

## **SOCIETY FOR MARINE MAMMALOGY: SMALL GRAND IN AID OF RESEARCH (2020)**

### **Project Title**

The impact of the SAR-Cov 2 pandemic on the whale-watching activity in Puerto Pirámides (Península Valdés, Chubut, Argentina): Social and ecological aspects

Lic. Santiago José Fernández

*PhD student (UNPSJB)*

*Marine Mammal Laboratory (LAMAMA),*

*Centro para el Estudio de Sistemas Marinos (CESIMAR),*

*National Scientific and Technical Research Council (CONICET)*

*Boulevard. Brown 2915, (U9120ACD) Puerto Madryn, Chubut, Argentina*

*+ 54 0280 488-3184 (Int.1243) - + 54 9 3401 434922*

*sfernandez@cenpat-conicet.gob.ar - sfernandez882@gmail.com*

Whale watching in Patagonia began in 1973, with the Southern Right Whale (*Eubalaena australis*) as the target species. The number of visitors performing this activity has increased over the years (Chalcobsky et al. 2017). It is unknown whether the presence of an increased presence of whale-watching boats to meet current demands has changed or may be changing the distribution of whales in the area. The cessation of activities due to the SAR-Cov 2 pandemic could be a unique opportunity to assess the effect of the vessel-whale interaction. Additionally, it could be a good opportunity to analyze the socio-economic impact of the lockdown for the actors involved in this activity. We aim to assess possible changes in the distribution of whales in the area used for sighting from whale-watching vessels and to evaluate the socio-economic situation of the Puerto Pirámides citizens. For this, we evaluated the functioning of the socio-ecological system of Southern Right Whale (SRW) whale-watching in Puerto Pirámides (Península Valdés, Chubut, Argentina) in the period previous, and during SAR-Cov 2 pandemic. This will allow us to identify, contrast, and evaluate the different scenarios and/or changes that could take place due to an abrupt decrease in tourist demand.

### **Result of the project:**

To estimate the number and distribution of the whales, we carried out a total of 33 censuses from a land station during 12 surveys using a digital theodolite DGT-02, from October 13<sup>th</sup> to December 1<sup>st</sup>, 2020 (Table 1). Due to bad weather conditions and particular COVID-19 lockdown in Argentina, we were not able to start the field work on the time stipulated in the proposal. Moreover, the theodolite used during previous projects was sent to the annual maintenance and the company was delay due to sanitary measures imposed by the national government. Given this, and to avoid losing more time, with the awarded grant, a new theodolite was bought. The maximum number of whales (n= 89, Mother and a calf (MC)= 74 and Solitary individuals (SI)= 15) were censused during "Survey 2", and then, just as expected, the number of observed individuals decreased throughout the season in the surveyed area. The comparison between the obtained data in this project with the SRW distribution database (coastal flights censuses, theodolite data obtained during 2017 from the same observation point and the information from satellite-tagged whales) will be done during the second semester of 2021.

Table 1: Results of the censuses carried out from a land station to estimate the number and distribution of Southern Right Whales in Puerto Pirámides area. MC: Mothers with calves from that season, SI: Solitary individuals.

Survey		Census #			
		1	2	3	4
Survey 1 (13/10/2020)	MC	14	14	22	
	SI	5	10	5	
	<b>Total</b>	<b>19</b>	<b>24</b>	<b>27</b>	
Survey 2 (17/10/2020)	MC	74	58		
	SI	15	5		
	<b>Total</b>	<b>89</b>	<b>63</b>		
Survey 3 (20/10/2020)	MC	58	20		
	SI	9	13		
	<b>Total</b>	<b>67</b>	<b>33</b>		
Survey 4 (26/10/2020)	MC	26			
	SI	1			
	<b>Total</b>	<b>27</b>			
Survey 5 (27/10/2020)	MC	50	56	58	
	SI	6	5	11	
	<b>Total</b>	<b>56</b>	<b>61</b>	<b>69</b>	
Survey 6 (29/10/2020)	MC	42	44		
	SI	1	2		
	<b>Total</b>	<b>43</b>	<b>46</b>		
Survey 7 (30/10/2020)	MC	56	50	44	
	SI	1	-	-	
	<b>Total</b>	<b>57</b>	<b>50</b>	<b>44</b>	
Survey 8 (09/11/2020)	MC	78	70	48	
	SI	1	1	-	
	<b>Total</b>	<b>79</b>	<b>71</b>	<b>48</b>	
Survey 9 (10/11/2020)	MC	56	34	32	
	SI	1	-	-	
	<b>Total</b>	<b>57</b>	<b>34</b>	<b>32</b>	
Survey 10 (17/11/2020)	MC	26	18	38	
	SI	1	1	-	
	<b>Total</b>	<b>27</b>	<b>19</b>	<b>38</b>	
Survey 11 (21/11/2020)	MC	10	14	14	12
	SI	-	-	-	-
	<b>Total</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>12</b>
Survey 12 (01/12/2020)	MC	36	46	32	48
	SI	-	-	-	-
	<b>Total</b>	<b>36</b>	<b>46</b>	<b>32</b>	<b>48</b>

A total of 38 interviews (approximately 9% of the total population) was done to Puerto Pirámides citizens from March to June of 2021. Each interview was divided into three sections. The first section was related to demographic data, the second gathered data on socioeconomic activities

prior and during the cessation of activities due to the pandemic, and finally, the last section about the personal perception related to whales and whale-watching activity. As preliminary results, 62.2% of those interviewed commented that they worked in tourism-related companies (43.5% in whale-watching companies and 47.8% in hotels/gastronomy). Only 13% of these people received their entire salary during the pandemic, the rest suffered a reduction in their income from 30 up to 75%. Almost half (43.5%) of the people surveyed who worked with tourism have lost their jobs during the closure of activities due to the pandemic. In most cases (91.3%), they had to use their savings to be able to meet basic needs. The impact of the SAR-Cov 2 pandemic on the inhabitants of Puerto Pirámides was devastating in economic and social terms, because the population depends almost exclusively on tourism, with very few being able to undertake other economic activities. This is the first time in 48 years that the whale-watching activity is interrupted during all one season (Chalcobsky et al. 2017).

Once the statistical analyzes are completed, a report will be presented to the government authorities and talks, a manuscript will be submitted in Marine Mammal Science Journal and presentations will be organized in the city of Puerto Pirámides to comment on the results obtained. All the publications produced will have due recognition to *The Society for Marine Mammalogy*.

I would like to thank to *The Society for Marine Mammalogy* for the financial support given to this project, as well as for the trust deposited in myself and my research group (*Laboratorio de Mamíferos Marinos - CESIMAR- CCT CONICET CENPAT*).

#### **Literature cited:**

Chalcobsky BA, Crespo EA, Coscarella MA. 2017. Whale-watching in Patagonia: What regulation scheme should be implemented when the socio-ecological system is changing? *Marine Policy*. 75:165-173.