To: National Marine Fisheries Service

From: Magdalena Rodriguez, DVM.

RE: Petition to include Lolita in the SRKW DPS – Comments in Response to Proposed Rule

DATE: March 28, 2014

I. INTRODUCTION/BACKGROUND

This is a comment letter urging that the killer whale Lolita not be included in the Distinct Population Segment (DPS) of the Southern Resident Killer Whales. The DPS has a current population of 81 using the best available science. I have been clinically involved with cetaceans for over 20 years and have been Lolita's attending veterinarian of record since 1997. I have been monitoring and managing her health care for 17 years. Although I am employed by Miami Seaquarium, I am submitting these comments on my own, because of my relationship with Lolita as her veterinarian, and not on behalf of Miami Seaquarium.

I support the initial 2005 decision not to include Lolita in the DPS and disagree with the petition to include her in the DPS. We have never questioned the past but have also not analyzed it thoroughly to determine if she originated from the Southern Resident population.

We always looked to her present-day care and her future preventative management. Is she part of the DPS (population of 81) as per the Endangered Species Act? To make my comments, I have thoroughly taken a clinical analytical approach to this because as I feel there is fork in the road of her life here and one side could ultimately lead to her death, just like the wrongfully released dolphin named Buck. I was the veterinarian who endoscoped Buck (one of the Sugar Loaf dolphins that was illegally released in the Florida Keys)[25] just before he died.

II. LOLITA DOES NOT SHARE BEHAVIORAL OR CULTURALTRAITS OF ANY KILLER WHALE CLAN

A considerable amount of scientific data was used to create the Southern Resident Killer Whale DPS. Most of it, however, does not support the placement of the individual whale Lolita within that DPS. With respect to the specific list for the DPS characterization for discreetness and significance, Lolita does not match the behavioral and cultural traits of any killer whale clan, and we do not know if she ever matched those for the DPS.

A. Food

For Survivability and Fecundity, the Southern Resident Killer Whale Status Review of 2013 covered one paper, Ward 2013. In this paper, the DPS population was extensively correlated to its food source, Chinook salmon.[22] The Northern residents were compared, and no other ecotypes were mentioned. The paper emphasized the importance of the Chinook choice of food source of the DPS population. It did an excellent job of correlating the food source variable by comparing the population to the amount of salmon available, and projected models for recovery and or extinction. We do not know if Lolita when in the wild in the 1960s preferred Chinook salmon or something else. We do know Lolita's present diet at the Miami Seaquarium. Lolita has been on a diet of 55% pink salmon for four decades. Physiologically, therefore, her nutritional status is different from that of the DPS population. We have added herring and capelin to allow for different food sources, unlike the DPS population which sometimes chooses to eat only Chinook even when other types of salmon are present, and may choose not to eat at all if no Chinook are present. Other killer whales have been observed to eat a different food source when their original source isdepleted.[16] She is surviving very well on this diet, and exhibits consistent blood parameters, girth, and activity levels. Thus, we can state she is not dependent on the Chinook Abundance Number for survival.

B. Social Structure and Culture:

We do not know if Lolita's social structure and culture match that of the DPS. We only know that she was captured off the coast of Washington State on a specific day. It has been stated that the DPS is a grouping of three strong matriline pods (J, K, and L pods) collectively making up a clan. (Ford and Ellis 2004).[10] This isolation of that population has been concluded to be cultural.[15] We neither know how social she may or may not have been towards individuals present in that area, nor do we know her matriline.[11] Very few members remain.

Regardless of whether or not she specifically socialized with any of those who now are left, she is not part of the DPS social structure now. We do not know if L pod whales were captured on the day Lolita was captured because Bigg only reports that L pod whales were sighted near the area. [4,5]

One paper was reviewed for morphology of the DPS population. Morphologically her saddle patch does not readily match the majority of the saddlepatches of the DPS area 3, and it is not even close to her legendary mothers L25 and L12.[3] It does, however, match the majority of the saddle patches of the Alaskan and Bering Straits residents who share a haplotype with the southern residents. [3] A study was used that had data on diving for the DPS (Baird and Hanson 2005).[2] We do not know if Lolita had this same diving behavior or that of another group. A paper was reviewed for the DPS that documented different greetings amongst different groupings of killer whales (Osborne 1986).[19] The DPS population had a specific greeting that was illustrated. We do not know if Lolita knows that greeting, can do that greeting, or would recognize that as a greeting. We have not observed that greeting in her.

