Surfonomics Playa Hermosa, Costa Rica

The economic impact of surf tourism on the local economy

Marcos Abilio Bosquetti

Trent Hodges

CONSERVATION INTERNATIONAL

SAVE THE WAVES COALITION

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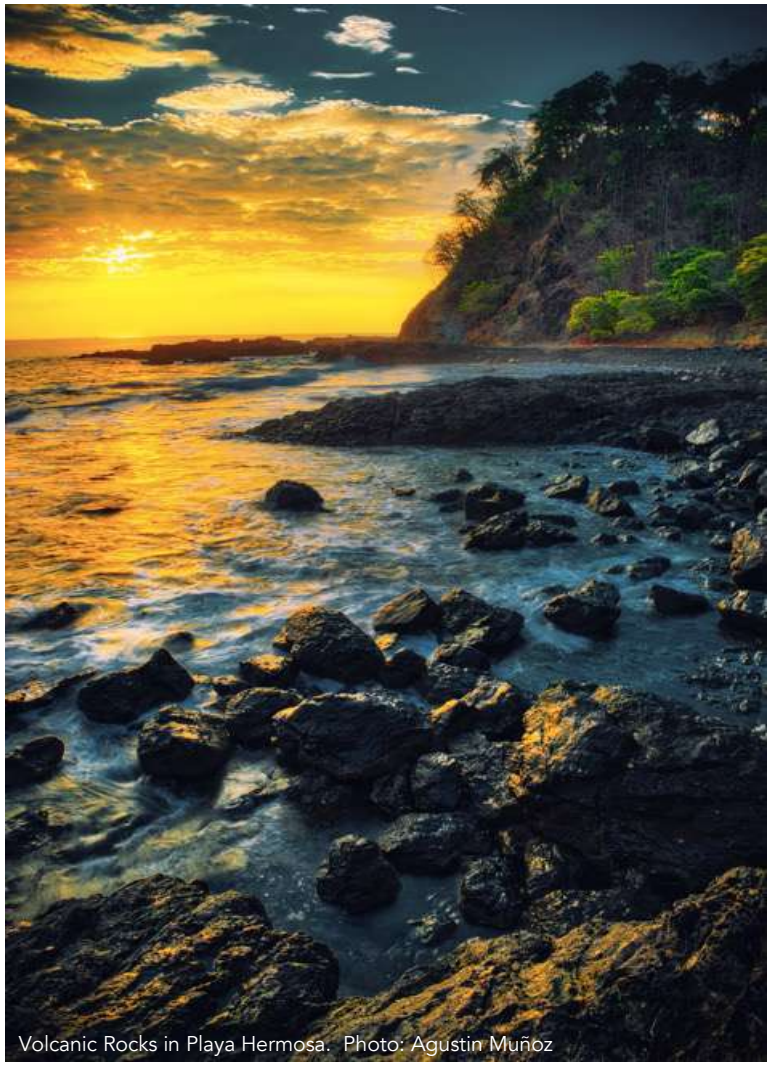

Volcanic Rocks in Playa Hermosa. Photo: Agustin Muñoz

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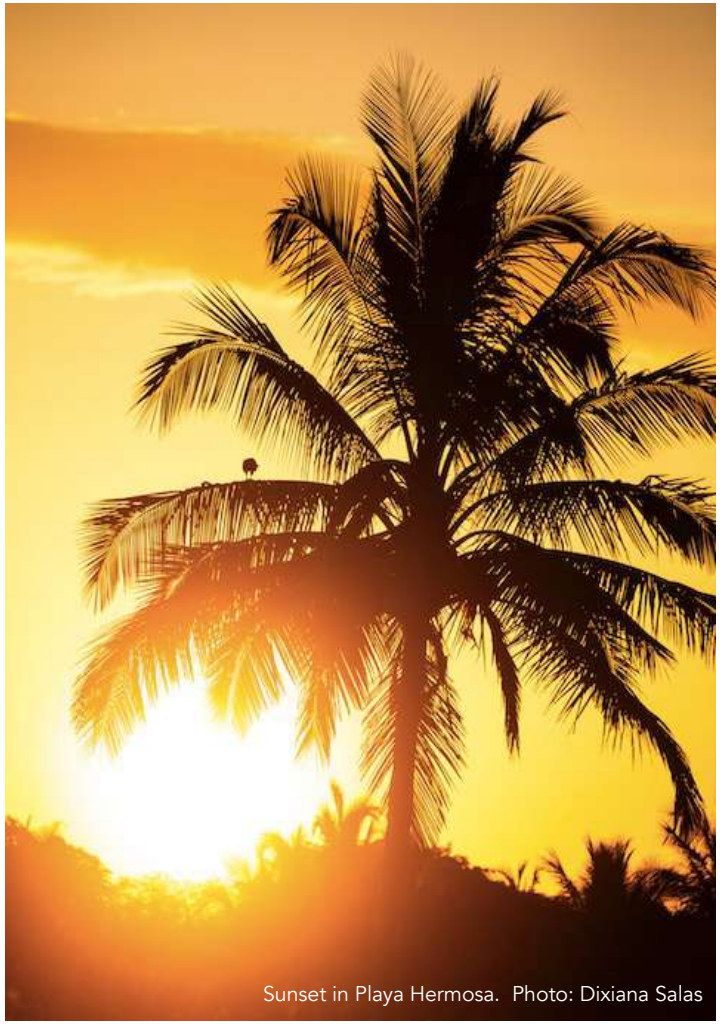


Sunset in Playa Hermosa. Photo: Dixiana Salas

Introduction

Costa Rica is a beautiful country with 5 million inhabitants that receives 3 million tourists every year (ICT, 2020a). Most visitors travel on vacation to enjoy its tropical beaches, which are ideal for a range of water sports, including surfing. The Costa Rican Tourism Board estimates that 17% of the international tourists practice surf at some level during their stay (ICT, 2020b). A simple multiplication of these figures would suggest that Costa Rica receives around half a million tourists that experience surfing every year. Nevertheless, this calculation and others derived from it are imprecise, as they don't refer to actual surf tourists, their behavior or consumption patterns specifically for Playa Hermosa, which is one of the objectives of this study and will be consequently detailed in this document.

