

**BEFORE THE SECRETARY OF COMMERCE
PETITION TO INCLUDE THE *ORCINUS ORCA* KNOWN AS LOLITA
IN THE ENDANGERED SPECIES ACT LISTING OF
THE SOUTHERN RESIDENT KILLER WHALES**



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NOTICE OF PETITION

Pursuant to Section 4(b) of the Endangered Species Act (“ESA” or “the Act”), 16 U.S.C. §1533(b), Section 553(3) of the Administrative Procedure Act, 5 U.S.C. § 553(e), and 50 C.F.R. § 424.14(a), People for the Ethical Treatment of Animals, Inc., the Animal Legal Defense Fund, Orca Network, Howard Garrett, Shelby Proie, Karen Munro, and Patricia Sykes (“Petitioners”), hereby petition the Secretary of Commerce, through the National Marine Fisheries Service (“NMFS”), to include the orca known as Lolita as a protected member of the Southern Resident killer whale (“SRKW”) population under the ESA. This petition sets in motion a specific administrative process as defined by Section 1533(b)(3) and 50 C.F.R. § 424.14(b), placing mandatory response requirements on the NMFS.

This petition presents substantial scientific and commercial information indicating that the orca Lolita is a member of the endangered Southern Resident killer whale population. *See* 50 C.F.R. § 424.14(b)(1) (“[S]ubstantial information’ is that amount of information that would lead a reasonable person to believe that the measure proposed in the Petition may be warranted.”). Therefore, the agency must make an initial finding “that the petitioned action may be warranted.” 16 U.S.C. § 1533(b)(3)(A) (The Secretary must make this initial finding “[t]o the maximum extent practicable, within 90 days after receiving the Petition.”). Petitioners are confident that a status review of the distinct population segment, as required by 16 U.S.C. § 1533(b)(3)(B), will support a finding that listing Lolita as endangered is warranted.

EXECUTIVE SUMMARY

This petition seeks to include the orca known as Lolita as a member of the Southern Resident killer whale population under the Endangered Species Act, 16 U.S.C. §§ 1531–1544. Lolita is the lone surviving captive member of the endangered population. She was taken from the Southern Resident killer whale population in 1970. She has since been held at the Miami Seaquarium in Florida, a for-profit entity that displays marine animals to the public. There she is forced to perform twice daily.

Lolita’s survival is extraordinary yet her capture was far from unique. Between 1962 and 1977, the Southern Resident killer whale population was targeted for capture nearly twice as often as the neighboring orca populations combined. At least 11 Southern Resident killer whales died during these round ups. Another 36 were lost to captivity. Although males have a maximum lifespan of 50 years and females may live over 100 years, Lolita is the only captive Southern Resident killer whale to live past the 1980s.

As the captive Southern Resident killer whales perished, the wild Southern Resident killer whale population struggled to avoid extinction. The National Marine Fisheries Service acknowledges that “[t]he capture of killer whales for public display during the 1970s likely depressed their population size and altered the population characteristics sufficiently to severely affect their reproduction and persistence.” 70 Fed. Reg. 69903, 69908 (Nov. 18, 2005). Indeed, nearly two decades passed before the wild Southern Resident killer whale population recovered to a pre-capture high of 96 members. This recovery was fleeting as now only 85 remain.

The Southern Resident killer whale is recognized as “one of the most critically endangered marine mammals occurring regularly or exclusively in U.S. waters.” John E. Reynolds III, Helene Marsh & Timothy J. Ragen, *Marine Mammal Conservation*, 7 ENDANGERED SPECIES RESEARCH 23, 24 t.1 (2009). In 2005, after evaluating the five listing factors of the Endangered Species Act, the National Marine Fisheries Service issued a final rule listing the Southern Resident killer whales as endangered under the Act. In 2011, the agency completed its five-year review of the endangered status of the Southern Resident killer whales based on the best recent available information and concluded, in evaluating the same statutory factors, that they “remain in danger of extinction” and their endangered classification “is to remain the same.”

Without any explanation, or any notice to the public or opportunity for public comment, the National Marine Fisheries Service stated in the 2005 final rule that the “endangered” listing “does not include killer whales . . . placed in captivity prior to listing, nor does it include their captive born progeny.” Since the 35 other captive Southern Resident killer whales died decades before the listing decision, leaving behind no captive born progeny, this provision applies exclusively to Lolita. In fact, Lolita is the only captive member of *any* endangered species to be summarily excluded from a listing decision in this manner.

No explanation was offered for Lolita’s exclusion from the listing because no legitimate explanation exists. Lolita’s biological heritage is undisputed. The Endangered Species Act unquestionably applies to captive members of a species and the wholesale exclusion of captive members of a listed species is in excess of the agency’s authority. Lolita’s exclusion serves only one purpose: it protects the commercial interests of the Miami Seaquarium. The Endangered Species Act specifically precludes agency consideration of whether listing a species would cause the holder of any member of the species any economic harm. Thus Lolita’s exclusion violates the Act.

This petition urges the National Marine Fisheries Service to rectify this unjustified and illegal exclusion, thereby extending Endangered Species Act protections to all members of the Southern Resident killer whale population. Although as a legal matter Lolita’s genetic heritage is sufficient to merit her listing, this petition provides additional support in four sections. The first section provides the factual background regarding the Southern Resident killer whales’ listing and Lolita’s exclusion. The second section explains the application of the Act to captive members of listed species. The third section applies the five factors that govern listing decisions under the Act to the Southern Resident killer whales generally and also to Lolita. The fourth section considers policy reasons that support Lolita’s protection, given her significant scientific value to the wild population.

I. INTRODUCTION

A. Petitioners

Petitioner People for the Ethical Treatment of Animals, Inc. (“PETA”) is a non-profit organization dedicated to protecting animals from abuse, neglect, and cruelty, and undertakes these efforts through public education, cruelty investigations, research, animal rescue, legislation, special events, celebrity involvement, protest campaigns, and lawsuits to enforce

laws enacted to protect animals. PETA submits this petition on its own behalf and on behalf of its members with an interest in preserving and recovering the SRKW population.

Petitioner Animal Legal Defense Fund (“ALDF”) is a non-profit organization dedicated to protecting the lives and advancing the interests of animals through the legal system, and undertakes these efforts through legal scholarship, public education, cruelty investigations, legislation, and lawsuits to enforce laws enacted to protect animals. ALDF submits this petition on its own behalf and on behalf of its members with an interest in preserving and recovering the SRKW population.

Petitioner Orca Network is a non-profit organization dedicated to raising awareness of the whales of the Pacific Northwest and the importance of providing them healthy and safe habitats through, *inter alia*, participation in a whale sighting network and lecturing on orca research, captures, captivity, and natural history, with an emphasis on orca cultures, communications, and intelligence. Orca Network submits this petition on its own behalf and on behalf of its members with an interest in preserving and recovering the SRKW population.

Petitioner Howard Garrett is the director of Orca Network and has studied orcas for over three decades, including SRKWs and Lolita specifically. Before founding the Orca Network, Mr. Garrett was a field researcher for the Center for Whale Research and served as editor of the journal of the Whale Museum. He is a member of the Society for Marine Mammalogy and Northwest Aquatic and Marine Educators Association and has published work on the cultural communities of orcas and the history, biology, and logistics of releasing long term captive orcas.

Petitioner Shelby Proie has studied and observed orcas for many years, including the SRKWs in their natural waters and Lolita at the Miami Seaquarium (“Seaquarium” or “MSQ”). She has submitted information and other materials to Seaquarium and the federal government in an effort to improve Lolita’s conditions at the facility.

Petitioner Karen Munro has had an intense interest for over thirty-five years in observing and protecting orcas, including the SRKWs in the wild and in captivity. She has seen first-hand young orcas captured in the waters of Washington State by the exhibition industry—likely from the now-endangered SRKWs.

Petitioner Patricia Sykes was employed at Seaquarium in 1970 when Lolita was first captured from the wild and brought to the facility to be exhibited, and was a member of the staff responsible for Lolita’s husbandry and transition to a life in captivity. Ms. Sykes observed Lolita endure great suffering caused by her capture and the unnatural living conditions in captivity.

B. The Southern Resident Killer Whale Is an Endangered Species

1. The SRKWs Form a Distinct Population Segment

The Southern Resident killer whale (“SRKW”) population lives in the inland waterways off the coast of Oregon, Washington, and Vancouver Island, and consists of three different pods—the J, K, and L pods. 70 Fed. Reg. 69903, 69905 (Nov. 18, 2005). NMFS considers the three SRKW

pods a distinct population segment (“DPS”)¹ because they “are genetically distinct” from other killer whales, and there is a “high degree of reproductive isolation from other North Pacific resident killer whales.” *Id.* at 69907.

The distinctions are many. Resident killer whales, for example, consume mainly fish, which distinguishes them from the mammal-eating Transient killer whales who share their waters. *See* NATIONAL MARINE FISHERIES SERVICE, RECOVERY PLAN FOR SOUTHERN RESIDENT KILLER WHALES (*ORCINUS ORCA*) 61 (2008) [hereinafter “Ex. 1”]. Transient and Resident killer whales also vary physically, with different skull traits and saddle patch pigmentation, and culturally, with different vocalization patterns. *Id.* at 6. Although the SRKW share more in common with other Northern Pacific Resident killer whales, they too are distinguishable as the different Resident populations exhibit distinct, unique behaviors and occupy spatially separate ranges. 70 Fed. Reg. at 69907; *see, e.g.*, GARY J. WILES, WASH. DEPT. OF FISH & WILDLIFE, WASHINGTON STATE STATUS REPORT FOR THE KILLER WHALE 20 (Mar. 2004), <http://wdfw.wa.gov/publications/00381/wdfw00381.pdf> [hereinafter “Ex. 2”] (Northern Residents commonly visit particular beaches “to rub their bodies on smooth pebbles in shallow water,” but this behavior has never been observed in Southern Residents); *id.* at 22, 26 (Southern Residents “are regularly present in the Georgia Basin (defined as the Georgia Strait, San Juan Islands, and Strait of Juan de Fuca)” whereas the Northern Resident community “is distributed from the Olympic Peninsula to southeastern Alaska”).