C. Foraging:

Foraging behavior for the DPS is an additional point not considered in the brief discussion of Lolita in the Status Review. "Foraging and other behavioral characteristics such as

distinct vocalizations may be learned and therefore are not good indictors of species status." (Barrett-Lennard and Heise 2004).[11] Foraging has been weakened by more recent findings of other ecotypes of killer whales eating fish.[8,9,13,20] Applying this category to the individual would weaken it even further because Lolita has never been observed or documented to forage, and her teeth were too young to extrapolate from tooth wear.[10] Lolita is fed a very specific diet that is analyzed for macronutrients, cultured for microbes, cut into specific sizes, and prepared under a specific protocol with precise caloric intake monitored and managed. The experiment of Keiko proved that a Killer whale under the care of humans for two decades would not revert to its natural foraging behavior.[23] There have been other experiments of long term animals being released and not reverting to their natural foraging behavior.[25] Lolita has been under human care for over 40 years. Not only has she not foraged in that time, but we do not know if she ever did and, if so, what her prey was. Live fish have been shown to be negative to her because she swims away from them.

D. Acoustics:

The status review is further weakened because scientifically there is no statistically significant data that whatever acoustics may have been opportunistically taken on Lolita are from the L pod population. Lolita seldom vocalizes with the frequency that has been ascribed to the DPS, and her vocal repertoire has never been scientifically collected, analyzed and published in a peer reviewed paper. The review process covered an extensive amount of science. In applying the multitude of findings in the status review papers to the individual and I do not believe it supports the conclusion that she is part of the DPS. Additionally, the facility does not have any written research protocol that acoustics were ever taken on her properly for sound and statistical analysis and have not seen any published paper indicating as such. Killer whales, and cetaceans for that matter, are amazing at learning vocal sounds and mimicking. Was L98 Luna (the

juvenile killer whale that died alone by a propeller) a tugboat because she made calls that sounded like a tugboat?[24]

III. DEMOGRAPHIC DISCRETENESS AND RANGE

Demographic discreetness and range of the DPS are addressed.[12] As in the Status Review, Range continues to weaken the position of this DPS population as more recent studies from satellite tagging shed new light (and surprising scientists) on the movements of these DPS killer whales.[17] Also, it is now known that the northern range of the southern residents is Chatham Strait in SE Alaska.[12] Marine mammals throughout the world have surprised scientists on their travels.[14,18,26,27] Krahn 2004 exhibited a major individual scenario from a DPS killer whale member. The census was marked at 78 for the population in 2002 but had to be revised for an individual (a juvenile, L98 Luna) that had left its mother and was observed at a distant place where L pod had not previously been documented. The mother was still alive, but returned to the DPS area without her offspring. The calf did not survive alone. Luna died by getting hit by a tugboat propeller because she followed vessels. Alloparenting has been documented in killer whales.[21] In Norway it was even surprisingly males that would take the young for long excursions.[6] It was not known if alloparenting played a role with L98 Luna, but it can be addressed from Lolita's hypothesized mothers.[11]

The capture of Lolita along with 79 other killer whales in August, 1970 (most were only temporarily captured and immediately released) was associated with a specific time frame and location that had an anomalous count for the modeled data (Bigg 1975).[1,4] Bigg also documents other whales nearby. The total number of whales in the area were too high for the modeled data of SRKW population. So non-SRKW whales must have been included in the capture. Sometimes more than two clans (populations) are in the same area, sometimes referred to as a "superpod." One example of such a multiple Clan union was observed in July 2001. A large

group of killer whales that contained whales from Southeast Alaska, Gulf of Alaska, and the Bering Sea was seen just south of Kodiak Island (Krahn 2004). There has been no photograph or video of Lolita. Of the scant photos, L pod whales were photographed near the operation but apparently not in the net (Bigg 1982). [5] There was also an anomalous event in the neighboring seas (SSQueenfish).[7] It brings to question if another clan (i.e. another population of resident killer whales) might have been present on that day.