Playa Hermosa is considered Costa Rica's National Surf Stadium. The all-year-round beach breaks have been home to the first surf competitions in the country and every year surfers from all over the world visit its famous A frame waves. Playa Hermosa is part of the Central Pacific Conservation Area, which is noted by its diverse landscape, climates, and biodiversity (SINAC, 2021). The lush tropical forests and volcanic rock ridges surrounding it make this pristine beach a paradise. No wonder *Playa Hermosa* means beautiful beach in Spanish.

In September 2020 Save The Waves Coalition nominated Playa Hermosa as the 10th World Surfing Reserve (WSR) and the first in Central America. This designation is an international recognition of the incredible biodiversity of the area, surf culture and history, strong community support, and high quality, consistent surf.

The world-class waves of Playa Hermosa are a vast natural coastal resource with enormous social and economic value that is yet to be considered by political leaders and leveraged by local communities. Therefore, it is essential to understand the benefits of this surf spot to the local economy in order to guide policy makers towards sustainable development.

This empirical study estimates the direct contribution of surf tourism to the local economy of Playa Hermosa by applying surf economics, also known as "Surfonomics". This method uses direct expenditure data from visiting surf tourists to estimate the economic value that a world-class wave brings to the community.

This Surfonomics model, created in California and applied in six countries, was adapted to Playa Hermosa's context to understand surf tourists' demographics and spending patterns, as well as their views on environmental threats, willingness to help address them, and perceptions of the World Surfing Reserve. All primary data was collected during the 2021 peak surfing season through face-to-face survey interviews with 274 surf tourists, 20 local surfers, 22 local lodging business managers, and 3 surf travel agencies from USA, Brazil and Costa Rica. Data was analyzed using descriptive statistics to present the results of this quantitative research.

This study aims to inform management decisions to preserve the surf resources in Playa Hermosa for future generations, inspire further Surfonomics studies in Costa Rica, and solidify the foundation to create a national database for this growing segment of the tourism industry.

The following pages include: i) Surfing Playa Hermosa, ii) protecting Playa Hermosa, iii) a brief overview on Surf Economics, iv) the method used in this research, v) the results of this empirical study, vi) a brief discussion of the results, and vii) the final conclusions.

Surfing Playa Hermosa

Playa Hermosa is located in the Garabito municipality in Puntarenas, a province located in the southwest part of the country, covering most of Costa Rica's Pacific coast. Playa Hermosa has many different surf spots along its 7km long beach, including a rocky point break and river-mouth, making it a surf haven with some of the most consistent and beautifully shaped waves in Costa Rica (Zumbado-Ramos, 2019).

This world-class region shines during the south swell season which brings larger waves during the months of May through October. It provides a great opportunity for experienced surfers to ride challenging hollow and fast waves, making it the perfect venue for local and international contests (Zumbado-Ramos, 2019).

Surfers can ride waves anywhere along Playa Hermosa, but the most popular spots are Terrazas, Backyard, Tulín, and El Almendro (Sancho-Gallegos, 2021; Zumbado-Ramos, 2019).

Terrazas offers fast and hollow waves close to shore that work best during mid and high tides.

Backyard is a sandbar that has the most consistent waves in the region. Hollow rights and lefts can be ridden at mid and high tide.

Tulín is a river-mouth that breaks very powerful during low tides with south and south-west swells. This surf spot is usually bigger than the rest of Playa Hermosa.

El Almendro (the Almond Tree) is the most popular surf spot in Playa Hermosa. It breaks best in mid to high tide from head high to double overhead.

Playa Hermosa is a true surfer's paradise, with a laidback atmosphere where both locals and visitors share the "Pura Vida" attitude – a Costa Rican expression for "life is good."