2. *The SRKWs Were Depleted for Commercial Gain*

The SRKWs’ preferred range, with its shallow coastal waterways, led ultimately to the SRKWs’ depletion. Hunters seeking orcas for public display targeted the SRKWs nearly twice as often as the other North Pacific killer whale populations combined. *See* Ex. 1 at 51. Between 1962 and 1977, 19 attempts were made to remove SRKW for captivity. *Id.* As a result, at least 11 SRKWs died and 36 others were removed for display. *Id.* Of these, only one remains. Ex. 1 at 52. Lolita, who was approximately four years old when she was taken from the SRKWs’ L pod in 1970, *id.*, has been held ever since at Seaquarium, a for-profit entity that displays marine animals to the public, where she is forced to perform twice daily, *see* Declaration of Shelby Proie, ¶ 4 [hereinafter “Ex. 3”].

The SRKW population continues to exhibit the effects of the loss of Lolita and the 46 others who died for display. Captors expressed a preference for younger orcas, who were easier to transport, and males. Ex. 1 at 52. NMFS recognizes that the “selective removal of younger animals and males produced a skewed age- and sex-composition in the population, which probably worked to slow later recovery.” *Id.* The SRKW recovery was both slow and fragile. Nearly two decades passed before the SRKW population recovered to the pre-capture high of 96 members. *Id.* at 51-2, 55 (citation omitted). This recovery could not be sustained. The SRKW population declined to a post-recovery low of 81 members in 2001. *Id.* at 55. The latest count revealed a

¹ Petitioners are aware of NMFS’ positive 90-day finding on a recent petition to delist the SRKW population—which “does not include any information regarding the five section 4(a)(1) factors or status of population,” 77 Fed. Reg. 70733, 70735 (Nov. 27, 2012)—and are confident that after a status review, the agency will find that petition relies on scientifically invalid arguments, confirm that SRKWs are a DPS, and conclude that delisting is not warranted.

total of 85 wild members, down from 90 in 2006. *See* Center for Whale Research, *Research*, <http://www.whaleresearch.com/research.html> [hereinafter “Ex. 4”]; Ex. 1 at 55.

3. *The SRKWs Are Endangered Because They Face Various Pervasive Threats*

Depletion for display was just one of many factors that contributed to the SRKWs’ failure to thrive. Before issuing its 2005 final rule listing the SRKW DPS as endangered, NMFS examined the five listing factors set forth in section 4(a)(1) of the ESA and its listing regulations, 50 C.F.R. part 424. 70 Fed. Reg. at 69906. Listing is mandatory if a species is endangered or threatened as a result of any one of these statutory factors. 16 U.S.C. §1533(a)(1). NMFS found evidence that the SRKW population faced threats, either historically or currently, in each of the five categories, which are discussed in greater detail below. 70 Fed. Reg. at 69908.

In particular, NMFS identified three on-going “pervasive threats,” including “disturbance from vessels, the persistence of legacy toxins and the addition of new ones into the whales’ environment, and the potential limits on prey availability (primarily salmon) given uncertain future ocean conditions.” *Id.* at 69906. NMFS further recognized that the small size of the SRKW population left it “at risk of extinction because of either small-scale impacts over time (e.g., reduced fecundity or subadult survivorship) or a major catastrophe (e.g., disease outbreak or oil spill).” *Id.* at 69909.

Without explanation and inexplicably, NMFS stated in the final rule that the “endangered” listing “does not include killer whales from J, K, or L pod placed in captivity prior to listing, nor does it include their captive born progeny.” 70 Fed. Reg. at 69911. This wholesale exclusion operates to deny only Lolita the protections of the ESA, as the 35 other captive members of the SRKW population died without producing any captive born progeny decades before the listing decision was made. *See generally* Orca Homepage, *Orcas in Captivity*, <http://www.orcahome.de/orcastat.htm> [hereinafter “Ex. 5”]; Orca Homepage, *Deceased Orcas*, <http://www.orcahome.de/orcadead.htm> [hereinafter “Ex. 6”].

C. **Lolita Is the Only Living Captive Southern Resident Killer Whale**

Lolita was captured on August 8, 1970, in Penn Cove, Whidbey Island, near Puget Sound and approximately 50 miles north of Seattle, Washington. *See* Orca Network, *Lolita’s Capture*, <http://www.orcanetwork.org/captivity/lolitacapture.html> [hereinafter “Ex. 7”]. The Penn Cove round up was one of the largest and deadliest of the capture era. *See* BabyWildFilms, “*OrcaStories*” from “*Baby Wild Films Presents: The Killer Whale People*,” YOUTUBE (May 18, 2012), <http://www.youtube.com/watch?v=StR57mPeyk0> [hereinafter “Ex. 8”]. Nearly 100 orcas, almost the entire SRKW population, were herded into a makeshift sea pen. Ex. 7. Only 12 of these orcas were young enough for shipping and training. *Id.* Captors deployed nets to separate the young from the rest of the population. *Id.* Four calves and one adult female drowned in these nets as they attempted to reach each other. *Id.*

Lolita, who was approximately four years old, was one of seven orcas selected for removal. *Id.* She was taken from the L pod of the Southern Resident killer whale community. *See* Intervenor-Defendant Miami Seaquarium’s Answer to Plaintiffs’ Amended Complaint at ¶ 38, *Proie et al. v. Nat’l Marine Fisheries Service*, No. 3:11-cv-5955 (Jan. 25, 2012) (admitting that

Lolita was captured from the L pod) [hereinafter “Ex. 9”]. Her mother is believed to be L25, or Ocean Sun—an approximately 84-year-old killer whale who remains the matriarch of Lolita’s family in the wild. See Center for Whale Research, *ID Catalogue*, http://www.whaleresearch.com/orca_ID_pods.html [hereinafter “Ex. 10”]; see also Orca Network, *Lolita’s Life Before Capture*, <http://www.orcanetwork.org/captivity/beforecapture.html> [hereinafter “Ex. 11”]. More than 40 years later, Lolita still makes the unique calls of the L25 subpod. See Orca Network, *Lolita MSQ Facts Flyer*, www.orcanetwork.org/captivity/LolitaMSQFactsflyer.pdf [hereinafter “Ex. 12”].

Although Lolita has endured more than four decades on display, captivity has been detrimental to her. According to one of her former trainers, when Lolita first arrived at Seaquarium, she had a very difficult time adjusting to life in captivity—she would not eat, swim, or even move. See Declaration of Patricia Sykes, ¶ 3 [hereinafter “Ex. 13”]. In addition, her back was often sunburned, cracked, and bleeding from being exposed to the hot Miami sun. *Id.* ¶ 3. Seaquarium initially housed Lolita in a tank that was much too small for her—she was not able to stretch out and her tail curled at the bottom of the tank. *Id.* ¶ 4.

In October 1971, Lolita was moved to the tank in which she continues to be held. *Id.* ¶ 6. She was joined then by a male killer whale named Hugo. Ex. 7. Hugo’s sudden death in 1980 left Lolita despondent at the bottom of her tank in a state “not unlike bereavement.” Roger D. Ray et al., *Behavioral and Respiratory Synchronization Quantified in a Pair of Captive Killer Whales*, in *BEHAVIORAL BIOLOGY OF KILLER WHALES* 187, 209 (Alan R. Liss, Inc. 1986) [hereinafter “Ex. 14”]; see also Ex. 13 ¶ 10. In the 32 years since Hugo’s death, Lolita has not had a killer whale companion. Ex. 13 ¶ 11; see Section III.A.2.c, *infra* (discussing the importance of companions for highly social orcas).

Instead, Seaquarium added to her tank white-sided dolphins—a completely different species than her now-endangered orca family from whom she was taken. See MSQ, *Killer Whale and Dolphin*, <http://www.miamiseaquarium.com/Shows/Killer-Whale-and-Dolphin> [hereinafter “Ex. 15”]; see also Declaration of Dr. Ingrid Visser, ¶ 30 [hereinafter “Ex. 16”]. Orcas and white-sided dolphins do not interact socially in the wild. Ex. 16 ¶ 30. The two species are only distantly related, as gorillas are to humans. *Id.* They also vary significantly in size. An adult white-sided dolphin is scarcely the size of a newborn orca calf. See Randall R. Reeves, et al., *GUIDE TO MARINE MAMMALS OF THE WORLD*, pp. 402–05, 436–39 (2002) [hereinafter “Ex. 17”]. Thus, these dolphins are unable to fulfill Lolita’s “need for social contact and interaction, which is fundamental to her physical, social, and psychological well-being.” Ex. 16 ¶ 30.

D. Lolita Is the Only Captive Member of an Endangered Species Wholly Excluded from the ESA

Lolita’s isolation, longevity, and heritage make her unique among captive orcas. Her complete exclusion from the ESA makes her unique among all captive members of endangered species.

The differential treatment of members of a species under the ESA, sometimes referred to as split listing, is extremely rare. Only four terrestrial and no marine mammal species have ever been subject to split listing. *Safari Club Int’l v. Ken Salazar, Secretary of the Interior*, 852 F. Supp. 2d 102, 113 (D.D.C. 2012). Only two of these split listings involved captive populations. *Id.* at 114.

Both of these captive populations were listed as threatened, while their wild counterparts were listed as endangered. *Id.* Only one, the captive chimpanzee, remains split listed. *Id.* The captive chimpanzee’s status is currently being reexamined after the FWS found that a “petition present[ed] substantial scientific or commercial information indicating that listing all chimpanzees as endangered may be warranted.” 76 Fed. Reg. 54423 (Sept. 1, 2011); *see also* 76 Fed. Reg. 67401 (Nov. 1, 2011). The differential treatment of wild and captive animals in each of these instances is in excess of FWS’ statutory authority.

