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challenges for a good management**

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One decade of whale watching in an important tourist destination in the Colombian Pacific, challenges for a good management

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Abstract

The increase in whale-watching activity worldwide has become a major threat to whales. Colombia is one of the top cetacean-watching countries in Latin America. Uramba Bahía Málaga Natural National Park is one of the most important places visited by tourists to see humpback whales (*Megaptera novaeangliae*) in Colombia. Humpback whales arrive every year between May and December to breed and rear calves. To identify the current state of whale-watching in Málaga we analyzed touristic data from 2011 to 2019. We found that whale-watching activity in Málaga has increased considerably. Whale-watchers per month increased by 108%, from 2,549 tourists in 2011 to 5,297 tourists in 2019. Additionally, monthly whale-watching boat trips increased by 140%, from 175 trips in 2011 to 420 trips in 2019. Currently there are in average 19 boat trips per day (± 18.0). Whale-watching activity is characterized by the use of small boats ($\leq 15\text{m}$). Tourists came mainly from Colombia (90%), and also from other countries of America and Europe. August was the most important month for whale watching. Although environmental education activities are undertaken, currently whale-watching recommendations are overlooked. At present, whale-watching activity in Málaga produces important economic benefits for local people and neighboring, with a monthly expenditure of \$ 362,409 USD by tourists, but to ensure the continuity of this activity, negative impacts on whales need to be minimized. Therefore, we urge environmental authorities to determine the carrying capacity of the area with relevant stakeholders and to promote a responsible tourism in the area, including: 1) following the current whale-watching recommendations strictly, 2) transit speeds below 10 knots in the whales' area, 3) use propeller-guards (specially in large boats), 4) performing watching whales from a land-based, 5) implementing the acoustic whale tourism, and 6) reinforcing the environmental education. Authorities need to strengthen the monitoring, evaluate and control this growing tourist activity. Whale-watching activity produces important economic benefits for local people and neighboring, but to ensure the continuity of this activity, environmental authorities need to control this growing tourist activity.

Key words: Humpback whale, *Megaptera novaeangliae*, tourism, conservation, Marine Protect Area, South America

Introduction

Whale watching is a growing tourism activity worldwide. Commercial whale watching began in South America in the 1990s (Hoyt and Iñíguez, 2008; Hoyt and Parsons, 2014). In Colombia, whale watching started in Bahía Málaga (Valle del Cauca) in 1994. This area is part of the Uramba Bahía Málaga Natural National Park (NNP) since August 2010. Whale-watching activities then spread to Tribugá and Cupica Gulfs (Chocó) in 1997, and Tumaco (Nariño) around 2010 (Arias-Gaviria *et al.*, 2011). Whale-watching tourism generates income and employment in coastal communities and raises awareness of whale and dolphin conservation needs (Zeppel and Muloin, 2008). In 2008, more than 13 million people took part in whale watching tours in 119 countries worldwide, generating an estimated total expenditure of USD \$2.1 billion (O'Connor *et al.*, 2009). And for the same year, in Uramba Bahía Málaga 6,663 whale watchers and 267 boat trips were registered, generating USD \$99,954 in direct expenses (only ticket expenses; Avila *et al.*, 2015). However, this activity can generate disturbance resulting in changes in behavior, collisions with boats, and pollution, which implies that their reproductive success, habitat choice and survival may be affected (Parsons, 2012; Avila *et al.*, 2015). In fact, in Málaga, in the breeding season of 2008, humpback whales changed their resting and breeding behavior with the arrival of a whale-watching boat (Avila *et al.*, 2015). Besides as humpback whales have complex acoustic behaviors producing social sounds and songs (which are associated with reproduction; Payne and McVay, 1971; Oña *et al.*, 2019), boat noise could disturb and mask this vocalization (Southall, 2005; Dunlop *et al.*, 2010). Then, the negative impacts caused by whale watching are likely a consequence of the combination of the presence of the whale-watching boats and the underwater noise they produce (Lusseau and Bejder, 2007; Weilgart, 2007; Wright *et al.*, 2007). Currently, whale watching using boats is one of the main threats to marine mammals worldwide and is affecting 58 marine mammal species -almost 50% of all marine mammals- in 82 countries (Avila *et al.*, 2018).