Playa Hermosa. Photo: Dixiana Salas

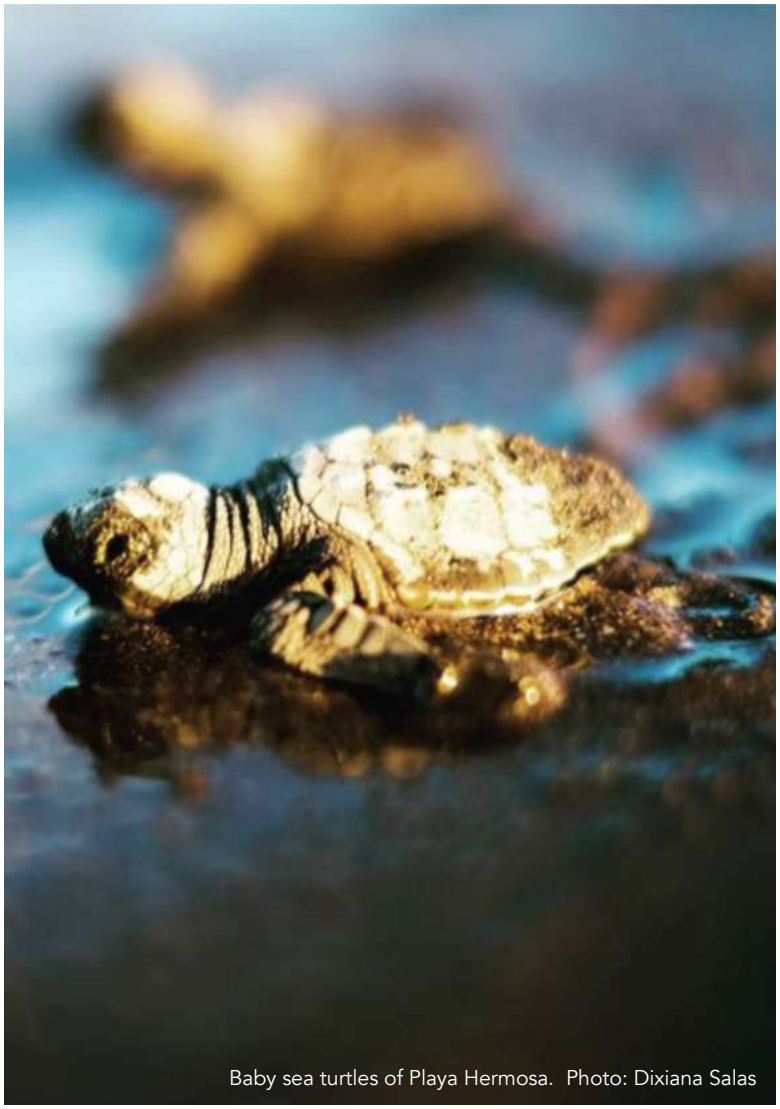
Protecting Playa Hermosa

Playa Hermosa is a recognized biodiversity hotspot that hosts multiple critically important ecosystems, including estuaries and mangroves. There are 61 threatened species in the Playa Hermosa surf ecosystem, including 3 endangered sea turtle species and the iconic Scarlet Macaw. A large stretch of Playa Hermosa is part of the Punta Mala Wildlife Refuge, a national protected area that spans 2,742 hectares, 82% of which are in the ocean. The refuge has a sea turtle hatchery and an associated conservation program (Zumbado-Ramos, 2019).

Currently the community of Playa Hermosa holds a 1-star rating from the Ecologic Blue Flag beach program, a recognition to the community's efforts to protect the beach while pursuing sustainable development. In addition to the existing protection efforts, Save The Waves Coalition and the Local Stewardship Council at Playa Hermosa World Surfing Reserve are set on achieving legal protection of the waves and a plan for sustainable urban growth with low impact tourism. (Zumbado-Ramos, 2021).

These initiatives set forth by Save The Waves Coalition and the Local Stewardship Council will be accomplished in collaboration with the National System for Conservation (SINAC), the Costa Rica Surfing Federation (FSC), the Municipality of Garabito, the Association of Neighbors of Playa Hermosa, and Costas Verdes (key stakeholders that supported the World Surfing Reserve application for Playa Hermosa). The objective is to design a sustainable coastal urban development master plan which addresses the key issues to this surf ecosystem in the years to come, including climate change, over development, and wastewater treatment to ensure continued public access to the waves. Save The Waves Coalition and its partner Conservation International are proposing Surf Protected Area Networks in Costa Rica to foster this type of initiative in the country's surf ecosystems (Zumbado-Ramos, 2021).

Save The Waves Coalition and the Local Stewardship Council want to ensure that Playa Hermosa continues to be a biodiversity refuge while also focusing on sustainable surf tourism as a development strategy.



Baby sea turtles of Playa Hermosa. Photo: Dixiana Salas

Surf Economics

Surfing is a free recreational activity that is practiced by approximately 35 million people worldwide (O'Brien & Eddie, 2013; Porter & Usher, 2019). In search of perfect waves, surfers are regularly traveling across the globe impacting thousands of coastal communities (Buckley, 2002; Ponting, 2009; Martin & Assenov, 2012; Ponting & O'Brein, 2015; McGregor & Wills, 2017; Mach & Ponting, 2018; Porter & Usher, 2019).

As harmful coastal developments and pollution threaten surf spots, the evaluation of economic benefits derived from surfing, informally known as Surfonomics, has been utilized by internationally renowned envirosurf NGOs such as the Surfrider Foundation and Save The Waves Coalition to fully account for the economic benefits of surf tourism to local communities while also promoting coastal conservation.

Surf economics or Surfonomics applies natural resource economics to better understand the economic value of waves and surfing to local communities, as well as the consumer surplus that surf breaks provide to millions of surfers (Nelsen, 2012).

Surfonomics has contributed to Save The Waves' World Surfing Reserves Program as an advocacy mechanism to influence government policies and help decision makers take better choices to protect key environmental, cultural, economic, and community attributes of world-class surf breaks and their surrounding areas (Save The Waves, 2020).

Over the past decade, Save the Waves has commissioned eight Surfonomics studies. Four of them were carried out in World Surfing Reserves: Pichilemu, Chile (Wright, Hodges & Sadrpour, 2014); Huanchaco, Peru (Hodges, 2015a); Bahia de Todos Santos, Mexico (Hodges, 2015b); and Guarda do Embaú, Brazil (Bosquetti & Souza, 2019). The other four were carried out in Mundaka, Spain (Murphy & Bernal, 2008); Mavericks, USA (Coman & Burnett, 2009); Uluwatu, Indonesia (Margules, 2014), and Lobitos, Perú (Bosquetti, Pizarro, Taboga, Lang & Hodges, 2020).

In Australia, a similar study carried out by Neil Lazarow was commissioned by the Gold Coast City Council to support the city's shoreline management plan (Lazarow, 2009). All these studies applied the Direct Expenditure Method of economic evaluation to estimate the market value of surfing for the local economy. The results of these eight studies sum up to approximately US$250 million per year.

Surfing also produces significant non-market value, which comes from the welfare and benefits that surfing provides to millions of surfers that cannot be measured by the Direct Expenditure Method (DEM). The most common type of non-market value studied in surfing is consumer surplus, estimated by the Travel Cost Method (TCM). It represents the aggregate willingness-to-pay above and beyond what people are currently paying to reach the surf location (Scorse & Hodges, 2017). Chad Nelsen applied the TCM to estimate the non-market value of surfing at Trestles, California, and found the average consumer surplus of surfing to be US$138.00 per person per visit (Nelsen, 2012).

The non-market value of surfing can also be estimated by the Hedonic Price Method (HPM). As surfers choose to live close to surf spots, they have no travel costs. However, they pay much higher prices for a house. Therefore, part of the non-market value of surfing would be capitalized into real estate value. Scorse, Reynolds & Sackett (2015) applied the HPM to study the impact of surf breaks on home prices in Santa Cruz, California, and found that beach houses close to surf spots are worth hundreds of thousands of dollars more than similar beach houses far from high quality surf spots.

This brief overview shows the main methods used in empirical studies on the nascent field of Surfonomics. The next section presents the methodology applied in this present research.