While captive chimpanzees are at least listed as threatened, Lolita is not listed at all. Split listing is rare; to our knowledge, the wholesale exclusion of a captive member of a listed species is unprecedented. Moreover, Lolita is the only captive member of a listed marine mammal species to receive any kind of differential treatment under the ESA. While most of the 22 listed marine mammals species are spared captivity either because of their size or their scarcity, the SRKW was one of three species with captive members at the time of listing.² Two other marine mammal species with captive members are currently being considered for listing under the ESA without any apparent contemplation of split listing.³

Notably, captive and wild chimpanzees were originally both listed as threatened. 41 Fed. Reg. 45993 (Oct 19, 1976). Captive chimpanzees, however, were simultaneously stripped of the Act’s protection “to facilitate legitimate activities of U.S. research institutions, zoos, and entertainment operations.” *Id.*; *see also* 55 Fed. Reg. 9129 (Mar. 12, 1990). The captive chimpanzee became officially split listed 14 years later, when NMFS’ sister agency, the U.S. Fish and Wildlife Service (“FWS”), changed the wild chimpanzee’s status. 55 Fed. Reg. 9129. Justifying the differential treatment, the FWS noted that the captive chimpanzees were “being managed as an interbreeding population” that provided “surplus animals for research and other purposes,” thereby potentially reducing the “probability that other individuals of that species will be removed from the wild.” *Id.* In other words, the agency at least purported to assert a “conservation” purpose for the differential treatment.

Unlike the captive chimpanzee, Lolita is *not* part of an interbreeding population providing surplus animals for research or other purposes, and NMFS’ failure to protect her does *not* reduce the probability that other SRKWs will be removed from the wild. Where FWS at least alleged a “conservation” purpose for its decision, NMFS was silent. Lolita’s exclusion preserves *only* her commercial value—a clear violation of the ESA, which prohibits economic considerations as a basis for listing decisions.

² The two other species were the Saimaa seal (*Phoca hispida saimensis*), a subspecies of the Bearded seal, and the Steller sea lion (*Eumetopias jubatus*). *See* 58 Fed. Reg. 26920 (May 6, 1993); 55 Fed. Reg. 49204, 49208 (Nov. 26, 1990); *see also* Sun Sentinel, *U.S. Marine Mammal Inventory, Saimaa seal*, http://databases.sun-sentinel.com/news/broward/ftlaudMarineMammals4/ftlaudMarineMammals_list.php [hereinafter “Ex. 18”]; Sun Sentinel, *U.S. Marine Mammal Inventory, Steller sea lion*, http://databases.sun-sentinel.com/news/broward/ftlaudMarineMammals4/ftlaudMarineMammals_list.php [hereinafter “Ex. 19”].

³ These species are the Bearded seal (*Erignathus barbatus*) and the Ringed seal (*Phoca hispida*). *See* 75 Fed. Reg. 77496 (Dec. 10, 2010); 75 Fed. Reg. 77476 (Dec. 10, 2010); *see also* Sun Sentinel, *U.S. Marine Mammal Inventory, Bearded seal*, http://databases.sun-sentinel.com/news/broward/ftlaudMarineMammals4/ftlaudMarineMammals_list.php [hereinafter “Ex. 20”]; Sun Sentinel, *U.S. Marine Mammal Inventory, Ringed seal*, http://databases.sun-sentinel.com/news/broward/ftlaudMarineMammals4/ftlaudMarineMammals_list.php [hereinafter “Ex. 21”].

II. THE ESA APPLIES TO CAPTIVE MEMBERS OF LISTED SPECIES

The differential treatment of captive members of endangered species is inconsistent with the text of the Act. Moreover, the wholesale exclusion of a captive member of a listed species is an unprecedented and unlawful deviation from decades of agency policy and practice. As this section explains, Lolita's exclusion from the listing of the SRKWs is improper because the ESA is designed to protect both captive and wild members of protected species. The Act specifically contemplates, and subjugates, the commercial interests of holders of captive wildlife, indicating that animals should be protected despite their captivity. The text also specifically prohibits the "take" of captive members of protected species, further establishing that the Act applies equally to captive animals. Her exclusion frustrates both the text and the spirit of the Act.

A. Differential Treatment of Captive Members of Listed Species Exceeds the Authority Granted Under the Act

Nothing in the text of the ESA supports treating captive members differently at the time of listing. Rather, the Act mandates that when making listing decisions under Section 4 of the statute, the agencies are to consider only "the best available scientific and commercial data available" concerning the biological status of the species, 16 U.S.C. § 1533(b)(1)(A), and are precluded from taking into account any economic considerations, such as whether listing the species would cause the holder of any member of the species any economic harm, *id.*; S. Rep. No. 418, 97th Cong., 2d Sess. 12 (1982) (explaining that this language "*would preclude the Secretary from considering economic or other non-biological factors in determining whether a species should be listed Only in this way will the endangered and threatened species lists accurately reflect those species that are or are likely to be in danger of extinction.*" (emphasis added)); *New Mexico Cattle Growers Ass'n v. U.S. Fish & Wildlife Serv.*, 248 F.3d 1277, 1284-85 (10th Cir. 2001) (quoting H.R. Rep. No. 97-567, pt. 1 at 29 (1982)) ("[T]he ESA clearly bars economic considerations from having a seat at the table when the listing determination is being made. 'The addition of the word 'solely' is intended to remove from the process of listing or delisting of species any factor not related to the biological status of the species. . . . [E]conomic considerations have no relevance to determinations regarding the status of species.'").

Thus the statute specifically contemplates the application of the ESA to captive members of a listed species. Moreover, it expresses a clear directive to protect captive animals despite their captivity, even at the expense of those who exhibit them.

Further, the agencies charged with administering the Act question their discretion to treat captive and wild populations differently under the ESA. Defending the protection of captive-born non-native antelopes and gazelles, FWS claimed "it could not treat captive populations differently." *Safari Club v. Salazar*, 852 F. Supp. 2d at 113 n.9. In fact, the Deputy Secretary of the Interior recently questioned agency discretion to issue split listings. He noted, when explaining a delay during the intradepartmental review of a listing petition, "that the petition effectively raised the question of *whether there is discretion to differentiate on a species by species basis the listing status of captive specimens from those in the wild.*" See Declaration of David J. Hayes, Deputy Secretary for the Department of the Interior, *Safari Club v. Salazar*, No. 1:11-cv-01564, at 4 (Sept. 6, 2012) (emphasis added) [hereinafter "Ex. 22"].

When NMFS excluded Lolita from the ESA protection enjoyed by her immediate family, the agency actually engaged in a “stripped” listing. When it stripped Lolita of her rightful status under the Act, the agency also denied the public of its right to participate in the listing decision. NMFS did not provide any opportunity for public comment and failed to provide any explanation for her exclusion after the fact. Since no legitimate reason exists to exclude Lolita based on the best available scientific data, her exclusion stems from improper grounds.

The only party benefitting from Lolita’s exclusion is Seaquarium, which generates millions of dollars in profits from her display.⁴ Lolita was excluded from listing solely to protect Seaquarium’s commercial interests, despite the text of the ESA that precludes agencies from taking into account any economic considerations when making listing decisions. *See* 16 U.S.C. § 1533(b)(1)(A); S. Rep. No. 418, 97th Cong., 2d Sess. 12 (1982). While the Act protects animals *despite* their captivity, Lolita was impermissibly excluded *because* of her captivity.

B. The ESA “Take” Provision Protects Captive Members of a Listed Species

Other areas of the ESA further demonstrate that the Act is designed to protect captive members of a protected species. The ESA does not allow a wholesale exemption from its prohibitions for all captive members of a listed species. Rather, Section 9 provides that, while certain prohibitions that otherwise apply to listed species—such as a ban on their import and export—do not apply to wildlife held in captivity on the date a species is listed, 16 U.S.C. § 1538(b), this exemption does not apply to other enumerated prohibitions, including the prohibition on the “take” of such species, *id.* § 1538(a)(1)(B). In addition, even the limited Section 9 exceptions do not apply where the holding of such wildlife is done in “the course of a commercial activity.” *Id.* § 1538(b)(1). These provisions clearly contemplate the application of the ESA to captive members of listed species.

FWS, charged with administration of the Act for land and freshwater species, has also made clear that the “take” and other provisions of the ESA apply to captive members of listed species as well as to those in the wild. 44 Fed. Reg. 30044-45 (May 23, 1979). In its response to public comments, the agency has also specifically addressed whether the definition of “take” could be amended to exclude endangered animals bred in captivity, stating:

“Take” was defined by Congress in Section 3 of the Act as . . . “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect . . .” endangered or threatened wildlife, *whether wild or captive*. Therefore, the definition can be clarified by further defining its component terms, but *the statutory term cannot be changed administratively*.

63 Fed. Reg. 48634, 48636 (Sept. 11, 1998) (emphases added).

Not only does the ESA clearly apply to captive members of listed species, the Act applies with equal force to captive-born members of a listed species. In *Safari Club v. Salazar*,

⁴ MSQ bills Lolita as a star-attraction, and charges \$29.95 to \$39.95 per ticket. *See* MSQ, *Tickets and Pricing* [hereinafter “Ex. 23”]. According to MSQ’s website, annual attendance is more than 500,000 a year. MSQ, *History of MSQ*, <http://www.miamiseaquarium.com/AboutUs/History> [hereinafter “Ex. 24”]. Therefore, by any measure, the MSQ has made tens of millions—if not hundreds of millions—of dollars from exhibiting this killer whale.

852 F. Supp. 2d 102, the court held that FWS could not legally exclude all of the captive-born members of an endangered species from the requirements of the statute, and ruled that, instead, anyone wishing to engage in an otherwise prohibited activity with respect to such animals must apply for and obtain a special permit to do so under Section 10 of the statute. Lolita, who was born in the *wild*, deserves the same protection given to other captive members of listed species and should not be excluded from ESA protection solely because she was removed from the wild before the SRKW was listed.

In addition, as mentioned above, the statutory exemption for captive members of a species only applies where the holding of such animals “and any subsequent holding or use of the fish or wildlife *was not in the course of a commercial activity.*” 16 U.S.C. § 1538(b)(1) (emphasis added). For this reason, the agency’s complete exemption from *all* of the prohibitions of the ESA for all captive members of the SRKW, regardless of how they are used, also violates the plain language of the statute.

The decision to exclude Lolita was substantively and procedurally improper: it narrowed the reach of the Act, expanded the scope of agency discretion, deviated from agency practice, denied the opportunity for notice and comment, elevated commercial interests over scientific data, and created an extra-textual exemption that strips away the protections due Lolita under the Act.

