s Captive Orcas Have Mortality Rates Similar To Wild Orca Populations That Were, And/Or Are, Starving Or Threatened With Extinction.**

12. As discussed in my February 8 report, Robeck et al. (2015) compares survivorship metrics of SeaWorld captive orcas to Northern and Southern Resident wild orca populations. These wild orca populations are listed as endangered under the Endangered Species Act and/or threatened under the Canadian Species at Risk Act. In addition to their bodies containing high levels of pollutants,<sup>18</sup> they have faced major shortages of food.<sup>19</sup> Therefore, at best SeaWorld’s

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<sup>17</sup> Ford, J.K.B. *et al.* (2009). Linking killer whale survival and prey abundance: Food limitation in the oceans’ apex predator? *Biology Letters* 6: 139–142, doi.10.1098/rsbl.2009.0468, available at <https://royalsocietypublishing.org/doi/pdf/10.1098/rsbl.2009.0468>.

<sup>18</sup> Ross, P.S. *et al.* (2000). High PCB concentrations in free-ranging Pacific killer whales, *Orcinus orca*: Effects of age, sex and dietary preference. *Marine Pollution Bulletin* 40: 504–515; Krahn, M.M. *et al.* (2009). Effects of age, sex and reproductive status on persistent organic pollutant concentrations in “Southern Resident” killer whales. *Marine Pollution Bulletin* 58: 1522–1529.

captive whales have mortality rates and survival expectance similar to highly impacted and threatened populations that are rapidly declining at an unsustainable rate towards extinction, so much so that they have national protection in the United States and Canada.

13. SeaWorld's Experts entirely disregard the ecology of the Southern and Northern Resident orca habitat by failing to exclude the years in which these populations were starving and crashing in numbers. Yet, in their Robeck et al. (2015) paper, they incorporate the "ecology" of captivity (i.e., they exclude data from the earlier years of captivity when husbandry was purportedly less advanced and mortality rates higher) when constructing the comparison datasets. This inconsistent approach to the data invalidates Robeck et al. (2015) as a comparative study.

14. Jett (2016) pointed out the problem of using the Southern and Northern Resident populations as a comparison because of the impacts they faced: "The southern killer whale population is listed as endangered under both the Endangered Species Act (U.S.) and Species at Risk Act (Canada). This population has been compromised for many years due to myriad factors, including live captures for theme parks (National Marine Fisheries Service 2008). Consequently, the southern resident population has gone through periods of both 'unrestrained growth' and 'no net change' (Olesiuk et al. 2005). Similarly, since 2001, the Northern Resident population has been listed as threatened under the Species at Risk Act (Canada) (Allen and Angliss 2013), and it too has gone through periods of population growth and decline (Olesiuk et al. 2005) due to captures for theme parks and other factors (Fisheries and Oceans Canada 2008). Establishing the survival potential of killer whales based on endangered or threatened wild

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<sup>19</sup> Ford, J.K.B. et al. (2009). Linking killer whale survival and prey abundance: Food limitation in the oceans' apex predator? *Biology Letters* 6: 139–142, doi.10.1098/rsbl.2009.0468, available at <https://royalsocietypublishing.org/doi/pdf/10.1098/rsbl.2009.0468>.

populations is problematic.” A similar statement is attributed to Dr. DeMaster in an article in the journal *Nature*.<sup>20</sup>