There are other factors weighing against including Lolita in the DPS. Her range over the last 40 years has been 4000 miles away from the DPS population. The category of range was written to be weak in the DPS status review and continues to weaken every time an individual is found outside the range. We do not know what Lolita's range would have been. This brings to question reproductive isolation. Lolita is already reproductively isolated from the entire species of Orcinus orca physiologically by being post-reproductive, and we do not know if she would have reproduced with viable offspring within the DPS population or outside of it. Thus, we do not know if Lolita would have had the reproductive isolation that has been considered in the DPS.

IV. SURVIVABILITY OF DPS POPULATION

The two experiments proposed in the petition for her to help the survivability of the DPS population of 81 are scientifically flawed. The first, which focuses on feeding her contaminated fish to study how she incorporates it into her tissues, will not give any viable data for young, growing, and reproductive individuals. Older animals physiologically handle toxins differently from young and reproductive animals. For toxicity studies possibly affecting fecundity, it would be more beneficial to the population to look into fecal hormone testing to possibly monitor reproductive cycles and pregnancy in the wild female orcas to follow for a birth rate number than looking at any data from an older post-reproductive female. The second experiment, which

studies deterrents on her to know what other orcas will flee in case there is an oil spill, is also scientifically flawed. A live grouper fish causes Lolita to retreat to the opposite side of the pool. The study is thus not useful for the survivability of the DPS population. As her veterinarian, I believe these ill-conceived experiments are a major risk to her life, and the resulting data will not help the DPS population survivability.

V. RISK FACTORS

The risk factors for the DPS population are reduced prey, vessel traffic, and contaminants. These factors have been and continue to be extensively studied. They are what urged creating this DPS. Contaminants, vessels, and lack of prey may not have even been risk factors to the SRKW when Lolita was captured. If placed in that area, her risk factors would be stress of movement, stress of a new environment, and, if she does not know any of the killer whales there, stress of social discreetness – her own social discreetness.

V. CONCLUSION

I do not believe the best available science supports including Lolita as a member of the DPS of 81. Lolita's feeding ecology does not match that of the DPS group. Her social structure does not match that of any other killer whale. It is unknown whether her diving behavior would match that of the DPS. The greeting observed in the DPS animals in 1986 has not been observed in Lolita. Her survivability is dependent on variables different from those of the DPS. The reason for creating the DPS in the first place is not the reason that the Petitioners want to include Lolita in it. The Petitioner want to release her. DPS units are created for listing, delisting, and recovery. They are to be used sparingly, not to appease a movement that has been aggressively pursuing her release for decades. Keiko "Free Willey", Luna, and Buck were all failed

experiments that led to the death of each of these animals. One release was completely illegal. Buck (a bottle nose dolphin) was illegally released with a pool mate after a year in a "reconditioning" program in a sea pen at the SugarLoaf Dolphin Sanctuary.[25] They were taken back into the care of humans when found begging for fish. They had lacerations and were emaciated. Buck never fully recovered. Endoscopy on him just prior to his death showed he had a gallon of blood and not an inch of normal mucosa present in his stomach. Release was not approved for him, but he was placed into a situation where it allowed interested parties to do it. Keiko, "Free Willey" never foraged, was abandoned in the open ocean for 6 weeks, and also returned to humans for tactile contact and food. Sea pens do not work, and only provide a means for interested parties to functionally be able release target animals.

The debate over whether to include Lolita in the DPS, concerns an individual, an N of one, and a mortality of one would be a mortality of one hundred percent. Lolita's current social structure and activities should remain consistent for her continued health and wellbeing. At her age, any major changes may cause her harm.

Sincerely,

/s/ Magdalena Rodriguez, DVM

Magdalena Rodriguez, DVM

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