III. NMFS HAS A NON-DISCRETIONARY DUTY TO INCLUDE LOLITA IN THE LISTING OF THE SRKWS UNDER THE ESA

As a legal matter, this should be the end of the inquiry; as discussed above, captive members of a listed species are required to be protected by the ESA. Lolita is biologically a member of a listed species and the ESA does not permit the categorical exclusion of captive members of listed species. Thus, Lolita’s undisputed genetic heritage is sufficient to support her mandatory listing along with the other members of the SRKWs. However, because listing decisions are ordinarily based upon the application of the five listing factors to the species in peril, this section applies the five listing factors to Lolita’s life in captivity. Although this analysis is not required in this case, it further demonstrates that Lolita must be included in the SRKW listing.

Section 4(a)(1) of the ESA and its implementing regulations, 50 C.F.R. part 424, impose a non-discretionary duty requiring NMFS to list a species as endangered or threatened if any one or more of five statutory factors are met:

- A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- B) overutilization for commercial, recreational, scientific, or educational purposes;
- C) disease or predation;
- D) the inadequacy of existing regulatory mechanisms; or
- E) other natural or manmade factors affecting its continued existence.

16 U.S.C. § 1533(a)(1). After examining these five factors, NMFS issued a final rule listing the SRKWs as endangered under the ESA. 70 Fed. Reg. 69903 (Nov. 18, 2005). In January 2011, NMFS conducted a five-year review and found, analyzing the same statutory factors, that the

SRKWs should remain listed. NMFS, SOUTHERN RESIDENT KILLER WHALES (*ORCINUS ORCA*), 5 YEAR REVIEW: SUMMARY AND EVALUATION 4, 10 (2011) [hereinafter “Ex. 25”].

A. The Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

1. The SRKWs’ Habitat Is Insufficient to Support a Recovered Population

In its listing decision, NMFS concluded that the SRKWs’ habitat has been modified by several means, including changes in prey availability, contaminants and vessel traffic. 70 Fed. Reg. at 69908. The wild and farmed populations of salmon—the primary prey of Southern Residents—have declined due to degradation of aquatic ecosystems and climate variability and change, which “may force the whales to spend more time foraging and could lead to reduced reproductive rates and higher mortality.” *Id.* Furthermore, studies have documented high levels of polychlorinated biphenyls (“PCBs”) and other “emerging contaminants” in SRKWs and the environment, which can induce immune suppression, reproductive impairment, and have other physiological effects. *Id.* In addition, “[c]ommercial shipping, whale watching, ferry operations, and recreational boating traffic have expanded in recent decades” and, even apart from potential injury resulting from collisions with vessels, are linked “with short-term behavioral changes” and “may affect foraging efficiency, communication, and/or energy expenditure through physical presence or increased underwater sound levels or both.” *Id.*

In its five-year status review, the agency could not ensure that the habitat, including quantity, quality, and accessibility of prey species, is sufficient to support a recovered population of SRKWs. “[W]e are just beginning to gather information to help us evaluate if the needs of the whales are being met, identify which factors are degrading habitat, and determine where and when the whales may be prey limited.” Ex. 25 at 10.

2. Lolita’s Habitat Is Restricted, Inadequate, and Illegal

By virtue of her captivity, every aspect of Lolita’s habitat is modified and her range severely curtailed. While this is true of all captive animals, Lolita is a member of the SRKWs who would otherwise be listed if she were not captured for public display and the conditions of her confinement are extreme. Absent the application of the ESA, Lolita’s confinement is regulated only by the Animal Welfare Act (“AWA”), 7 U.S.C §§ 2131–2159, which Congress enacted, as amended, to ensure that animals used for exhibition purposes “are provided humane care and treatment.” 7 U.S.C. § 2131(1). The regulations promulgated by the U.S. Department of Agriculture (“USDA”)—the agency charged with enforcement of the AWA—provide for, *inter alia*, minimum space, shelter, and social housing requirements. 9 C.F.R. §§ 3.104(a), 3.103(b), 3.109. Lolita’s current conditions violate each of these standards.

a. Lolita’s Tank Does Not Meet Minimum Space Requirements

The AWA regulations for marine mammals provide that the “primary enclosure” for such animals must comply with “minimum space requirements.” 9 C.F.R. § 3.104(a). It further provides that the primary enclosure “must be constructed and maintained so that the animals contained within *are provided sufficient space, both horizontally and vertically, to be able to*

make normal postural and social adjustments with adequate freedom of movement, in or out of the water.” *Id.* (emphasis added).

The primary enclosure standard specifically for cetaceans additionally provides that these animals must be provided a pool of water that has a “minimum horizontal dimension (MHD)” that is “two times the average adult length” of the species. *Id.* § 3.104(b). The MHD is defined as “the diameter of a circular pool of water, or in the case of a square, rectangle, oblong, or other shape pool, the diameter of the largest circle that can be inserted within the confines of such a pool of water.” *Id.* § 1.1. Because the average length of an adult killer whale is 24 feet, *see id.* § 3.104, Table III, Lolita’s pool must have an MHD of 48 feet.

Pursuant to the regulatory definition of MHD and the USDA’s internal documents reflecting its own measurements, the tank in which Lolita is confined—which has a large concrete obstruction on which her trainers can stand—plainly and indisputably has an MHD of only 35’—*more than 25% smaller* than the minimum size required by the AWA. *See* USDA, Whale Stadium Dimensions [hereinafter “Ex. 26”] (“MHD = 35’ if work station is not waived”; “MHD = 60’ disregarding work station”).⁵ The tank confines Lolita, who is at least 20’ long and weighs more than 7,500 lbs., to an area only 35’ by 80’, preventing her from engaging in any natural behaviors. *See generally* Declaration of Dr. Lori Marino, Senior Lecturer in Neuroscience and Behavioral Biology, Emory University, ¶¶ 11–14 [hereinafter “Ex. 27”].

As explained in the 1975 Marine Mammal Commission Standards and Guidelines, from which this standard was adopted, 42 Fed. Reg. 42046, 42044 (Aug. 19, 1977), the standard was drafted 37 years ago as a “minimum requirement” to “allow for social interaction between captive animals, as well as *meeting basic needs for freedom of movement, exercise, and turning space.*” *See* Marine Mammal Comm’n, MARINE MAMMAL MAINTENANCE STANDARDS AND GUIDELINES at 6 (GUIDELINES AND COMMENTS) (1975) (emphasis added) [hereinafter “Ex. 28”]⁶. Moreover, in 1975, when this “minimum” standard was first developed, the Marine Mammal Commission repeatedly emphasized that it was “based upon the best available information on [the] biological needs of captive marine mammals” *that existed in 1975* and that such standards would need to be modified “based upon information gained from experience” and “as additional information concerning better practices becomes available.” *Id.* at 2–3.

Since then, the state of scientific knowledge about whales and dolphins, including their advanced and complex intelligence, their biological, social, and psychological needs, and their long-distance travel patterns, has increased exponentially. *See* Lori Marino et al., *A Claim In Search of Evidence: Reply to Manger’s Thermogenesis Hypothesis of Cetacean Brain Structure*, 83 BIOLOGICAL REVIEWS 417, 418 (2008) [hereinafter “Ex. 29”] (citation omitted) (the size of an orca’s brain relative to an orca’s body is second only to humans); Camilla Butti et al., *Total Number and Volume of Von Economo Neurons in the Cerebral Cortex of Cetaceans*, 515 THE JOURNAL OF COMPARATIVE NEUROLOGY 243, 258 (2009) [hereinafter “Ex. 30”] (orcas possess a specialized neuron (von Economo neuron or ‘spindle neuron’) found in humans and

⁵ While these documents reference “disregarding” and “waiving” the concrete work station in Lolita’s tank, there is no provision of the regulation that permits the agency to simply ignore a large obstruction in calculating the *minimum* horizontal dimension.

⁶ This citation, page 6 of the Guidelines and Comments, is page 37 of the Exhibit.

other large-brained mammals in brain regions believed to subserve aspects of higher cognitive abilities in humans); Luke Rendell & Hal Whitehead, *Culture in Whales and Dolphins*, 24 BEHAVIORAL AND BRAIN SCIENCES 309, 320 (2001) [hereinafter “Ex. 31”] (transmission of dialects and other learned behaviors from generation to generation is recognized as a form of culture, unrivaled by any species other than humans); *id.* at 323 (orcas are highly dependent on their parents and other members of the social group to transmit foraging and other necessary behaviors).

In fact, we now know that the orca brain is “among the largest and most complex of all mammals” and “*shows all the hallmarks of a brain that has undergone strong selection for the evolution of complex cognitive and social/emotional processes.*” See Ex. 27 at ¶ 5; see also *id.* ¶ 7 (orcas “have adapted, over ten millions of years, to long distance travel and extended family lives in complex societies”); Ex. 16 ¶¶ 12, 18 (orcas have a “biological need to travel long distances” and “are adapted for swimming extended distances and durations”).

Despite the significant advancements in the last four decades concerning the biological needs of orcas, the USDA has kept the same outdated standard in place regarding the minimum size of an acceptable enclosure. See Declaration of David Hancocks, Zoo Design and Planning Consultant, ¶ 11 [hereinafter “Ex. 32”] (the USDA’s standard is not “sufficient to provide this particular species with adequate room to engage in species typical behavior, or to in any way approach mimicking its natural environment”). It is therefore especially egregious that Lolita’s enclosure fails to meet even this clearly antiquated standard. See *id.* ¶ 11 (“[E]ven by the USDA’s own minimum standards, Lolita is being maintained in a space that is woefully inadequate.”). Lolita’s “habitat,” this impermissibly small tank, is clearly curtailed, satisfying the first of the five listing criteria.

b. Lolita Is Denied Adequate Shelter

The USDA regulations specify that “[n]atural or artificial shelter which is appropriate for the species concerned, when the local climatic conditions are taken into consideration, shall be provided for all marine mammals kept outdoors to afford them protection from the weather or from direct sunlight.” 9 C.F.R. § 3.103(b). The tank in which Lolita is kept is completely exposed to the hot Miami sun and provides no opportunity for Lolita to shield herself during the most intense heat of the day. See, e.g., Photos of Lolita in Tank [hereinafter “Ex. 33”]. Moreover, because the tank is only 20 feet deep at its deepest point, Lolita is denied the opportunity to dive deeply to protect herself from the ultraviolet rays of the sun or to seek cover from a tropical storm—an event that occurs regularly in Florida. See Ex. 13 ¶ 13; Ex. 16 ¶ 22 (Lolita “is prevented from diving deep”); *id.* ¶ 24 (“[t]he lack of shelter is also an issue” because Seaquarium “lies within the ‘hurricane belt’”); see, e.g., ROBERT W. BAIRD ET AL., NMFS, NATIONAL MARINE MAMMAL LABORATORY, STUDIES OF FORAGING IN “SOUTHERN RESIDENT” KILLER WHALES DURING JULY 2002: DIVE DEPTHS, BURSTS IN SPEED, AND THE USE OF A “CRITTERCAM” SYSTEM FOR EXAMINING SUB-SURFACE BEHAVIOUR 3 (2003) [hereinafter “Ex. 34”] (orcas regularly dive depths of over 100 and even 200 meters).