15. Aside from painting a misleading picture of the health and lifespan of SeaWorld captive orcas, Robeck et al. (2015)’s problematic comparison datasets invalidate the paper’s ASR-based method. As SeaWorld’s Experts concede, to be valid this method requires that the ASR be constant over time.<sup>21</sup> Yet, despite the undisputed history of environmental challenges of the wild orca populations, Mr. Willis claims that ASR for the Northern Resident and Southern Resident orcas did not change over time. This claim is as unbelievable as it is unsupported. Mr. Willis does not cite to *any* authority in support of his claim, and in fact his assertion is contradicted by published authority. For example, Olesiuk et al. (2005) states that: “all sex and age-classes experienced higher mortality during less favourable conditions” and also notes that mortality rates doubled during poor conditions for these wild populations. Accordingly, Robeck et al. (2015)’s inclusion of data *over the entire time period* in the wild orca comparison datasets is invalid, given the changing ASR during that time period. SeaWorld’s Experts have no explanation for why the wild orca datasets were treated in this way, when the captive orca datasets were split into different time periods—likely in an attempt to highlight the more favorable data from the more recent time period.<sup>22</sup>

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<sup>20</sup> Callaway (2016).

<sup>21</sup> I discussed this issue at length in my February 8 report.

<sup>22</sup> Mr. Willis claims that ASR for SeaWorld captive orcas changed over time. While I do not dispute that has been shown for *SeaWorld’s* captive orcas, my personal research demonstrates that ASRs for captive killer whales globally have not improved over time. My colleagues and I used ASR to compare survivorship in a study of 245 killer whales worldwide, with the results presented at the 20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, in Dunedin, New Zealand. That study found that (age cohorts and sexes combined) the ASR was 0.916 (95% Confidence Interval (“CI”) 0.903 – 0.929; n = 188 killer whales). We also looked at animals who have experienced only post-1993 husbandry and compared them to killer whales that only (continued...)

16. Relatedly, Dr. Robeck points to two articles that he claims show that the starvation of the resident populations was caused by a “natural” reduction in prey. It is alarming that Dr. Robeck does not understand the devastating, non-natural environmental impacts humans have had on these wild orca populations. Tellingly, neither of the articles Dr. Robeck cites in support have anything to do with the salmon crashes in the Pacific Northwest. Beamish and Mahnken (2001) addresses salmon growth rates related to normal seasonality, *generally*, and Beamish et al. (2009) was a general paper about climate change and salmon resilience or lack thereof.<sup>23</sup> Notably and remarkably, Dr. Robeck does *not* cite Ford et al. (2009), which is the peer-reviewed paper that links actual Chinook salmon crashes to orca population declines in the Pacific Northwest. His omission of this peer-reviewed paper is a very serious omission, especially given that Ford et al. (2009) clearly refutes his arguments.

17. The anthropogenic impacts on Southern and Northern Resident orcas is accepted by the science community and by the statutory authorities. For example, there is a Southern Resident recovery plan in place under the Endangered Species Act, and myriad actions have been taken to protect these populations by the U.S. Marine Mammal Commission and National Marine Fisheries Services, and the relevant Canadian authorities. The actual salmon declines in the Pacific Northwest are not naturally occurring, but rather are the result of human-caused habitat degradation. For the Southern Residents, the Chinook salmon depression is ongoing.

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experienced pre-1993 husbandry and found that there was no significant difference (ASR pre 1993: 0.937 (CI 0.916 – 0.958) vs ASR post 1993: 0.934 (CI 0.907 – 0.962); n = 119) disproving that globally improved husbandry would improve ASRs over time. Also, we found that captive-born individuals (ASR: 0.937 (CI 0.847 – 0.906); n = 58) exhibited the same ASRs as the captive population pre-1993. This suggested that orcas appear inherently unable to adjust physiologically to captivity.

<sup>23</sup> There are two Beamish et al. (2009) papers. Dr. Robeck does not specifically identify to which paper he is citing.

18. NOAA scientist Dr. K. Marshall MacLean recently reviewed collapsing salmon stocks in the Pacific Northwest. She found that between 1989 through 2017 there were 175 U.S. Government-designated “fishery disasters” for salmon on the Pacific coast. Anthropogenic climate change was related to these disasters, but other anthropogenic factors were also deemed to be factors (over fishing, dams, etc). These were not natural, nor insignificant events.