The humpback whale, *Megaptera novaeangliae*, is one of the species with highest touristic interests worldwide, as it is the main target species in 55% of the countries with whale watching activity (O'Connor *et al.*, 2009). Humpbacks arrive annually from May to December to Colombian waters to breed and rear their calves (Avila *et al.*, 2020), and Uramba Bahía Málaga NNP is one of the most important breeding sites of this species in Colombia, with more than 79% of the sighted pods containing calves (Avila *et al.*, 2015). Malaga's economy is based

primarily on fishing, tourism, timber extraction and subsistence farming (INVEMAR *et al.*, 2006; Escobar, 2017). One of the most important tourist attractions in the area is the humpback whale's presence, currently converting Uramba Bahía Málaga NNP in the main whale watching destination site in Colombia (Hoyt and Iníiguez, 2008; Arias-Gaviria *et al.*, 2011). However, due to fishing and whale-watching activities, and proximity to the major Buenaventura port, high boat traffic transits the Uramba Bahía Málaga, and this boat traffic and humpback whales spatially and temporally overlap (Avila *et al.*, 2017).

Since whales are known to be affected by whale-watching boats, a series of recommendations and rules have been generated for the proper observation of whales worldwide (IWC, 2020). Colombian recommendations stipulate that boats must not approach the whales closer than 200 meters; boats must approach whales slowly, in parallel and slightly from behind; boats can stay for a maximum of 30 minutes with a group of whales; up to three boats can stay simultaneously per group of whales; and boats should avoid following mothers with their calves; in addition, swimming with whales is not permitted (Avila *et al.*, 2015; MADS, 2017). Furthermore, because of the collision risk and other potential disturbance from boat traffic in this area, boat speed should not exceed 10 knots near whales and propeller-guards should be used (Avila *et al.*, 2017). Although the recommendations control whale-watching activities at Uramba Bahía Málaga, there is great concern in recent years about the increase of boats and whale watchers in the area. Besides there are scarce information in whale-watching tourism in Colombia, as there are currently few studies (e.g. Avila *et al.*, 2015; Zapetis *et al.*, 2017; Soto-Cortés *et al.*, 2021). Therefore, the purpose of the present study is to evaluate the current state of whale watching in Uramba Bahía Málaga NNP, how it has changed in time, evaluate the levels of compliance with whale-watching recommendations and identify challenges for the conservation of whales.

Materials and Methods

Research was conducted during nine breeding seasons, from 2011 to 2019 during July to October, as the whale-tourism season in Málaga is open in those months. Uramba Bahía Málaga Natural National Park lies on the Málaga bay in the Pacific coast of Colombia between 3°51'N and 3°57'N, and 77°19'W and 77°25'W, 36 km north of Buenaventura city, where is established the main commercial port of Colombia, and near at naval base ARC Bahía Málaga (Naval base) (Figure 1). It is characterized by high rainfall (6000 mm per year) and warm surface waters (25 to 27 °C) and relative humidity is 90% (Rangel, 2004). The average water depth in the study area is 30 m. The park is 100% marine, with an area of 47,094 ha (MAVDT, 2010). Málaga is characterized by a great diversity of flora, fauna and a variety of natural habitats such as rivers, marine bottoms (sand and mud bottoms, and rocky reefs), beaches, an insular system, rocky cliff areas, and the estuarine bay is bordered by mangroves (INVEMAR *et al.*, 2006). The

region has six settlements: Juanchaco, Ladrilleros, La Barra, La Plata-Bahía Málaga, Chucheros-El Tigre and Puerto España-Miramar, with a population of 4000, mainly afro-descendants, and a lesser extent by indigenous and mestizos (MAVDT, 2010; Escobar, 2017).