Killer whales exposed to ultraviolet rays suffer from sunburn, see JOHN S. JETT & JEFFREY M. VENTRE, KETO AND TILIKUM EXPRESS THE STRESS OF ORCA CAPTIVITY 5 (2011) [hereinafter Ex. 35], as has certainly been the case with Lolita. See Ex. 13 ¶ 3 (Lolita’s “back was often

sunburned from being exposed to the Miami sun, and it cracked and bled”); *see also* Ex. 16 ¶ 21 (“lack of protection from the sun for Tokitae/Lolita” is a serious issue because it can result in “sunburn . . . and other adverse skin damage”). Ultraviolet radiation exposure is also a factor in the development of cataracts, especially in low latitude environments with elevated sun exposure, such as Miami. *See* Ex. 35 at 5. Exacerbating the health impacts, “water in orca tanks is shallow and clear, offering no natural protection from the sun’s harmful rays,” whereas “free-ranging orcas spend most of their time at higher latitudes, in darker water, and at greater depths.” *Id.*; *see also* Ex. 16 ¶ 23–23. In addition, “[i]n the medical community it is also accepted that UV radiation can act as an immunosuppressant and can cause retinal damage, among other physiological risks.” Ex. 35 at 5. Lolita’s “habitat,” which exposes her to harmful UV radiation, is clearly modified, satisfying the first of the five listing criteria.

c. *Lolita Is Deprived of Adequate Social Housing*

Seaquarium does not comply with the AWA’s social housing requirements. USDA regulations require that marine mammals, if known to be “primarily social in the wild,” “must be housed in their primary enclosure with at least one compatible animal of the same or biologically related species” unless the veterinarian believes it is not in the animal’s best interest. 9 C.F.R. § 3.109.

There is no question that SRKW orcas are extremely “social in the wild.” As orca expert Dr. Marino, Senior Lecturer in Neuroscience and Behavioral Biology at Emory University, states, orcas “depend highly upon social interaction and support . . . for normal development,” and “[m]ovement and travel in social groups is one of the most essential components of orca life. . . . [Orcas] form complex societies with dynamic social roles in intricate social networks with cultural traditions.” Ex. 27 ¶¶ 4–5.

Although Lolita had the company of Hugo—a SRKW captured in 1968 in the waters of Washington State—for the first 10 years of her life at the facility, he died in 1980 and she has been without any orca or biologically related companion to provide her with the interaction and stimulation fundamental to her physical, social, and psychological well-being for the past 32 years. *See* Ex. 16 ¶ 29 (“Although [Lolita] is currently housed with two Pacific white-sided dolphins . . . this species is not an appropriate substitute with which to provide social contact.”); *id.* (“Whilst these species are members of the same taxonomic ‘Family’ (i.e., Delphinidae), in the same way that Gorilla (*Gorilla* sp.) and humans (*Homo sapiens*) are in the same ‘Family’ (Hominidae), they should not be considered ‘biologically related’ species in terms of whether the dolphins can fulfill Lolita’s need for social contact and interaction which is fundamental to the physical, social, and psychological well-being of this species.”); *id.* ¶ 30 (“orca and Pacific white-sided dolphins do not normally interact” in the wild); Ex. 27 ¶ 10 (white-sided dolphins and orcas “are not considered compatible animals”).

Given the complex lives and needs of orcas, experts agree that Lolita’s “solitary confinement, separation from her family, lack of physical activity and lack of psychological stimulation” constitutes a “*stunning level of deprivation*,” Ex. 27 ¶ 11 (emphasis added), and is “undeniably inhumane by any standard,” *id.* ¶ 15; *see also id.* ¶ 9 (when individual orcas such as Lolita “are forced to live without other members of their species, they exhibit behavioral stereotypies . . . unresponsiveness, excessive submissiveness, hyper-sexual behavior, self-inflicted physical trauma and mutilation . . . stress-induced vomiting . . . compromised immunology . . . and

excessive aggressiveness toward cetaceans and humans”); Ex. 16 ¶ 32 (“The adverse effects, both physically and psychologically, are substantial.”). “The simple truth is that, with the exception of feeding and veterinary care, Lolita . . . *does not even have one of her many physical, psychological and social needs met.*” Ex. 27 ¶ 11 (emphasis added); *see also* Lori Marino & Toni Frohoff, *Towards a New Paradigm of Non-Captive Research on Cetacean Cognition*, 6 PLOS ONE e24121, 3 (2011) [hereinafter “Ex. 36”] (the physical constraints of tanks “limit physical exercise and are often harmful in other ways to the cetaceans’ distinctive physiology,” degrading autonomy, causing boredom, inducing frustration, lead to the display of “physiological and behavioral abnormalities indicative of psychological distress and emotional disturbance”). Lolita’s “habitat,” which deprives her of social stimulation, is clearly curtailed, satisfying the first of the five listing criteria.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

1. The SRKWs Were Overutilized for Commercial Purposes

As for the second ESA Section 4 listing factor, the agency found that harassment by commercial and recreational whale watching vessels remains a concern and that “[t]he capture of killer whales for public display during the 1970s likely depressed their population size and altered the population characteristics sufficiently to severely affect their reproduction and persistence.” 70 Fed. Reg. at 69908. As thoroughly discussed in NMFS’ recovery plan for the SRKWs, from 1962–1977, between 275 and 307 whales were captured in Washington and British Columbia. *See* Ex. 1 at 50. Orca captors would locate orca pods from the air, drive them into bays with boats and underwater explosive devices, and the set nets quickly across the bay’s entrance or around the pod, where they “were held for several days or longer, which allowed them to calm down and be sorted for retention or release.” *Id.* at 50. “Puget Sound was preferred as a capture site because it offered fewer escape routes and a number of bays with shallower waters, both of which aided netting efforts.” *Id.* Given that the SRKWs frequently occupy those waters, they were “the most heavily affected population,” with 36 orcas retained for captivity in aquaria and marine parks and at least 11 dying during capture. *Id.* at 52. There were an additional 176 to 209 captures—including many individuals who were subjected to the stressful capture more than once—who were released because of the relatively limited ability to handle and transport them and the hunters’ preference for adolescents. *See id.* at 51–52.

The Southern Resident population was unable to recover to the pre-capture high of 96 members until 1993—more than two decades after the peak of the captures. *Id.* (citation omitted). At the time of the initial listing petition, the total population of the Southern Residents was 84 individuals. *See* CENTER FOR BIOLOGICAL DIVERSITY, PETITION TO LIST THE SOUTHERN RESIDENT KILLER WHALE (*ORCINUS ORCA*) AS AN ENDANGERED SPECIES UNDER THE ENDANGERED SPECIES ACT 7 (May 1, 2001) [hereinafter “Ex. 37”]. As of October 2007, the SRKW community was reported to have increased slightly to 87 members: 17 mature males, 23 reproductive females, 13 postreproductive females, 15 juvenile males, 13 juvenile females, and 6 immature animals of unknown sex. *See* Ex. 1 at 62 (citations omitted). As of July 1, 2012, the population has again dropped to 85. *See* Ex. 4.

Although there have been no recent “requests or authorizations for removals of Southern Residents” from the wild, and NMFS has “made progress in addressing overutilization of Southern Residents by developing regulations to reduce vessel disturbance,” the agency found that these improvements are not sufficient to strip the SRKW of the protection of the ESA. Ex. 25 at 14.

2. *Lolita’s Entire Existence Is Exploited for Commercial Gain*

While the SRKW population suffers the lingering effects of their depletion for captive display, the impact on Lolita is far more direct and devastating. Every moment of her life is spent in service of Seaquarium’s commercial gain. Lolita is on display 365 days a year and performs two shows daily. Her shallow tank is the smallest orca tank in North America. She has no opportunity to forage for live fish or socialize with other orcas. *See* Ex. 16 ¶¶ 26, 28–30. Without the protection of the ESA, Lolita is destined to be deprived the ability to engage in natural species-specific behaviors, subjected to atrocious conditions, and forced to perform unnatural tricks until she dies.

C. **Disease or Predation**

Regarding the third listing factor, NMFS has noted that while disease is not known to have caused the decline in SRKWs, “high contaminant levels may be affecting immune function in the whales, increasing their susceptibility to disease,” which is particularly problematic given “[t]he cohesive social structure and presence of all whales in a localized area at one time.” 70 Fed. Reg. at 69908. In its five-year review, the agency found that it could not “[e]nsure that diseases and their effects on reproduction and survival are not a threat to the sustainability of the [SRKWs],” as additional information and knowledge is needed “to determine that disease is not limiting recovery.” Ex. 25 at 15.