19. The statistical comparisons in Robeck et al. (2015) were made only between SeaWorld captive orcas and Northern and Southern Resident wild orca populations.<sup>24</sup> The paper does not compare captive orcas to global, healthy whale populations. As a result, Robeck et al. (2015) cannot be used to claim that SeaWorld whales survive as well as healthy wild whales. Doing so would be the equivalent of claiming that humans are the largest creatures in the universe just because we can show that we are so much larger than frogs. It is well-accepted that frogs are not large animals. Likewise, it is well-accepted that Southern and Northern Resident orca populations are not good comparison populations for healthy orcas because all of the myriad threats they face.

**B. The Findings In Robeck et al. (2015) Are Based On Unreliable And Cherry-Picked Data.**

20. SeaWorld’s Experts do not dispute that Robeck et al. (2015) used estimated age animals in their captive population but excluded estimated age animals from the wild population when constructing comparison datasets. In addition, Robeck et al. (2015) excluded without

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<sup>24</sup> While SeaWorld’s Experts purport to compare captive orca populations to the Southern Alaskan Resident population, it should be noted that Matkin et al. (2014) never calculated the combined ASR value presented in Robeck et al. (2015)’s table. Matkin et al. (2014) calculated only age and sex-specific values, and did not calculate values for all sexes and ages combined. Indeed, looking at the combined sex, but specific age classes in Matkin et al. (2014), once the wild orcas pass 1.5 years of age, they have a much higher ASR than presented by Robeck et al. (2015). This suggests that the Robeck et al. (2015) Southern Alaskan Resident ASR figure is likely to be misleading.

explanation captive animals like Bjossa who died shortly after being transferred to SeaWorld, but included long-lived animals like Corky, who spent much of her life at another facility. These cherry-picked datasets seriously call into question any conclusions based on that data.

21. As discussed in my February 8 report, this approach biases the data sample by excluding the oldest animals in the wild sample, but including estimated age older animals in the captive sample. The first known-age animal in the captive sample was born in 1985 (and died in 2010 at the age of 25); the oldest ever known-age animal in the captive sample (who is still living) was born in September 1988 (making her 27 in September 2015). The captive whales who are older than 30 were wild-caught as juveniles and their ages are estimated. If Robeck et al. (2015) used the same methodology for captive animals as for wild animals, the mean age of the captive animals would drop dramatically. Such methodology would exclude, for example, Tilikum (age 35), Ulises (41), Orky (27), Corky (52), Katina (43), and Kasatka (41) from the captive sample.

22. To use an analogy, imagine if you wanted to compare the heights of two human populations, but you only had a 6' tape measure. The first population has many shorter people (5' 7"), but also many tall people well over 6' (say half are 6' 5" or above). The second population is all about 5' 9." If you ignore all of the people over 6' in the first population because you only have a 6' tape measure, your analysis is going to say that the second population is taller. Though you could not precisely measure the 6' 5" people, they existed and should have been taken into consideration when making a comparison. SeaWorld has effectively ignored all of the obviously tall people, to its advantage.

23. As an illustration of how the Robeck et al. (2015) methodology seriously skewed its results, it is well established that female orcas live significantly longer than males. Yet no



statistical difference was found between the sexes in Robeck et al. (2015)'s wild orca sample, likely because all of the older wild animals (that were mostly female) were excluded from the dataset.

24. Dr. Robeck's purported "Updated Analysis" suffers from the same flaws described here and in my February 8 report. From what I can tell,<sup>25</sup> his purported analysis continues to exclude the oldest orcas from the wild orca dataset while including all estimated-age orcas in the captive orca dataset. Moreover, at best, Dr. Robeck's analysis suggests that SeaWorld captive orcas live as long as nearly extinct, starving, wild orca populations. This is hardly anything to brag about.