Playa Hermosa's A Frame Waves. Photo: Agustin Muñoz

Research Method

For this study, we consider a tourist to be a person traveling or visiting a place for pleasure either for an overnight stay or for a same-day visit (UNWTO, 2008). This Surfonomics study investigates both groups: **Surf Tourists** who have an overnight stay and **Day-Trip Surfers** (same-day visitors) to estimate the direct contribution of surf tourism to the local economy of Playa Hermosa.

This empirical study applied the Direct Expenditure Method (DEM) of economic evaluation. The Surfonomics model applied in the World Surfing Reserves of Pichilemu, Chile (Wright et al., 2014); Huanchaco, Peru (Hodges, 2015a); Bahia de Todos Santos, Mexico (Hodges, 2015b); and Guarda do Embaú, Brazil (Bosquetti et al., 2019) was adapted to the Playa Hermosa context and two new sources of primary data were incorporated in the model to increase the validity and reliability of the research findings. This study is also based on the methodology used in Lobitos, Perú (Bosquetti et al., 2020).

Similarly to the research method applied in the study of Guarda do Embaú and Lobitos, two surveys were designed to collect primary data from two different sources: surf tourists and local lodging managers. The survey designed to interview surf tourists was prepared to collect data on the surf tourists' demographics and their spending patterns, as well as on their view on environmental threats, willingness to help address those threats, and perceptions of Playa Hermosa as a surf destination.

The survey designed to interview managers of the local lodging businesses (hotels & AirBnB vacation rentals) collected data on bed capacity, occupancy rates, percentage of surfer guests, and average length of stay in both high and low season.

This study expanded the Surfonomics' research method by adding two more sources of primary data: local surfers and surf travel agencies. A new survey was designed to collect data from local surfers to explore their empirical local knowledge on surf tourists visiting Playa Hermosa.

For the surf travel agencies, a semi-structured interview script was utilized to collect qualitative information about surf trips to Costa Rica and an assessment of the most popular surf towns and surf routes in the country. The average length of stay and price ranges of hotels and restaurants was also included as part of these interviews.

As half of the Surf Tourists (overnight stay) are from the USA, Costa Rica and Brazil, the three surf travel agencies interviewed are based in these three countries. These agencies were CR Surf Travel Company (USA), Real Surf Trips (Costa Rica), and Liquid Trips (Brazil).

This Surfonomics study made use of secondary data from Instituto Costarricense de Turismo (ICT), the Costa Rican Tourism Board which carries out large surveys with general tourists in the two international airports of Costa Rica. The results of the ICT's metadata on tourism indicators at the country level represent the main source of secondary data to support the findings of this empirical research on surf tourism.

Secondary data from VacationsCostaRica.com, TripAdvisor.com, Booking.com, and AirBnB.com were also analyzed to support the estimation of Playa Hermosa's capacity for tourism accommodation.

Data Collection

Before starting the collection of primary data, the surveys were pretested to address potential issues and improve the surveyors' approach. This empirical study used Convenience Sampling, which is a method for selecting the interviewees based on their proximity to the research site (Creswell & Creswell, 2018).

The surveyors approached surfers on the beach asking if they were locals, day-trip surfers (same-day visitors) or surf tourists staying in Playa Hermosa. They were then asked the respective survey questions and their answers were collected on the form.

To collect primary data on accommodations in Playa Hermosa, the surveyors visited most of the hotels and AirBnB vacation rentals to interview managers directly, with two interviews carried out by telephone.

The team of surveyors carried out 316 face-to-face interviews collecting usable responses from 203 surf tourists (overnight stay), 71 day-trip surf tourists (same-day visitors), 20 local surfers, and 22 lodging business managers in Playa Hermosa. The team also did 46 counts of surfers in the water on weekends and week-days during the fieldwork period.

The face-to-face interviews with surf tourists, local surfers, and lodging managers were carried out from July to September 2021 and the telephone interviews with the surf travel agencies were completed in September during the data analysis phase.

Interviewing a surf tourist in Playa Hermosa. Photo: Abigail Acuña

Data Analysis

All data collected were entered manually in a database and analyzed using descriptive statistics. The number of surf tourists visiting Playa Hermosa was calculated using primary data about the town's capacity for tourism accommodation obtained from surveys with 22 local lodging managers and secondary data from 4 vacation accommodation websites.

The number of surf tourists visiting Playa Hermosa is calculated by the multiplication of the following variables: bed capacity, average occupancy rate, average percentage of surfer guests, monthly guest turnover rate (days in the month/average length of stay), and months of operation per season.

The direct contribution of surf tourism to the local economy is calculated by multiplying the following variables: annual number of Surf Tourists, average daily expenses, and length of stay in days. For Day-Trip Surfers, number of same-day visits per year to Playa Hermosa is calculated to understand the extent of their economic contribution.

Data triangulation was used extensively to analyze the data collected from different primary and secondary sources with the goal to increase the validity and reliability of the results. This 274 surf tourist survey has a resulting margin of error of ± 5.7% at the 95% confidence interval.

Study Limitations

Surfonomics Playa Hermosa is a case study that uses a non-probabilistic method of data collection that is not random, so research findings cannot be extrapolated to the greater population of surf tourists or to other surf towns in Costa Rica.

Suggestions for Further Research

Considering that this is the first empirical study in the country on the direct contribution of surf tourism to the local economy, future Surfonomics studies conducted in other well-known surf destinations could provide more information about the demographics and spending patterns of surf tourists in Costa Rica.

Since Costa Rica is a small country with 5 million inhabitants that receives around half a million tourists who enjoy surfing per year (ICT, 2020b), these figures alone justify further studies on surf tourism. Furthermore, differentiating between surf tourists and regular tourists who go surfing at the national level is important in order to understand the true economic and social value of surf resources to Costa Rica. By better understanding the nuances of surfing's economic and social contribution to coastal communities in Costa Rica, surf resources can be better protected and managed into the future.

Empirical studies such as this provide important information about the positive impacts of surf tourism that can aid communities and decision-makers.