Lolita is vulnerable to a number of diseases unique to captivity. For instance, because she spends more time at the surface of the water than free ranging orcas, she is at risk for contracting West Nile, which is spread by mosquitoes. *See* John Jett et al., *Evidence of Lethal Mosquito Transmitted Viral Disease in Captive Orcinus orca* (Apr. 2012) [hereinafter “Ex. 38”]. Her time at the surface also exposes her to more UV radiation than she would receive in the wild. UV radiation exposure leads to the development of cataracts, especially in low latitude environments like Miami. Ex. 35 at 5. UV radiation can also act as an immunosuppressant, leaving Lolita vulnerable to illness generally. *Id.*

Captive orcas also commonly suffer dental infections, which are dangerous if left untreated. *See* Ex. 35 at 2–3. Lolita is no exception. Her dental issues, which date back to at least 1994, caused her to be unable to be forced to perform nearly a week’s worth of shows in March 2011. *See* CBS Miami, *Toothache Gone, Lolita’s Killer Whale Show Goes On* (Mar. 10, 2011), available at <http://miami.cbslocal.com/2011/03/10/lolita-recovers-from-toothache-killer-whale-show-goes-on/> [hereinafter “Ex. 39”]. Although Seaquarium downplayed the incident, describing Lolita’s medical issue as a “toothache,” *id.*, “poor dentition can lead to a host of diseases including valvular heart disease, gingivitis, pneumonia, stroke, and heart attack.” Ex. 35 at 2.

Although Lolita has survived four decades in captivity, that “certainly does not mean that she is not suffering.” Ex. 27 ¶ 8. Her endurance does not make captivity any less stressful or unnatural. Orcas are apex predators who are “highly social,” “far-ranging,” and “psychologically and culturally complex.” *Id.* ¶¶ 4, 7. Their brains contain specialized neurons associated with “higher cognitive abilities” including “social and emotional cognition, awareness, and intuition.” *Id.* at 5. As a result, orcas are “highly vulnerable to psychological and physical harm in captivity,” and they suffer, like humans, “many of the same stress-related diseases and abnormalities.” *Id.* at 7. These include “ulcerative gastritis, perforating ulcer, cardiogenic shock and psychogenic shock,” all of which have been listed as the cause of death for other captive cetaceans. *Id.* at 9. In the wild, Lolita would swim up to 100 miles a day, foraging for live prey, and socializing with her family. Ex. 35 at 5. In captivity, she swims in small circles, eats frozen fish, and has not seen another orca for 32 years. Deprived of the basic elements of orca life, Lolita “must certainly be lonely, bored, and, unhappy.” Ex. 27 ¶ 14. Her “too-small, featureless, barren tank . . . is the equivalent to sensory deprivation on many levels.” Ex. 16 ¶ 14. Her social deprivation “is synonymous to abuse.” *Id.* ¶ 28. Lolita’s stereotypic behaviors are evidence of her psychological suffering. Ex. 16 ¶ 31. This suffering, in turn, could lead to her death.

D. The Inadequacy of Existing Regulatory Mechanisms

Assessing the fourth listing factor, NMFS concluded that “[c]urrent levels of contaminants in the environment” both regulated and unregulated, “indicate that previous regulatory mechanisms were not sufficient to protect killer whales.” 70 Fed. Reg. at 69908. In finding during its five-year review that this concern is still present, the agency noted that while it “has made progress in addressing impacts from vessels by developing regulations to reduce disturbance,” “[a]dditional information is necessary to evaluate the adequacy of existing regulatory mechanisms, particularly to address pollution and contaminants.” Ex. 25 at 15–16.

Moreover, the AWA is the only federal law that regulates Lolita’s captivity. Ex. 1 at 52. As discussed above, the USDA has failed to enforce even the most basic standards set forth by the regulations promulgated under AWA with respect to Lolita.

In fact, the USDA’s Office of the Inspector General (“OIG”) has criticized the USDA’s Animal and Plant Health Inspection Service (“APHIS”) Animal Care division for chronic under-enforcement of the AWA and unjustified reduction of penalties for violators. The OIG found that inspectors failed to correctly report all repeat and direct violations of the AWA and that the lack of appropriate enforcement “weakened the agency’s ability to protect . . . animals.” USDA, OIG AUDIT REPORT: APHIS ANIMAL CARE PROGRAM, INSPECTIONS OF PROBLEMATIC DEALERS 1 (2010) [hereinafter “Ex. 40”].⁷ The OIG further found that APHIS’ enforcement process was “ineffective in achieving [violation] compliance with AWA and regulations” because the agency took “little or no enforcement action against most violators.” *Id.* at 1, 2. The audit also revealed that APHIS misused guidelines to lower penalties for AWA violators by inconsistently counting violations, applying meritless “good faith” reductions, inappropriately

⁷ While this report focused on the administration and enforcement of the AWA with respect to dealers (breeders and brokers), the “major deficiencies with APHIS’ administration of AWA” identified in the report are equally pertinent. See Ex. 41, *infra*.

applying “no history of violations” reductions for violators who had previous enforcement histories, and arbitrarily reducing the gravity of violations. *Id.* at 2.

In another report, the OIG found specifically that APHIS’ Eastern Region (the region in which Seaquarium sits) “is not aggressively pursuing enforcement actions against violators of the AWA.” USDA, OIG AUDIT REPORT: APHIS ANIMAL CARE PROGRAM, INSPECTION AND ENFORCEMENT ACTIVITIES i (Sept. 2005) [hereinafter “Ex. 41”]. In addition, OIG auditors expressed serious concerns relating to the APHIS policy of offering violators a 75% discount on stipulated fines, and for offering further concessions and discounts such that penalties for violating the AWA amount to nothing more than a “*a normal cost of conducting business rather than a deterrent for violating the law.*” *Id.* at ii (emphasis added).

The complete failure of the regulatory mechanism in this case—enforcement of the AWA’s minimal requirements—has left Lolita to languish, isolated in an undersized tank, and exposed to the hot Miami sun.

E. Other Natural or Manmade Factors Affecting Continued Existence

Finally, in addressing the fifth listing factor of threats caused by other natural or manmade factors, NFMS noted in its listing decision the potentially devastating health effects of exposure to petroleum products, as the Puget Sound “is one of the leading petroleum refining centers in the U.S.” 70 Fed. Reg. at 69908.

In its five-year review, the agency found that there has been “significant progress” by developing an oil spill response plan and supporting the annual SRKW census, but “[a]dditional information is necessary to evaluate the distribution, habitat use, and potential risks to the Southern Residents in the coastal portion of their range” from any other natural or manmade factors. Ex. 25 at 16–17.

In her captivity, Lolita is also vulnerable to oil spills. Her tank is fed by natural water and faced contamination following the 2010 BP oil spill in the Gulf of Mexico. As a result, Seaquarium requested millions of dollars from BP to install a closed system. *See Carol May, Oil Spill Endangers Life of Lolita and Other Marine Mammals at Miami Seaquarium*, EXAMINER (July 13, 2010), available at <http://www.examiner.com/article/oil-spill-endangers-life-of-lolita-and-other-marine-mammals-at-miami-seaquarium> [hereinafter “Ex. 42”]. Lolita is also vulnerable to more common catastrophes, such as hurricanes and other extreme tropical weather. Ex. 16 ¶ 24. Seaquarium has no way to evacuate her, *see Orca Network, Miami Seaquarium Plagued with Problems as BP Oil Contamination Looms: Orca Whale Lolita at Risk*, www.prlog.org/10814959-miami-seaquarim-plagued-with-problems-as-bp-oil-contamination-looms-orca-whale-lolita-at-risk.html [hereinafter “Ex. 43”], and, as discussed above, her shallow uncovered tank provides no protection of its own. Ex. 35.

Lolita’s exposure to the public is another risk factor. Captive cetaceans have suffered and even died after eating objects thrown in to their pools. *See WHALE AND DOLPHIN CONSERVATION SOCIETY ET AL., BITING THE HAND THAT FEEDS, THE CASE AGAINST DOLPHIN PETTING POOLS* at 4–5 (2003), available at www.humanesociety.org/.../Biting_The_Hand_That_Feeds.pdf [hereinafter “Ex. 44”]. For instance, Winnie, an orca who died suddenly at SeaWorld San Antonio, “had ingested pieces of tile and British coins, along with nuts, bolts and other small

items that made up a roughly 12-pound mass of objects that blocked her upper gastrointestinal tract.” Orca Homepage, *Orca News 2002* (May 29, 2002), <http://www.orcahome.de/news2002.htm> [hereinafter “Ex. 45”].

Visiting crowds are not the only threat. Orcas have swallowed objects introduced by their trainers for use in public performances and training. See End Killer Whale Captivity, <http://endkillerwhalecaptivity.tumblr.com/post/28101496946/do-you-allow-me-to-translate-into-portuguese-hazards> [hereinafter “Ex. 46”] (Tekoa swallowed a plastic toy; Keiko swallowed a brass ball, a float, and a rope; Inouk swallowed a bucket; Cuddles swallowed a plastic trumpet; Kim swallowed 15 footballs; Keet swallowed a plastic ball from a target pole).

* * *

As previously explained, the agency does not need to consider any of the five listing factors discussed above. Because Lolita is biologically a member of a listed species, captive members of listed species are required to be protected by the ESA, and the statutory scheme does not permit the categorical exclusion of captive members of a listed species, Lolita must be included in the endangered listing of the SRKWs. However, under the ESA’s five listing factors, Lolita is clearly threatened by each: her “habitat” is extremely curtailed; her entire existence is exploited for commercial gain; the conditions of her captivity leave her vulnerable to disease; she has virtually no legal protection; and her exposure to the public poses a threat to her wellbeing. At the very least, the conditions establish definitively “the inadequacy of existing regulatory mechanisms” to protect Lolita—a member of the SRKWs—and she must therefore be included in the species listing.

IV. LISTING LOLITA WILL HELP CONSERVE THE WILD POPULATION

The arguments above are sufficient to support Lolita’s listing. Certainly her captivity does not provide a basis for *excluding* her from the protections of the ESA. Rather, captive members of a species are required to be protected under the ESA. Furthermore, the conditions of Lolita’s captivity independently satisfy the criteria for listing an identified species under the ESA. Although no additional argument is necessary to include Lolita as a member of an endangered species, the following section demonstrates that protecting Lolita also benefits the wild SRKWs, which furthers the goals of the ESA.

The overall purpose of the ESA is to “conserve” endangered and threatened species and the ecosystems upon which they depend. 16 U.S.C. § 1531(b)–(c). The term “conserve” means “to use . . . all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided by [the ESA] . . . are no longer necessary.” *Id.* § 1532(3). The Supreme Court recognized that “[t]he plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost,” and that this intent “is reflected . . . in literally every section of the statute.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978).