**C. The Findings In Robeck et al. (2015) Are Based On Flawed Methodology.**

25. ASR is a flawed and inappropriate means of calculating life expectancy for orcas, and so cannot be used as evidence of actual higher life expectancies, as SeaWorld's Experts attempt to do. Importantly, this is in part because ASR changes as orcas age—which neither Dr. Robeck nor Mr. Willis disputes. Violation of this necessary assumption invalidates the use of ASR to determine life expectancy for almost all mammals, since younger and older animals are more likely to die than prime-of-life animals.<sup>26</sup>

26. SeaWorld's Experts misleadingly claim that ASR is a valid measure of longevity because other scientific papers have used this metric. But no other scientific paper has used ASR

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<sup>25</sup> Dr. Robeck does not clearly disclose his methodology for this purported "Updated Analysis" in his report, nor does he suggest that the analysis was subjected to any quality or peer review. Should additional clarity on this analysis be provided during the remainder of expert discovery, I reserve the right to expand on my response and opinions at trial.

<sup>26</sup> Survivorship to life stages gives a better comparison between wild and captive populations. See Jett and Ventre (2015). For example, up to 80 percent of the killer whales in the Pacific Northwest populations reach sexual maturity and up to 45 percent reach menopause (about 35–40 years of age). Brent et al. (2015). In captivity, only 45 percent have reached sexual maturity and only 7 percent have reached menopause. Jett and Ventre (2015).

to determine average life expectancy for orcas, as Robeck et al. (2015) did. For example, Jett and Ventre (2015) compared ASRs of captive and wild orcas in passing, while also pointing out the problems of using ASR and explaining why they did not use that method in a peer-reviewed rebuttal in *Marine Mammal Science*.<sup>27</sup>

27. In fact, well-respected scientists have specifically cautioned *against* this approach. I find it concerning that Mr. Willis “was unable to find th[e] language” in DeMaster and Drevenak (1988)<sup>28</sup> cautioning against this method, but perhaps that is telling. That paper stated: “The expected number of years that an animal will survive, **given that survival is constant from year to year**, is estimated as follows . . . this relationship is based on **the assumption that survival is constant over all ages** . . . Because relatively small differences in the ASRs can result in large differences in estimates of life expectancy and because it is commonly accepted that at some point survival does start declining with age, **we think that the ASR and not average longevity** should be used in comparing the survival rate of free-ranging and captive dolphins or in comparing the survival rate of dolphins held at different institutions.” In case that was not clear, Dr. DeMaster later specifically critiqued the Robeck et al. (2015) method.<sup>29</sup>

28. In addition, as alluded to above and explained in my February 8 report, ASR derived from a dataset that covers a prolonged time period cannot be used to calculate life expectancy unless that ASR remains constant over that time period. SeaWorld’s Experts claim that the ASR for SeaWorld’s captive orcas improved over time, *including* over the time period

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<sup>27</sup> Jett (2016).

<sup>28</sup> DeMaster, D.P. & Drevenak, J.K. (1988). Survivorship patterns in three species of captive cetaceans. *Marine Mammal Science* 4: 297–311.

<sup>29</sup> Callaway (2016).

covering the dataset used to calculate captive-born orca life expectancy. In other words, SeaWorld's Experts' calculation of life expectancy violated a necessary assumption of the ASR-based method—that ASR remain constant over time—and so is invalid.

29. SeaWorld's Experts attempt to excuse their flawed ASR analysis by pointing to the Kaplan Meier curves that appear in Robeck et al. (2015). As an initial matter, these curves are very rough because their sample size was so much smaller than Jett and Ventre's, indicating that this method is also not reliable. Moreover, even if the analysis is correct, the most that may be drawn from the data is, again, that SeaWorld animals are only surviving as well as two populations that were, and/or are, literally starving, heavily impacted, and threatened with extinction. They are not populations representative of wild healthy orca populations or of orcas globally.

