

January 31, 2020

Dear Members of the Visitor Industry Task Force,

I'm an Associate Professor of Marine Biology at the University of Alaska Southeast. My area of expertise is marine mammal behavior, ecology, and conservation. Since 2012, my students and I have been studying humpback whales and whale-watching in Juneau. Juneau is one of the world's premiere whale-watching destinations. As a result, whale-watching is a vital component of Juneau's economy.

The whale-watching industry is driven by the cruise ship industry because the majority of whale-watching passengers are cruise ship passengers. As the number of cruise ship passengers increases each year, there is a tendency for more whale-watching vessels to be added to the fleet. Since the year 2000, the number of whale-watching vessels has more than tripled, increasing from approximately 20 vessels to over 65. This ever-growing industry prompted me to conduct a set of studies to determine if and how humpback whales are affected by whale-watching vessels. For the sustainability of this important industry, it is important to understand the potential impacts and how they might be lessened.

Our research (<https://www.frontiersin.org/articles/10.3389/fmars.2019.00710/full>) revealed that whale-watching vessels caused humpback whales to change their behavior. In the presence (vs. absence) of whale-watching vessels, humpback whales changed direction more frequently, swam faster, and had higher breath rates. In addition, as the number of vessels increased, humpback whales showed further increases in their direction changes and breath rate. These results indicate that humpback whales may be taking measures to avoid vessels. This increased level of activity, combined with a higher breath rate, may also indicate that humpback whales are expending more energy in the presence of whale-watching vessels.

Humpback whales spend their summers in Juneau feeding. Their goal is to eat as much food as possible to replenish energy reserves lost during their winter fast on the breeding grounds. Expending extra energy in vessel avoidance behaviors could negatively affect a whale's energy budget and, potentially, its overall health. The humpback whales in Juneau that are part of the threatened Mexican Distinct Population Segment may be particularly vulnerable to these impacts.

Not only are humpback whales important for the tourism industry, they are an important part of healthy marine ecosystems. Among other ecosystem services, humpback whales aid in nutrient cycling which forms the base of the food web. For many people, humpback whales also have a high intrinsic value.

I urge the City of Juneau to adopt a precautionary approach when considering tourism growth. The impact on humpback whales is likely just one of several environmental impacts. It is imperative that we create a sustainable visitor industry in order to protect the resources upon which our economy relies.

Sincerely,



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Note: Some of this content was taken from my *Juneau Empire* article, "The Importance of Sustainable Whale Watching in Juneau", on 7/5/2019 (<https://www.juneauempire.com/news/the-importance-of-sustainable-whale-watching-in-juneau/>). The views expressed here do not necessarily represent the views of the University of Alaska Southeast.