The SRKW population has been listed as “endangered,” and therefore, by definition, “is in danger of extinction.” 16 U.S.C. § 1532(6). The agency must therefore protect, at any cost, *every member of the species, because each member may be needed to play a role in saving the species*

from becoming extinct should there be a disease or other catastrophic event in the future that threatens the survival of the remaining population or prevents it from recovering.

In the final rule listing the SRKWs, NMFS stated:

The peer reviewer and others highlight the ongoing and potentially changing nature of pervasive threats, in particular, disturbance from vessels, the persistence of legacy toxins and the addition of new ones into the whales' environment, and the potential limits on prey availability (primarily salmon) given uncertain future ocean conditions. The peer reviewer correctly observed that these risks are unlikely to decline (and are likely to increase) in the future. The small number of reproductive age males and high mortality rates for this group are also a concern. And while the population of Southern Residents is not naturally large, *the intensity of the threats is increased by the small number of animals currently in the population.*

70 Fed. Reg. at 69906 (emphasis added). The number of animals currently in the population has not meaningfully changed since the listing. The total population of the Southern Residents was 84 at the time of the initial listing petition in 2001 and 85 as of July 1, 2012. *See* Ex. 37; Ex. 4. Similarly, there have been no significant changes to any of the listing criteria since the five-year status review. The SRKW DPS remains endangered. Any contribution Lolita might make to benefit her wild relatives must not be overlooked.

Lolita's current exclusion all but guarantees that she will not meaningfully contribute to the conservation of her wild relatives. At the Seaquarium she is isolated, so researchers cannot study her use of language or her role in orca culture. She is unable to move naturally, so researchers would learn little about her behavior. She cannot forage, so her dietary preferences are artificial. Without the protection of the ESA, Lolita will contribute only to Seaquarium's profits. As the only captive SRKW, Lolita provides unique opportunities for research. Her isolation squanders these opportunities and thwarts the spirit and intent of the ESA.

Scientists currently subject the wild SRKW to research designed to guide and improve conservation and recovery efforts. These studies, none of which involve harms or harassment as severe as Lolita suffers,⁸ aim to determine which of the three pervasive threats—prey scarcity, acoustic pollution, or legacy toxins—is most damaging to the SRKW recovery. Lolita's value to

⁸ Lolita is harassed and harmed by the conditions of her confinement at Seaquarium, which subject her to extreme social deprivation and increase her risk of death from disease. Once Lolita is listed, her confinement at Seaquarium would be unlawful unless otherwise permitted under the narrow exceptions of 16 U.S.C. § 1539(a)(1)(A)–(B). *See* Applicant Intervenor-Defendant Miami Seaquarium's Motion to Intervene, *Proie et al. v. Nat'l Marine Fisheries Service*, No. 3:11-cv-5955 (Jan. 25, 2012) at 10 [hereinafter "Ex. 47"] ("The Seaquarium . . . stands to have to significantly alter its care, housing and exhibition of Lolita" if Lolita is listed under the ESA.); *see also* Declaration of Arthur Hertz, Chief Executive Officer of the Miami Seaquarium, at ¶ 9, *Proie et al. v. Nat'l Marine Fisheries Service*, No. 3:11-cv-5955 (Jan. 24, 2012) [hereinafter "Ex. 48"] ("Imposition of the takings restrictions of the Endangered Species Act (ESA), as compared to the federal animal welfare standards enforced by APHIS, will create substantial uncertainty regarding the care and treatment to be provided to Lolita.").

such an inquiry would be determined, ultimately, by her location. Her greatest contributions would be if she were transferred to a sea pen or released in her native waters.⁹

A. Lolita's Relocation to a Sea Pen Would Provide Valuable Research Opportunities

If Lolita were transitioned to a sea pen, her scientific utility would increase dramatically. Her actions and reactions would become more authentic as she gained the freedom to choose her own activities. The open space would allow researchers to conduct research on a larger scale. Finally, the effect of the environment itself could be studied. The research opportunities available in a sea pen are ultimately more valuable to the SRKW conservation efforts than any that available in captivity.

Lolita's captivity—followed by her release to a sea pen in her native waters or reintroduction to her pod—could provide a valuable opportunity for research designed to determine the source of SRKW contamination. Researchers theorize that the PCBs found in wild SRKWs may come from the SRKW diet; others theorize that the contaminants are in the water. *See, e.g.,* Robin W. Baird, *The Killer Whale: Foraging Specializations and Group Hunting*, in *CETACEAN SOCIETIES: FIELD STUDIES OF DOLPHINS AND WHALES* 127, 152 (Janet Mann et al. eds. 2000) [hereinafter "Ex. 50"] ("Surprisingly, levels of mercury appear to be higher in the tissues of *resident* whales than in *transients*. . . . Presumably such levels reflect consumption of heavily contaminated prey, but such prey consumption has not become apparent in the observational studies of foraging undertaken to date."). Lolita could be fed a diet meant to replicate that of her wild relatives. Researchers could monitor Lolita's contaminant levels before and after the change in her diet, calculating the relationship between the SRKWs' diet and their contamination. *See, e.g.,* Margaret M. Krahn et al., *Persistent Organic Pollutants and Stable Isotopes in Biopsy Samples (2004/2006) from Southern Resident Killer Whales*, 54 *MARINE POLLUTION BULLETIN* 1903 (2007) [hereinafter "Ex. 51"]. They could then continue to monitor contaminant levels after Lolita was transported to her native waters to determine whether the ocean water affects her PCB load. This sort of study is precisely the kind contemplated by the ESA as the information gleaned would guide decisions made about the SRKW conservation efforts.

If Lolita were transitioned to non-harmful living conditions, such as a sea pen in her native waters, Lolita could also be studied to illuminate the importance of conspecific companionship. She was observed in 1980 with her companion, Hugo, by researchers looking to understand the social significance of synchronized behavior. *See* Ex. 14. After Hugo's sudden death, the researchers returned to document the changes in Lolita's behavior, which they described as "not unlike bereavement." *Id.* at 209; *see also* Ex. 14 ¶ 10. Using the previous study as a baseline, Lolita's behavior could be observed again. After Lolita is re-introduced to other orcas from her pod, research could further reveal how orca bonds endure or how they are formed.

The wild SRKW are the subjects of nearly constant scientific inquiry as researchers attempt to collect, quantify, and analyze data points to inform the SRKW recovery efforts. Given access to Lolita under circumstances where she can swim more freely, researchers could refine their field

⁹ *See* Orca Network, *Proposal to Retire the Orca Known as Lolita to Her Native Habitat in the Pacific Northwest*, <http://www.orcanetwork.org/retirement.html> [hereinafter "Ex. 49"].

methods and calibrate their data. For example, researchers currently deploy a variety of non-invasive tools to study SRKW movements, including suction-mounted cameras, tags, and calibrating equipment. *See, e.g.,* Ex. 34; *see also* Andrew J. Wright et al., *Do Marine Mammals Experience Stress Related to Anthropogenic Noise?*, 20 INTERNATIONAL JOURNAL OF COMPARATIVE PSYCHOLOGY 274 (2007) [hereinafter “Ex. 52”]. If granted access to Lolita, researchers could test different designs to identify the least invasive equipment and the most effective deployment methods.

Similarly, researchers are forced to make assumptions about the data they collect, extrapolating, for example, information about an orca’s diet based solely off a partial fecal sample. *See, e.g.,* Robin W. Baird & M. Bradley Hanson, *Diet Studies of “Southern Resident” Killer Whales: Prey Sampling and Behavioral Cues of Predation*, Cascadia Research Collective (2004) [hereinafter “Ex. 53”]. The quality of these extrapolations would improve if compared to similar data collected from Lolita’s more controlled conditions.

Other studies have considered how certain stress hormones change in the presence of various stimuli. Lolita’s hormones could be studied to establish a baseline. *See, e.g.,* Daniel Martineau, *Potential Synergism between Stress and Contaminants in Free-ranging Cetaceans*, 20 INT’L J. OF COMPARATIVE PSYCHOLOGY 194, 208 (2007) [hereinafter “Ex. 54”] (“Pathologists faced with the task of determining the contributing factors, or the causes of wildlife mortality, rarely have clinical information such as GC circulating or fecal levels. . . . We propose that such baseline data—which could be determined on live animals, by echography or magnetic resonance imaging for instance—would help in assessing the presence of chronic stress when confronted with a declining wildlife population from which it is difficult to extract clinical data (e.g. data from live animals).”).

To learn more about acoustic pollution, Lolita’s stress hormones could be monitored before, during, and after exposure to vessel traffic. *See, e.g.,* Katherine L. Ayres et al., *Distinguishing the Impacts of Inadequate Prey and Vessel Traffic on an Endangered Killer Whale (Orcinus orca) Population*, 7(6) PLOS ONE e36842 (2012) [hereinafter “Ex. 55”].¹⁰

Lolita could also help researchers develop a response plan to help the SRKW in the event of an oil spill—a real possibility as the SRKWs are located in “one of the leading petroleum refining centers in the U.S.” 70 Fed. Reg. at 69908. For example, Lolita could participate in studies to improve hazing methods. *See* Nat’l Oceanic and Atmospheric Admin., Office of Response and Restoration, *Oil Spill Response and Killer Whales*, <http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/resources/oil-spill-response-and-killer-whales.html> [hereinafter “Ex. 57”]. Successful hazing is particularly important, as oiled SRKW are more like to perish than to strand.¹¹ *Id.*

¹⁰ Lolita could even be fitted with a camera so researchers could see for themselves if vessel traffic affects her foraging behavior. *See, e.g.,* Rob Williams et al., *Estimating Relative Energetic Costs of Human Disturbance to Killer Whales (Orcinus orca)*, 133 BIOLOGICAL CONSERVATION 301 (2006) [hereinafter “Ex. 56”].