Diving into the wave of Playa Hermosa. Photo: Agustin Muñoz

Results

These results present findings about surf tourists' demographics and their spending patterns as well as their views on environmental threats and perceptions of Playa Hermosa as a surf destination.

The descriptive statistics displayed in the tables below only refer to surf tourists from the sample of this Surfonomics study carried out in Playa Hermosa. Therefore, it cannot be extrapolated to the entire population of surf tourists that visit the country, or to other surf towns in Costa Rica.

The sentences below the tables highlight the key findings of this study. The discussion of the results and its comparison with Surfonomics studies conducted in other World Surfing Reserves will be presented in the Discussion.

Table 1: Survey Sample Composition of Surf Tourists*

Survey Sample Composition [n=274]	Frequency	(%)
International Surf Tourists (overnight stay)	168	61.3
Domestic Surf Tourists (overnight stay)	35	12.8
Total of Surf Tourists (overnight stay)	**203**	**74.1**
Day-Trip Surfers (same-day visitor)	71	25.9
Survey Sample Size	**274**	**100.0**

(*) Survey sample composition after data cleaning

Domestic Surf Tourists represents only 17.2% of the total number of Surf Tourists that stay overnight in Playa Hermosa, suggesting that Playa Hermosa is an international surf town.

Table 2: Intel. & Domestic Surf Tourists (overnight stay) Continent of Origin + Costa Rica

Continent of Origin + Costa Rica [n=203]	Frequency	(%)
North America: USA	77	45.8
Latin America: Argentina, Brazil, Chile, Dom. Republic, Mexico, Peru, Uruguay	43	25.6
Europe: France, Germany, Greece, Italy, Portugal, Romania, Spain, and Russia	38	22.6
Asia & Australasia: Israel, Australia	10	6.0
Total of International Surf Tourists [n=168]	**168**	**82.8**
Total of Domestic Surf Tourists	**35**	**17.2**
Total of the Surf Tourists' Sample	**203**	**100.0**

Table 3: Intel. Surf Tourists: Top 3 Countries of Origin

Intel. Surf Tourists: Top 3 Countries [n=168]	Frequency	(%)
USA	77	45.8
Brazil	25	14.9
Spain	18	10.7
Total of Surf Tourists from Top 3 Countries	**118**	**70.2**

Findings show that 70.2% of the international surf tourists come from 3 countries (USA, Brazil and Spain). 45.8% come from USA.

Table 4: Day-Trip Surfers (same-day visitors) and Province of Residence

Day-Trip Surfers (same-day visitors) [n=71]	Frequency	(%)
Gran Area Metropolitana* (GAM):	44	62.0
GAM: San José alone (100km away)	26	36.6
GAM: other cities (90–110km away)	18	25.4
Puntarenas Province:	27	38.0
Puntarenas: Jacó alone (8km away)	19	26.8
Puntarenas: other cities (14–50km away)	8	11.2
Total of Day-Trip Surf Tourists	71	100.0

(*) Greater Metropolitan Area of Costa Rica is the largest urban zone in the country with high population density surrounding its capital, San José.

Table 5: Age Intervals

Age Intervals* [n=274]	Frequency	(%)
10 – 17	11	4.0
18 – 24	54	19.7
25 – 34	95	34.7
35 – 44	78	28.5
45 – 54	28	10.2
55 +	8	2.9

(*) Data collected in years are presented in ranges for easy viewing.

Table 6: Gender

Gender [n=274]	Frequency	(%)
Male	227	82.9
Female	47	17.1

The weighted average of Surfers' age in this study is 33 years while the weighted average of General Tourists' age in the 2020 ICT survey is 40 years. General Tourists' gender is 53.2% Male and 46.8% Female (ICT, 2021a).

This study's findings and the results of the ICT's surveys on age range and gender show that, on average, surf tourists are younger than tourists in general. It also shows that there is balance between male and female for general tourists while surf tourists are predominantly male. This gender inequality among surf tourists is also found in all the other 8 Surfonomics studies carried out in different countries.

Table 7: Level of Education

Level of Education [n=274]	Frequency	(%)
Some High School	17	6.2
High School Diploma	29	10.6
Some College/University	59	21.5
College/University Degree	141	51.5
Graduate Degree (Masters and PhDs)	28	10.2

Table 8: Annual Income

Personal Annual Income in USD* [n=274]	Frequency	(%)
Student Only	42	15.3
Below $15,000	29	10.6
$15,000 – $29,999	48	17.5
$30,000 – $49,999	32	11.7
$50,000 – $74,999	42	15.3
$75,000 – $99,999	31	11.3
Above $100,000	17	6.2
Prefer not to answer	33	12.1

(*) As salary in Costa Rica is paid and measured monthly in CRC, data from Costa Rican surfers was converted to annual income and to USD. Exchange conversion rate: US$1.00 = CRC623.10 of 15 Aug 2021.

Modal Range: Findings show that the modal range of personal annual income of the International Surf Tourists is US$50,000 – US$74,999 while the modal range of the Domestic Surf Tourists & Day-Trip Surfers is US$15,000 – US$29,999.

Table 9: Surf Level

Surf Level [n=274]	Frequency	(%)
Beginner	29	10.6
Intermediate	175	63.9
Advanced	62	22.6
Professional	8	2.9

This figures match the information from the interview with surf travel agencies suggesting that Playa Hermosa has powerful waves sought out by surfers that have some experience.