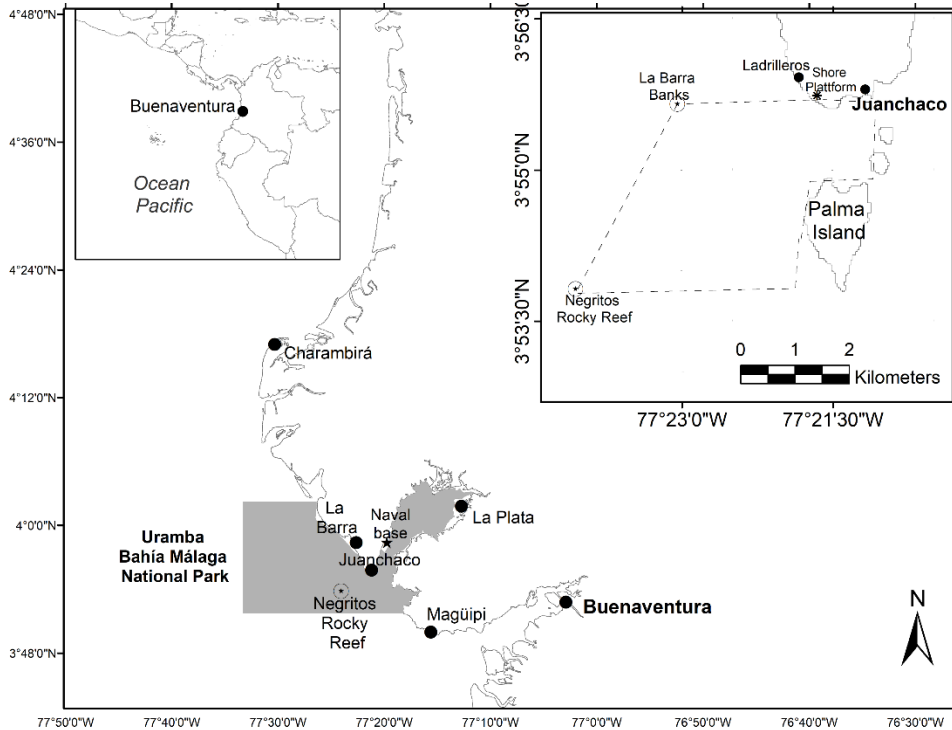


Figure 1. Study site in Urumba Bahía Málaga Natural National Park, in the Colombian Pacific, South America. The area of the Natural National Park is denoted in the shaded area. Observations were made from a shore platform between the towns Juanchaco and Ladrilleros at a height of 20 m above the mean lowest tide water level. The area of observation is shown within the dotted lines.

To identify if whale-watching boats were complying the recommendations, two Park staff members trained in whale watching made observations from a 20-meter-high shore platform using 7x50 binoculars. The effective area of observation was 14 km². The observation area was delimited by the Negritos rocky reef, La Barra sand banks and Isla Palma Island (Figure 1). The observations were conducted between 8:00h and 17:00h when conditions were optimal: no rainfall, good visibility (6 km) and Beaufort wind strength/speed less than four. From the shore platform, groups of whales followed by tourist boats were located. Whales were detected by blows or aerial behavior. For each encounter, observers recorded the approximate location of whales and boats (using the azimuth position), the time that each boat spent with a pod of whales and the speed of the boats when approaching the pods of whales. Based on Avila *et al.* (2015), the boat speed was roughly estimated in relation to the speed of whales as ‘fast’ (more than 100 m/min or >3 knots approx.), or ‘slow’ (less than 100 m/min or ≤3 knots approx.). Besides, number of boats with pods of whales was counted.



Figure 2. Uramba Bahía Málaga Natural National Park’ staff assignments during whale-watching seasons. A. Workshop with boat operators about whales and whale-watching good practices. B. Training volunteers (volunteer ranger program) in watching whales and boats from the shore platform. C. Boat operators' control before the whale-watching tour and filling of the Park’s official records. D. Pre-whale-watching tour talks to tourists. E. Observation of whales and boats from the shore platform. F. Training tourist interpreters (guides) in biology of whales and conservation actions.

During this period, to estimate the expenditures of whale-watching tourists, specifically accommodation, food and transportation, costs were obtained using the number of tourists per month, and calculated the annual cost of transport, whale watching trips, average accommodation, and average food costs. As this was a roughly estimation based on the average costs of transport, food and accommodation in the area each year, we assumed that all the persons expended similar amount of money for going whale watching. The Colombian peso (COP\$) is the unit of currency in Colombia, and we converted costs to US dollars, where \$1 US dollar is equivalent to \$3281 COP (average value for 2019; DW, 2020).