¹¹ If the SRKWs did strand, they would require cleaning and medical care. With access to Lolita, stranding professionals would be able to improve their handling, cleaning, and post cleaning husbandry methods. *See, e.g.,* Monterey Bay Aquarium, *Research and Conservation at the Monterey Bay Aquarium* at 19 (2010) [hereinafter “Ex. 58”] (discussing the benefits of keeping captive otters: “One of the many lessons learned from the 1989 Exxon

B. Lolita's Greatest Contributions to Conservation Efforts Would Follow Her Release

Finally, Lolita's potential re-introduction to her wild pod would allow her to contribute directly to the conservation of the SRKWs. Ideally, Lolita would contribute with her genes, as it is possible that she could bear a calf.¹² If Lolita never becomes a mother, her contributions to the wild SRKW population would still be valuable, as older females play a vital role in the SRKW society. No matter how imperfect her reintegration might be, her experiences will allow researchers a valuable window into the SRKW culture.

Orcas are among the world's most social animals. They have multifaceted social lives, with complex groupings involving long-term bonds, higher-order alliances, and cooperative networks. Robin W. Baird & Hal Whitehead, *Social Organization of Mammal-Eating Killer Whales: Group Stability and Dispersal Patterns*, 78 CANADIAN JOURNAL OF ZOOLOGY 2096, 2099–2103 (2000) [hereinafter "Ex. 65"]; Volcker B. Deecke et al., *Dialect Change in Resident Killer*

Valdez oil spill response . . . is the importance of maintaining a cadre of people trained to handle affected wildlife. . . . [W]e are constantly seeking ways to improve washing techniques, post-washing care, medical management, anesthesia and captive nutrition.”).

¹² Seaquarium's contention that Lolita is no longer fertile may be incorrect. See Declaration of Dr. Magdalena Menchaca at ¶ 9, *Proie et al. v. Nat'l Marine Fisheries Service*, No. 3:11-cv-5955 (Jan. 23, 2012) [hereinafter "Ex. 59"] (After attempting “for a period of time” to induce ovulations, “Lolita did not maintain adequate progesterone levels to support a pregnancy.”). Captive orcas have been found to be “polyestrus with *periods of cycling interspersed with individually variable noncycling (presumed anestrous) periods ranging from 3–16 months.*” Deborah A. Duffield et al., *Killer whale (Orcinus orca) Reproduction at Sea World*, 14(5) ZOO BIOLOGY 417, 417, 423-24, 428 (1995) (emphasis added) [hereinafter "Ex. 60"]. If Lolita's fertility study spanned less than 16 months, the results may show only that Lolita was noncycling, not infertile. Further, attempts to induce ovulation in dolphins are successful only about half the time. See Todd R. Robeck et al., *Estrous Cycle Characterisation and Artificial Insemination Using Frozen–Thawed Spermatozoa in the Bottlenose Dolphin (Tursiops truncatus)*, 129 REPRODUCTION 659, 660 (2005) [hereinafter "Ex. 61"] (only 13 of 27 attempts to induce ovulations in bottlenose dolphins were successful).

In addition, dolphins “have varying seasonal reproductive activity, ranging from polyestrous, seasonally polyestrous, to anestrous for one to two year intervals.” *Id.* at 660 (citations omitted). Even where such a time can be accurately identified, frequent monitoring is necessary to detect the surge of luteinizing hormone (LH), which is critical to determining the time of ovulation. See, e.g., James S. Kesner et al., *Detecting Pre-ovulatory Luteinizing Hormone Surges in Urine*, 13(1) HUMAN REPRODUCTION 15 (1998) [hereinafter "Ex. 62"] (“Detection of the midcycle surge release of luteinizing hormone (LH) is critical clinically and epidemiologically for determining the time of ovulation per se, for evaluating the normality of menstrual cycle function, and as an anchor for determining the preimplantation period.”). For orcas specifically, “even twice-daily sampling (i.e. at 12 h intervals) may be insufficient for quantifying the LH surge.” Ex. 61 at 670. If Lolita's hormones were not sampled more frequently than every 12 hours, Seaquarium's conclusions may be misinformed.

Anecdotal evidence also suggests that Seaquarium's assertion may be mistaken. At approximately 48, Lolita is near the age at which other members of the SRKW population have given birth. In 1962, Neah, a 45-year-old member of the SRKW J pod (J9, 1917-1985), gave birth to Tahoma (J10, 1962-2000). See, e.g., Cetacean Cousins, *Southern Resident Orcas*, <http://www.cetacousin.bplaced.net/wild/main/sresident.html> [hereinafter "Ex. 63"]. In 1991, the 45-year-old L4 (1949-1996) gave birth to L86. *Id.* In fact, one female was recorded as having reproduced at approximately 51 years of age. See Hal Whitehead & Janet Mann, *Female Reproductive Strategies of Cetaceans: Life Histories and Calf Care*, in CETACEAN SOCIETIES 219, 233 fig.9.11 (Mann et al. eds. 2000) [hereinafter "Ex. 64"].

Whales: Implications for Vocal Learning and Cultural Transmission, 60 ANIMAL BEHAVIOUR 629, 629 (2000) [hereinafter “Ex. 66”]. Orcas engage in many complex social, communicative, and cognitive behaviors, including learning-based cooperative hunting strategies and cultural variation among pods and generational transmission of unique cultural traits. *See generally* Ex. 31 at 309.

Orcas’ social lives are culturally different through not only their group structures, cohesiveness, and function but also their call types and a wide range of other behaviors. *See id.* *See also* Suzanne Beck et al., *The Influence of Ecology on Sociality in the Killer Whale (Orcinus orca)*, 23 BEHAVIORAL ECOLOGY 1, 7–8 (2011) [hereinafter “Ex. 67”]; Volcker B. Deecke et al., *The Structure of Stereotyped Calls Reflects Kinship and Social Affiliation in Resident Killer Whales (Orcinus orca)*, 97 NATURWISSENSCHAFTEN 513 (2010) [hereinafter “Ex. 68”]. When a current recording of the SRKW population was played to Lolita in 1996, she clearly recognized and responded to the calls notwithstanding that she had been confined at Seaquarium for over two decades at the time. Orca Network, *Lolita’s Life Today*, <http://www.orcanetwork.org/captivity/lolitatoday.html> [hereinafter “Ex. 69”]. It can be inferred that there is a high likelihood that she can recall other cultural traditions from her time in the ocean and with her pod. Lolita’s return to her wild relatives would thus provide evidence of her enduring long-term memory and the durability of the SRKW culture.

Within the SRKW culture, older females are particularly valuable. Orcas are one of the “few species [that] show clear evidence of menopause, defined . . . as termination of reproductive function well before expected age of death.” Ex. 64 at 231; Ex. 31 at 323. Like only humans and short-finned pilot whales, female orcas may live decades after the birth of their last offspring. Ex. 31 at 323. In fact, according to a recent study of the Southern and Northern Resident populations, “Resident killer whales have the longest postreproductive life span of all nonhuman animals.” Emma A. Foster et al., *Adaptive Prolonged Postreproductive Life Span in Killer Whales*, 337 SCIENCE 1313 (2012) [hereinafter “Ex. 70”]. The study, in which the researchers examined the consequences of a mother’s death on offspring survival, found that the death of a postreproductive mother increases the mortality risk in offspring by nearly 14 times in the year after their mother’s death. *Id.* In fact, upon the death of a matriarch, adult male residents sometimes “move in” with their sisters or an older female. *See* Naomi Rose, *The Social Dynamics of Male Killer Whales, Orcinus Orca, in Johnstone Strait, British Columbia* at 65 (1992) (unpublished Ph.D. dissertation, University of California Santa Cruz) (on file with author) [hereinafter “Ex. 71”]. Lolita’s return to her wild community could thus help prevent the loss of a younger orphaned member.

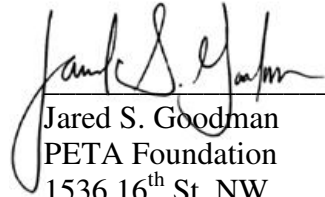
Lolita, if protected, could contribute significantly to vital research needed to sustain the wild SRKW population. If she remains excluded, Lolita will only contribute only to Seaquarium’s profit margin.

CONCLUSION

Above all else, Lolita’s unique genetic heritage mandates that she be included in the listing of this endangered species. Her exclusion from the ESA serves only one purpose: it impermissibly protects the commercial interests of the for-profit Miami Seaquarium. In contrast, as

demonstrated herein, Lolita's listing would assist in the protection and recovery of the endangered SRKW in myriad ways.

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EXHIBITS

- Ex. 1 NATIONAL MARINE FISHERIES SERVICE, RECOVERY PLAN FOR SOUTHERN RESIDENT KILLER WHALES (*ORCINUS ORCA*) (2008)
- Ex. 2 GARY J. WILES, WASH. DEPT. OF FISH & WILDLIFE, WASHINGTON STATE STATUS REPORT FOR THE KILLER WHALE (Mar. 2004)
- Ex. 3 Declaration of Shelby Proie
- Ex. 4 Center for Whale Research, *Research*, <http://www.whaleresearch.com/research.html>
- Ex. 5 Orca Homepage, *Orcas in Captivity*, <http://www.orcahome.de/orcastat.htm>
- Ex. 6 Orca Homepage, *Deceased Orcas*, <http://www.orcahome.de/orcadead.htm>
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- Ex. 14 Roger D. Ray et al., *Behavioral and Respiratory Synchronization Quantified in a Pair of Captive Killer Whales*, in BEHAVIORAL BIOLOGY OF KILLER WHALES 187, 209 (Alan R. Liss, Inc. 1986)
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- Ex. 22 Declaration of David J. Hayes, Deputy Secretary for the Department of the Interior, *Safari Club v. Salazar*, No. 1:11-cv-01564, at 4 (Sept. 6, 2012)
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- Ex. 26 USDA, Whale Stadium Dimensions
- Ex. 27 Declaration of Dr. Lori Marino, Senior Lecturer in Neuroscience and Behavioral Biology, Emory University
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- Ex. 34 ROBERT W. BAIRD ET AL., NMFS, NATIONAL MARINE MAMMAL LABORATORY, STUDIES OF FORAGING IN "SOUTHERN RESIDENT" KILLER WHALES DURING JULY 2002: DIVE DEPTHS, BURSTS IN SPEED, AND THE USE OF A "CRITTERCAM" SYSTEM FOR EXAMINING SUB-SURFACE BEHAVIOUR (2003)
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