#### **IV. SEAWORLD'S EXPERTS DO NOT DISPUTE THAT SEAWORLD'S CAPTIVE ORCAS DO NOT LIVE AS LONG AS SEAWORLD CLAIMS**

30. As noted in my February 8 report, among other misrepresentations about its captive orcas' lifespans, SeaWorld claims that female captive orcas have an average life expectancy of 46-50 years, and male captive orcas have an average life expectancy of 30-38 years. Neither of SeaWorld's Experts disputes that SeaWorld's captive orcas have not actually lived as long as SeaWorld claims. Indeed, as noted in my February 8 report, less than 8% of all orcas who have ever been kept captive at SeaWorld have lived past the age of 35.

31. As the data in my February 8 report shows, SeaWorld has held 34 whales who were born in captivity. 22 of these are still living—but 15 of these were born in 2000 or later. Of the 15 who could have lived for 20 years or more, only six have. These numbers contradict SeaWorld's claim that its captive orcas live just as long as wild orcas, whose mean life expectancy is at least 30-50 years by SeaWorld's own estimate. If conditions for the animals

were so much safer, more stable, more secure, and healthier at SeaWorld than more of the captive-born whales should be living longer and the survival rates should not be only equivalent to two of the most threatened and impacted wild orca populations. This is the important point.

32. Dr. Robeck claims that, were one to look at all of the Northern Resident orcas still alive today, only four orcas are older than SeaWorld's captive orca Corky. But this ignores that there have been many animals in the Pacific Northwest who were almost certainly older than Corky but who have died. Just looking at the animals alive now is nonsensical, particularly when this population is known to have suffered due to environmental effects in the recent past. In addition to the effects discussed above, the captures of wild orcas—from which SeaWorld directly benefitted—themselves likely contributed to increased mortality amongst these wild populations, since adult orcas were likely killed during the capture process.<sup>30</sup> For this same reason, Dr. Robeck's statement that only 2.1% of wild Northern Resident orcas were over the age of 50 in 2014 is misleading, since it ignores that one of the primary reasons for this age gap is SeaWorld and the rest of the captive orca industry's *forcible removal and decimation* of wild orcas from that age cohort in the 1960s and 1970s. Contrary to Dr. Robeck's claim, because of these environmental effects that hit the Northern Resident population, the age data of the Northern Resident populations is biased *in favor of* Corky. And, as noted previously, Corky spent much of her life at another facility—*not* SeaWorld.

33. Dr. Robeck references two papers studying age at death for orcas caught by whalers (Christensen, 1984), or a combination of stranded and caught animals (Best et al., 2010). These papers determined age at death using tooth sections. Tooth sections are not necessarily a

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<sup>30</sup> See <https://theprovince.com/feature/bringing-corky-home-b-c-captured-killer-whale-a-60s-sole-survivor-servant-of-seaworld>.

reliable method for aging older animals. Olesiuk et al. (2005) reinforces this in their Canadian Government report: “it has since been shown that dentinal annuli in killer whale teeth are completely occluded by about 30 years of age.” I can personally attest to how difficult it is to count age layers after an animal gets older than their teens, given my work in aging odontocete teeth in a NOAA lab. SeaWorld has many known-age animals from which they could extract teeth to test the reliability of this method of determining age. Yet this data is not available.

34. Importantly, there is no way of knowing if whalers caught whales in proportions that represented the age distribution of the population. In other words, it’s possible that the datasets used by these two studies were biased against identifying older animals, both because tooth sectioning might make older animals in the sample seem younger than they actually were and because one might argue that older animals would be more wily and less likely to be caught by whalers (or less likely to accidentally strand).

35. Even if these data were reliable, these animals are *not* necessarily representative of the age distribution found in the living population. If you looked at the age of pedestrians hit by cars, you would probably find that they are much lower than the average age of the population (for a variety of reasons that older people may be less likely to be walking across the road without looking).

**V. CONCLUSION**

36. The opinions of Mr. Willis and Dr. Robeck do not change any of the opinions in my February 8 report.

Dated: April 19, 2019



Dr. E.C.M. Parsons