Results

Data of whale-watching activity was obtained from the Park's official reports during 36 months for July to October from 2011 to 2019 (Table 1). Whale watchers and boat trips in Uramba Bahía Málaga have increased considerably, going from 10,197 tourists in 2011 to 21,186 in 2019. Boat trips also increased, from 701 in 2011 to 1678 in 2019 (Table 1). Whale watchers per month increased by 108% in the last 9 years, from 2,549 (± 1868) tourists in 2011 to 5,297 (± 3482) tourists in 2019 (Figure 3A). Additionally, monthly whale-watching boat trips increased by 140% in the area, from 175 (± 119) trips in 2011 to 420 (± 252) trips in 2019 (Figure 3B). Currently there are in average 19 boat trips per day (± 18.0). But boat trips per day increased, from a maximum of 76 per day in 2013 to 118 per day in 2019 respectively (Table 1). The number of different boats doing whale watching increased from 64 boats in 2017 to 173 in 2019 (Table 1, Figure 3A-B). Season 2018, with 23,122 visitors and 1,792 whale-watching-boat trips, has been the year with more whale-watching activity in the last decade.

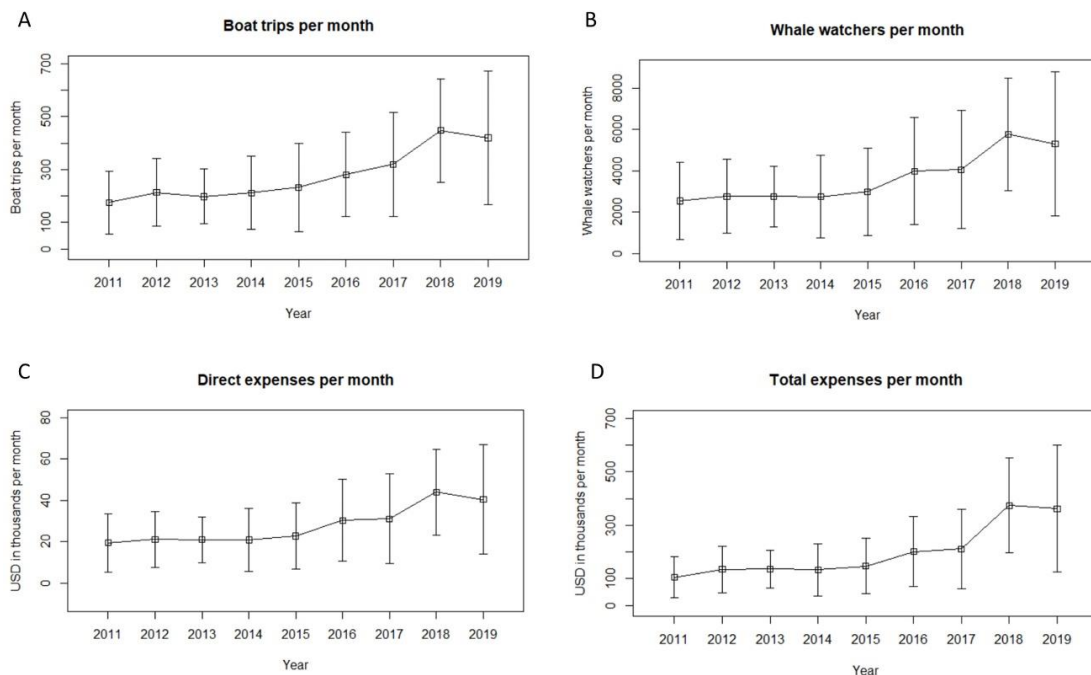


Figure 3. Whale watching activity in Uramba-Bahía Málaga Natural National Park, Colombia, from 2011 to 2019 (from July to October). A. Average number of whale watchers per month. B. Average number of boat trips per month. C. Average “direct expenses” generated by whale watching in US dollars per month (*i.e.* from ticket sales). D. Average “total expenses” generated by whale watching in US dollars per month (*i.e.* from local transport, food and accommodation for 2 days). Bars show the standard deviation.