Table 10: Type of Surf Practiced

Type of Surf (multiple answers) [n=274]	Frequency	(%)
Shortboard	205	74.8
Longboard	49	17.9
Bodyboard	34	12.4
Stand Up Paddle	14	5.1
Others	9	3.3

Playa Hermosa. Photo: Dixiana Salas

Table 11: Surfing Influence on Visiting Playa Hermosa

Surfing's Influence [n=274]	Frequency	(%)
Primary Factor	242	88.3
Secondary Factor	32	11.7

Table 12: International Surf Trip to Costa Rica

Discovering Costa Rica's Waves [n=168]	Frequency	(%)
Two or more surf trips to Costa Rica	91	54.2
First surf trip to Costa Rica	77	45.8
First surf trip Abroad	41	24.4
First stay in Playa Hermosa	82	48.8

45.8% of surfers surveyed were traveling to Costa Rica for the first time, while 24.4% were also on their first international surf trip. For 48.8% of the surfers, it was their first time in Playa Hermosa, although not necessarily their first time in Costa Rica, and 51.2% of surfers had stayed in Playa Hermosa before. These results suggest that Playa Hermosa is a very popular and important destination for surf tourism in Costa Rica, as it attracts many first-time and recurring visitors.

Playa Hermosa is also one of Costa Rican surfers' favorite waves. In 2018 the Costa Rican Surf Federation (FSC) carried out a country level survey with thousands of Costa Rican surfers and found that Playa Jacó is the favorite wave, followed by Avellanas in Guanacaste, Pavones in Golfito, and Playa Hermosa (FSC, 2018).

Table 13: Travel Partner Surf Trip to Costa Rica

Number of Travel Partners [n=168]	Frequency	(%)
Solo traveler	46	27.4
One travel partner	78	46.3
Two travel partners	17	10.1
Three or more travel partners	27	16.2

Table 14: Issues that would Negatively Impact Decision to Return to Playa Hermosa

Issues (multiple answers) [n=274]	Frequency	(%)
Water Pollution	257	93.8
Change in the Quality of Waves	214	78.1
Trash	173	63.1
Sewage	154	56.2
Crowded Waves	98	35.8
Encroaching Development	64	23.4
Other Issues	12	4.4

Other Issues (4.4%): The survey included a blank space for surfers to write in their concerns. These included safety issues (car break-ins), strong localism, and high prices.

The Domestic Surf Tourists (overnight stay) and the Day-Trip Surfers also added: crocodiles in the ocean near river-mouths and red tides (harmful algal blooms) as other issues.

In the surveys with 22 lodging managers, safety issues and the necessity of police and lifeguards on the beach were mentioned. Some respondents suggested installing video cameras in parking lots and showers in the main surf spots.

Table 15: Surf Tourists that Think Environmental Threats Need to Be Addressed.

Positive Responses [n=274]	Frequency	(%)
Intel. & Domestic Surf Tourists [n=203]	199	98.0
Day-Trip Surf Tourists [n=71]	69	97.2
Total [n=274]	**268**	**97.8**

97.8% of the surf tourists think that the threats to the environment need to be addressed and 89.4% are willing to help address the threats with a financial contribution.

Table 16: Surf Tourists that Would Be Willing to Pay a Fee for Environmental Protection

Willing to Help Address the Threats [n=274]	Frequency	(%)
Intel. & Domestic Surf Tourists [n=203]	184	90.6
Day-Trip Surf Tourists [n=71]	61	85.9
Total [n=274]	**245**	**89.4**

Table 17: Preferred Way to Make a Financial Contribution to Help Address the Environmental Threats

Most Preferred Way: Pay Annual Fee	Frequency	(%)
Intel. & Domestic Surf Tourists [n=184]	168	91.3
Day-Trip Surfers (same-day visitors) [n=61]	54	88.5

The survey questionnaire provided Surf Tourists with 3 ways to make a financial contribution to help address the environmental threats:

(a) Pay an annual fee to surf in a protected area
(b) Donate monthly to a surf protected area, and
(c) Spend 2% or more in certain services that contribute to wave protection.

Performing air reverse in Playa Hermosa. Photo: Dixiana Salas

Table 18: Suggested Ranges of Annual Fee

Suggested Ranges of Annual Fee*	Range USD	(%)
Intel. & Domestic Surf Tourists [n=203]	$50 - $100	70.9
Day-Trip Surfers [n=71]	$16 - $32	73.2

(*) Data from Costa Rican Surfers were collected in Costa Rica Colón. Exchange conversion rate: US$1.00 = CRC623.10 on 15 Aug 2021.

Alternative (a) **Pay an Annual Fee to Surf in a Protected Area** is the preferred way to make a financial contribution for 90.6% of surfers. Alternative (b) Donate Monthly to a Surf Protected Area was preferred by 6.4% of the surfers. Alternative (c) Spend 2% or More in Services that Contribute to Wave Protection was the least attractive one, selected only by 3.0% of the surfers.

Table 19: Lodging Managers Willing to Promote WSR's Wave Protection Programs through their Business

Willing to Promote WSR's Programs [n=22]	Frequency	(%)
Local Hotels [n=16]	16	100.0
Local AirBnB Vacation Rentals [n=6]	6	100.0

Table 20: Length of Stay in Playa Hermosa International & Domestic Surf Tourists

Length of Stay in Playa Hermosa* [n=203]	Frequency	(%)
2 – 3 days	43	21.2
4 – 6 days	46	22.6
7 – 10 days	65	32.0
11 – 14 days	33	16.3
15 days +	16	7.9
Average Length of Stay	8.3	

(*) Data collected in days are presented in intervals for easy viewing.

The 2019 ICT Survey results show that the average length of stay of general tourists in Costa Rica was 12.6 days (ICT, 2021b). This study's survey instrument found that surfers stay for 8.3 days. Interviews with 3 surf travel agencies show that international surf tourists usually stay in Costa Rica between 10 to 15 days, but they stay in more than one surf town (mainly on the Pacific coast) to enjoy different waves. This is especially evident on surf tourists' first surf trips to Costa Rica, which is the case for 45% of the surfers interviewed in this Surfonomics study.

Table 21: Visits per Month to Playa Hermosa Day-Trip Surfers

Same-Day visits to Playa Hermosa* [n=71]	Frequency	(%)
1 – 5 days per month	17	23.9
6 – 10 days per month	31	43.7
11 – 15 days per month	10	14.1
16 + days per month	13	18.3
Average Same-Day Visits per Month and Year	9.5	100.0

(*) Data collected in days are presented in intervals for easy viewing.

