

Appendix A

Scientist Statement Supporting Research in Marine Mammal Facilities

April 8, 2016

We, the undersigned members of the scientific community, wish to acknowledge the importance of marine mammals in zoos, aquariums, and marine mammal facilities, and express our support for research conducted at these facilities. We know that critical research findings have come from studies of dolphins and related species in managed care environments, which have provided the vast majority of what is known about their perception, physiology, and cognition. This includes both basic facts about these animals (e.g., echolocation and how it works¹, diving physiology², energetics³, gestation period⁴, hearing range⁵, signature whistles⁶, and so forth) and applied information such as how they react to environmental stressors⁷ and how to diagnose and treat their diseases.⁸

The benefits of such research extend well beyond the animals in zoological facilities. The interpretation of data from field studies is directly informed by what we have learned about the cognition and physiology of these animals in managed care settings. Moreover, because science is inherently a collaborative endeavor, research findings from these animals contribute to our collective understanding across the animal kingdom. Finally, research in managed care settings impacts conservation efforts by: (a) providing the baseline information necessary to inform conservation plans and practices (e.g., typical respiration rates, metabolic rates, gestation length, hearing range and thresholds, etc.), (b) documenting physiological and behavioral responses to environmental stressors such as sound and contaminants⁷ to inform population managers, and (c) developing and testing techniques and tools for assessing animals in the field.⁹

The advances that have come from research in marine mammal facilities could not have come from studies of animals in the wild. Field studies are crucial, however, many research questions are unsuited to discovery at a distance. Studies of pregnancy, birth, and fine-scale calf development require the type of close and consistent observation that is only possible in zoological settings. The hypothesis testing required for questions about cognition, perception, and physiology requires the ability to present animals with specific situations and challenges utilizing the necessary controls, consistency, and repetition that are impossible to achieve in the wild. Indeed, as with research in any discipline, a comprehensive understanding of these animals requires a combination of both in-situ and ex-situ studies; studies based in the wild and in zoological settings. This idea is neither new nor specific to marine mammals, but is critical to the way scientific discovery works.

Sincerely,

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