The majority ($\geq 98\%$) of boats used for whale watching were small (≤ 15 m; Figure 4). Boats used for whale watching had been mainly remote boats ($>54.8\%$), *i.e.* from Magüipi and Buenaventura, except for 2019, which were mainly local boats (54.4%), *i.e.* from Bahía Málaga area (Juanchaco, Ladrilleros, La Barra and La Plata; Table 1). Local boats were small (~ 7 m)

typically powered by two 40 hp outboard engines, while remote boats were bigger (~15 m), and typically powered by two 100 hp outboard engines. There is a lack of a whale-watching operators' association. On the other hand, whale-watching was more popular during weekends and holidays (more than 60% of boat trips) and this explains the large variability in the average number of daily trips. August has been the most important month for whale watching, which coincides with a large number of whales and Colombian school holidays. Whale watchers came mainly (90%) from Colombia, the rest were from Argentina, Belgium, Brazil, Chile, Curazao, Germany, French, Israel, UK, USA, Venezuela. At least 174 local tourist interpreters (an average of 21 per year) and 151 boat operators (50 in average per year) were trained and certified (Table 1).

Table 1. Characterization of whale-watching activity in Uramba Bahía Málaga National Natural Park from 2011 to 2019 in the months from July to October. ND means no data available. Local boats refer to boats from Málaga area.

Whale-watching activity	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of total whale watchers	10,197	11,071	11,035	10,995	11,957	15,929	16,255	23,122	21,186
Average whale watchers per month	2549±1868	2768±1790	2759±1452	2749±2010	2989±2100	3982±2589	4064±2853	5781±2729	5297±3482
Total boat trips	701	855	791	848	932	1123	1277	1792	1678
Average boat trips per month	175±119	214±128	198±104	212±138	233±167	281±159	319±196	448±195	420±252
Average of boat trips per day	ND	ND	8.9±7.1	ND	10.4±8.5	12.5±11.8	14.2±13.4	16.5±17.2	18.6±18.0
Maximum number of boat trips per day	ND	ND	76	ND	93	115	108	139	118
Percent of the trips on weekends	ND	ND	ND	ND	75	ND	75	70	62
Number of different boats	ND	ND	ND	ND	ND	ND	64	154	173
Percent of small boats used in the trips (of the total boat trips)	ND	ND	ND	ND	ND	ND	98	99	98
Percent of local boats used in the whale-watching trips (of the total boat trips)	ND	ND	ND	ND	44.8	ND	38.5	45.1	54.4
Month with more whale-watching activity	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.
Number of certified interpreters	ND	18	20	25	21	17	27	30	16
Number of certified operators	ND	ND	ND	ND	ND	ND	44	54	53
Direct expenses (USD\$ thousands)	56.3	77.7	84.4	84.1	83.8	91.1	121.4	123.9	176.2
Average monthly direct expenses (USD\$ thousands)	19.4±14.2	21.1±13.6	21.0±11.1	20.9±15.3	22.8±16.0	30.3±19.7	31.0±21.7	44.0±20.8	40.4±26.5
Total expenses (USD\$ thousands)	419.6	539.9	544.9	536.2	590.4	805.9	847.2	1497.5	1449.6
Average monthly total expenses (USD\$ thousands)	104.9±76.9	135.0±87.3	136.2±71.7	134.0±98.0	147.6±103.7	201.5±131.0	211.8±148.7	374.4±176.7	362.4±238.3

The direct expenses generated by whale watching was estimated based on the number of whale watchers and the cost of a whale-watching tour, which oscillates around \$8 USD. We also estimated total expenses, which included transport from Buenaventura to Juanchaco (round trip), food and accommodation for a weekend (2 days, one night). Direct expenses have increased from \$142,735 USD in 2011 to \$155,277 USD in 2019 (Table 1); per month increased by 107.8% in the last nine years, from \$19,424 USD in 2011 to \$40,357 USD in 2019 (Figure 3C). Total expenses went from \$770,770 USD in 2011 to \$1,394,388 USD in 2019 (Table 1), and monthly total expenses increased by 245%, from \$104,891 USD in 2011 to \$362,409 USD in 2019 (Figure 3D). As observed with whale watchers and boat trips, expenses were similar between 2011 and 2017, and a significant increase occurred for 2018 and 2019 (Figure 3 C-D).