Table 22: Spending Patterns in Playa Hermosa International & Domestic Surf Tourists (overnight stay)

Category of Expenditure [n=203]	USD	(%)
Accommodation	$63.92	56.7
Food and Beverage	$39.23	34.8
Surf-Related Expenses	$1.56	1.4
Miscellaneous	$8.05	7.1
Total Average Daily Expenditure	$112.76	100.0

Table 23: Spending Patterns in Playa Hermosa Day-Trip Surfers (same-day visitors)

Category of Expenditure [n=71]	USD*	(%)
Food and Beverage	9.28	88.1
Surf-Related Expenses + Miscellaneous	1.25	11.9
Total Average Day-Trip Expenditure	$10.53	100.0

(*) Data from Costa Rican Surfers were collected in Costa Rica Colón (CRC). Exchange conversion rate: US$1.00 = CRC623.10 on 15 Aug 2021.

The average day-trip expenditure of surfers coming from GAM is US$15.50 per same-day visit and most of them surf once or twice a week (48 to 96 days per year) in Playa Hermosa. For the surfers coming from Puntarenas Province the Average Day-Trip Expenditure is US$3.60 and most of them surf 3 to 5 days per week (144 to 240 days per year) in Playa Hermosa. Some surfers coming from Jacó (8km away) reported no expenses in Playa Hermosa.

Surf-related expenses are mostly with surfboard rentals from a small surf school and from local shapers. The closest fully equipped surf shops, car rental agency, and gas station at the time these surveys were conducted were in the city of Jacó, 8 km away. The average daily expenditure does not include transportation costs, since they don't contribute to the local economy of Playa Hermosa.

Surfing Playa Hermosa. Photo: Dixiana Salas

Table 24: Estimated Number of Surf Tourists

Group of Surf Tourists	Estimation	(%)
Intel. & Domestic Surf Tourists (overnight stay)	11,745	80.6
Day-Trip Surfers (same-day visitors)	2,818	19.4
Estimated number of Surf Tourists per year	**14,563**	**100.0**

The estimated number of Surf Tourists staying in Playa Hermosa was calculated by multiplying the following variables: surf town's capacity for tourism accommodation (hotels: 817 beds + AirBnB: 468 beds = 1,285 beds) and the average occupancy rate (high season: 72.1%, low season: 52.9%); weighted average percentage of surf guests (high season: 35.5%, low season: 31.6%); guest turnover ratio (30/8.3 = 3.6); and 6 months per season.

Data on the surf town's capacity for tourism accommodation (bed capacity) came from the survey with 22 local lodging managers (from 16 hotels and 6 AirBnBs) and the analysis of 4 websites: TripAdvisor.com, Booking.com, VacationsCostaRica.com, and AirBnB.com.

Based on the triangulation of primary and secondary data it is estimated that Playa Hermosa has 96 lodging businesses: 18 hotels and 78 AirBnB vacation rentals (excluding long-term rentals). The average bed capacity of AirBnBs in Playa Hermosa is 6 beds per rental and hotel businesses have an average bed capacity of 45 beds per hotel. It is important to note that hotels in Playa Hermosa refer to medium-sized lodging accommodations and are not comparable to the resorts or casinos in Playa Jacó or other larger coastal towns in Costa Rica.

Most of the 18 hotels are found beach front or close to the beach along Playa Hermosa's 7km of surf beach, while most of the AirBnB vacation rentals are in Calle Hermosa, the main road of the surf town which extends from the beach towards the mountains.

Data on the average occupancy rate came from the survey with local lodging businesses and was triangulated with secondary data from the ICT survey. The average occupancy rate reported by the 22 lodging managers is 62.5%, which is slightly lower than the 66.8% found by the ICT survey (ICT, 2020c).

Data to estimate the number of Day-Trip Surfers (same-day visitors) in Playa Hermosa came from the surveys with 71 Day-Trip Surfers, the counts of surfers in the water, and the interviews with 20 Local Surfers. Based on the empirical local knowledge of the Local Surfers and the triangulation of data from the Day-Trip Surfers it is estimated that around 80% of the tourists surfing in Playa Hermosa are Surf Tourists staying in the local town (hotels and AirBnBs), and around 20% are Day-Trip Surfers (same-day visitors). This figure is equivalent to 25% of the number of Surf Tourists. Considering that it is very close to the percentage participation of Day-Trip Surfers (25.9%) in the composition of the survey sample, the estimated number of Day-Trip Surfers is found by calculating 25% of the number of surf tourists.

Economic Impact of Surf Tourists

The direct contribution of surf tourism to the local economy is calculated by multiplying the variables below:

Surf Tourists (overnight stay): estimated number of surfer tourists, average daily expenses, and the average length of stay. Data to calculate these averages came from the surveys with 203 surf tourists.

Day-Trip Surfers (same-day visitors): estimated number of day-trip surfers, average same-day visit expenses, and the average number of same-day visits per year to Playa Hermosa. Data to calculate these averages came from the surveys with 71 Day-Trip Surfers.

Table 25: Estimated Number of Surf Tourists (overnight stay) in Playa Hermosa & Direct Contribution (USD)

Surf Tourists	Average Daily Expenses	Average Length of Stay	Direct Contribution
11,745	$112.76	8.3 days	$10,992,239

The research findings suggest that the waves of Playa Hermosa attract around 11,745 Surf Tourists. On average they stay for 8.3 days and spend US$112.76 per day in the surf town. Their direct contribution to the local economy of Playa Hermosa is estimated to be approximately US$11 million per year.

The ICT survey estimated that in 2019 the general tourists stayed 12.6 days in Costa Rica and spent US$1,438.00, which is equivalent to US$114.13 per day (ICT, 2021b) and slightly higher than the US$112.76 found in this study. Since this Surfonomics study is focused on surf tourists and aims to estimate the direct contribution of surf tourism to the local economy of Playa Hermosa, the average expenses of surf tourists do not include transportation costs, as there are no car rental agencies or gas stations in Playa Hermosa.