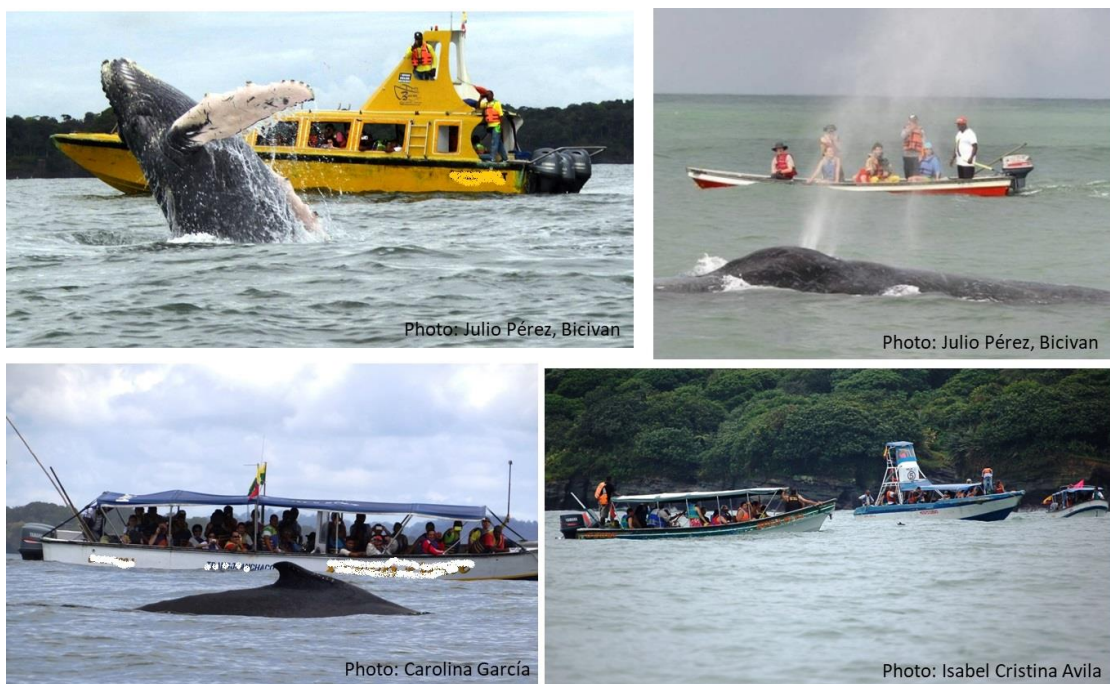


Figure 4. Typical whale-watching boats at Uramba-Bahía Málaga Natural National Park, Colombia, between 2011 and 2019.

In relation with the identification of the compliance with whale-watching recommendations, we only used data of 2019, as enough field data were available for this year. In 2019 during 228 hours of observation over the 4-month period, 144 whale pods were followed by boats, 55% of them being mother-calf pairs. There was a minimum of two and a maximum of 14 boats simultaneously with pod of whales. Majority of boats (76.5%) approached whales at a “fast” speed (≥ 3 knots). Duration of an individual boat’s encounter was 42.8 min in average (± 6.8). Variables as distance of boats to the whales and behavior of whales were not measured.

Discussion

Uramba Bahía Málaga National Park is an important tourist destination for whale watching in Colombia. Whale-watching activity in Málaga has increased considerably since 2011. Whale watchers per month increased by 108% in the last decade, from 2,549 tourists in 2011 to 5,297 tourists in 2019, which represents 32% of the number of tourists that visit the region of the Valle del Cauca monthly (Gobernación del Valle del Cauca, 2017). When comparing with 2008, whale watchers per year increased by 218%, from 6,663 in 2008 (Avila *et al.*, 2015) to 21,186 in 2019. Humpback whales have now become an important tourist attraction in the region, and every year more people are traveling to watch them.

In addition, there is also more traffic of whale-watching boats than a decade before. Boat trips per month increased by 140% in the last nine years, from 175 in 2011 to 420 in 2019. And when comparing per year boat trips increased by 528%, from 267 in 2008 (Avila *et al.* 2008) to 1,678 in 2019. Our study did not include other boat traffic, like fishing, navy boats, merchant ships, and local transport, the latter also more frequent to accommodate the growing number of tourists. An increase in boat traffic during whale season is worrying, as maritime traffic is one of the greatest global threats to whales, due to the high frequency of boat-whale collisions (Van Waerebeek *et al.*, 2007; Avila *et al.*, 2018; Schoeman *et al.*, 2020). Based on stranding records, between 1986, and 2006, approximately 1.6 % of the humpback whale population in Colombia had been affected by collisions, and at least 5 % of these collisions happened in Bahía Málaga (Capella *et al.*, 2001, 2007a). This adds to the pressure on entanglements with fishing nets (by-catch), which affects approximately 1.9% of the humpback whale population of Colombia, with an average of 2.3 (\pm 1.8) entanglements per year, 60% of the cases involved calves (Capella *et al.*, 2001, 2007b). All boats used in Bahía Málaga for whale watching are motorized and produce underwater noise and several studies demonstrated that whales appeared capable to detect and recognize boat sounds at distances of up to 8-10 km (*e.g.* Corkeron, 1995). Boat presence generates behavioral changes (*e.g.* Watkins, 1986; Corkeron, 1995; Scheidat *et al.*, 2004; Avila *et al.*, 2015; Zapetis *et al.*, 2017). The number and speed of boats, as well as directional changes were correlated with changes in behavior including respiration rates, diving intervals, swimming speed and aerial behavior, and such changes were elicited when boats were 0.5 - 1.0 km away (Bauer and Herman, 1986; Bauer *et al.*, 1993). In the Northwest Atlantic, humpback whales co-occur with boat traffic and anthropogenic noise (Stimpert *et al.*, 2011), as well as in the Gulf of Panama (Guzman *et al.*, 2012) and in Bahía Málaga in Colombia (Avila *et al.*, 2017). Therefore, there is an obvious risk of boat-whale collisions in Uramba Bahía Málaga, and the increase of noise pollution there is evident.

Although environmental education activities are undertaken in the area, and in average 21 tourist interpreters and 50 boat operators are trained each year in whale-watching good practice, recommendations were often overlooked (for 2019). Boat trips per day went from an average of six per day in 2008 (Avila *et al.*, 2015) to 19 per day in 2019. Besides, in 2019 it was registered a maximum of 118 boat trips per day in the whale's area, and it is worrying the impact of such traffic over the whales and their habitat. Boats followed mother-calf groups more often than other groups, approach speed was fast, and boats are staying more than 30 minutes with whales. Also, though only three boats are recommended with pods simultaneously there were times with 14 in 2019. Previous work in Bahía Málaga had shown that not following recommendations for humpback whale-watching activity affected whales' behavior negatively, with whales modifying their behavior by reducing blows per minute, moving faster and more erratically, increasing breaching frequency, and decreasing their resting behavior (Avila *et al.*, 2015).

Marine wildlife tours provide a range of education and conservation benefits for visitors. These benefits derive from interpretation programs and close personal encounters with marine wildlife (Zeppel and Muloin, 2008). Currently around 21,000 visitors are benefited by humpback whales in Uramba Bahía Málaga. Additionally, although mainly visitors are Colombians, whale-watching activity at Málaga is also benefited people from various parts of the world (*e.g.* Americans and Europeans). In addition, currently boats used for whale watching were mainly remote boats (54.4%), *i.e.* from Magüipi and Buenaventura, while in 2008 were mainly local boats (70.3%; Avila *et al.* 2008), *i.e.* from Bahía Málaga area (Juanchaco, Ladrilleros, La Barra and La Plata). So, whale-watching activity in Uramba Bahía Málaga is now benefiting not only the local people but the neighboring too. Whale-watching activities coupled with education experiences, increase environmental awareness and when whale-watching platforms are implemented with adequate interpreters can serve as a source of environmental education and can raise conservation awareness (Orams, 1995; García-Cegarra and Pacheco, 2017).

Whale-watching activity in Uramba Bahía Málaga produces important economic benefits to local people and also neighboring (*e.g.* Buenaventura), and these have increased substantially, mainly since 2015. As fisheries are declining worldwide (Pauly and Zeller, 2015) and mining and timber extraction are restricted and limited in Málaga (Escobar, 2017), whale watching may serve as a viable alternative economic activity for people of Uramba Bahía Málaga National Park and surroundings. Our results indicate that whale watching of humpbacks is currently worth an estimate of US\$ 1.4 million annually as a tourist attraction, an economic input that did not exist in the region one decade ago. This activity has a significant potential for further growth; however, the growth in whale watching has led to management problems.

Whale watching activity is colloquially considered “ecotourism”, which implies that the activity should then be sustainable (Drumm and Moore, 2002). For the whale watching to be a sustainable practice, it is necessary to be ecologically sound and profitable, that simultaneously supports local economies and promotes whale education and conservation (Wearing et al., 2014). A recent published study showed that for 2015 humpback whale-watching activity in Bahía Málaga met only 16% of the conditions for sustainable governance, and it was characterized by unevenness in connections with markets, income inequality, the lack of a whale-watching operators’ association, and the lack of support from government organizations (Soto-Cortés et al., 2021). Although in our study we did not evaluate the sustainability, we identified a sign that affect the conservation of whales and therefore entails to the unsustainability of the activity: whale-watching boats and tourists have increased considerably in the last decade and whale-watching recommendations are not followed. To manage this activity in a sustainable manner it is critical to determine the whale-watching carrying capacity of Uramba Bahía Málaga National Park, which includes the number of boats per day in the area. But, as in Bahía Málaga take place many activities that use boats in the whale’ area, e.g., fishing, whale-watching and transport, carrying capacity should include all type of boats. An assessment of whale-watching carrying capacity requires an understanding of the biological, social and economic dimensions (Fernandes and Rossi-Santos, 2018). Meanwhile, we suggest following the recommendations, to maintain a maximum of three boats per whale group, keeping the reglementary time of 30 minutes with whales, at most two 40 hp engines, enforcing transit speeds below 10 knots and limiting the activity to its current level, until more data and management capacity become available. Monitoring and controls must be strengthened to ensure compliance with the recommendations. Authorities need to strengthen the monitoring, especially on weekends, evaluate and control this growing tourist activity. Boat operators should follow the current whale-watching recommendations strictly. Propeller guards for boats that transit in the area of whales are especially recommended, and it should be mandatory for large boats (> 80 m), since most collisions are with this type of boats (Laist et al., 2001). Besides, we recommend promoting watching whales from a land-based, which eliminates negative effects of boats on humpback whales. The shore platform used in this study, which is located between the towns Juanchaco and Ladrilleros at 20 msnm (Figures 1 and 2E) gives a wonderful view of humpback whales, especially using binoculars, and visitors could stay the whole day enjoying their presence, without causing them any impact. Also, as humpback whales display sounds and songs in the area (Avila, 2000), we recommend the implementation of an acoustic whale tourism. With the use of a hydrophone, this activity can be done at distances greater than 200 m from the whales, mitigating negative impacts from boats.

In addition, environmental education should be continued and reinforced, as the use of education in tourism activities could promote in the tourists an environmentally sensitive attitude (Orams 1995). It is important to continue training operators and interpreters in Uramba Bahía Málaga to promote the conservation of whales and their environment, however in Málaga it must be evaluated and adjusted if necessary, so that the objective of enforcing good whale tourism practices is met. Also, cooperation between operators and a whale-watching operators' association will conduce to good practices in a whale-watching activity. Good practices reduce impacts on whales, but also ensure the long-term sustainability of this economic activity for local communities. In sites, like Uramba Bahía Málaga, where many authorities converge and the main challenge is to achieve an agreement of understanding between these authorities for the administration, planning and responsible management of the whale-watching activity, with respect for their administrative autonomies, but with the common purpose of conservation and responsible use of the whales.

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