Table 26: Estimated Number of Day-Trip Surfers (same-day visitors) in Playa Hermosa & Direct Contribution

Day-Trip Surfers	Average Same-Day Visit Expenses	Average Day Trips per Year*	Direct Contribution
2,818	$10.53	114.0 days	$3,382,784

This empirical study shows that the Day-Trip Surfers (same-day visitors) make a direct contribution estimated at US$3.3 million per year to the local economy of Playa Hermosa.

Among the Day-Trip Surfers, 62% of them come from the Greater Metropolitan Area of Costa Rica (GAM), which is 90km–110km away. The other 38% come from Puntarenas (8km–50km away), the province where Playa Hermosa is located.

On average, surfers coming from GAM surf once or twice a week in Playa Hermosa (48 to 96 days per year) and spend US$15.50 per same-day visit in the surf town while surfers coming from Puntarenas Province surf 3 to 5 days per week in Playa Hermosa (144 to 240 days per year) and spend US$3.60.

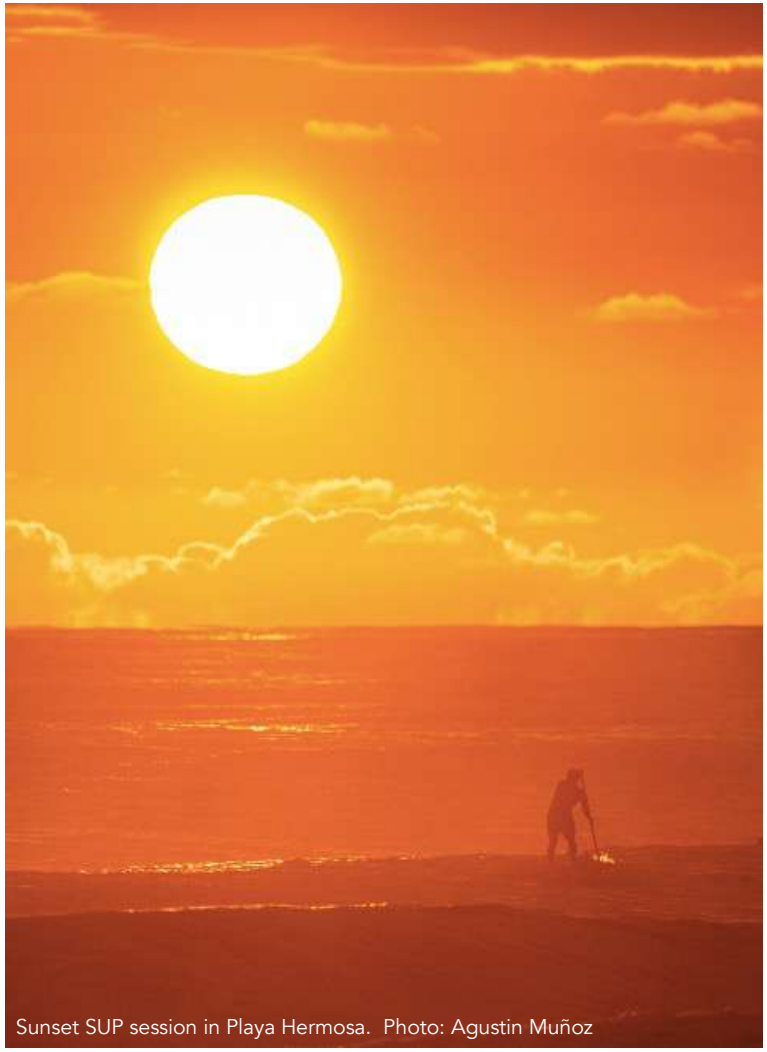
Table 27: Estimated Direct Contribution of Surf Tourism to the Local Economy of Playa Hermosa

Group of Surf Tourists	Estimated Quantity	Direct Contribution	(%)
Surf Tourists (overnight stay)	11,745	$10,992,239	76.5
Day-Trip Surfers (same-day visit)	2,818	$3,382,784	23,5
Total of Direct Contribution	**14,563**	**$14,375,023**	**100.0**

Findings show that the world-class waves of Playa Hermosa attract around 14,500 Surf Tourists per year and that 76.5% of them stay in town while 23.5% are same-day visitors.

Among the surf tourists that stay in Playa Hermosa, 82.7% come from abroad. 70.2% of the international surf tourists come from 3 countries (USA, Brazil and Spain). Surfers coming from the USA make up almost half (45.8%) of the international surf tourists. It is estimated that international and domestic surf tourists (overnight stay) contribute around US$11 million per year to the local economy of Playa Hermosa.

This study also estimates that 2,800 Day-Trip Surfers visit Playa Hermosa (same-day visitors) and spend around US$ 3.3 million per year. Adding these two groups of surf tourists together, this small surf town with less than 1,000 inhabitants receives around 14,500 surf tourists per year. This Surfonomics study estimates that the contribution of surf tourism to the local economy of Playa Hermosa is around US$14.3 million per year.



Sunset SUP session in Playa Hermosa. Photo: Agustin Muñoz

Discussion

Currently, nationally and internationally, the most widely published data (La República, 2020; FSC, 2018; ISA, 2016; The Inertia, 2014; MyPlainView, 2005; SGB Media, 2005) on the economic benefits of surfing for Costa Rica comes from the Costa Rican Tourism Board's survey (ICT,2021b). This survey's method calculates the number of times surfing is selected from a list of general activities experienced by a market sample of target tourists defined by ICT. It subsequently calculates country-wide surf-related income from average general tourism expenditure and general tourism length of stay; thus publishing data from regular tourists, not surf tourists, who had contact with, learned or surfed to some degree during their stay.

Findings of this first empirical study in Costa Rica on surf tourists' demographics and their spending patterns shows that, on average, surf tourists stay 8.3 days in Playa Hermosa and spend US$112.76 per day. This is less than the figures found by ICT with general tourists, who spend an average of 12.6 days in Costa Rica and spend US$114.13 per day (ICT, 2021b). Considering that this Surfonomics doesn't include transportation costs and that surfers usually stay in more than one surf town to enjoy different waves during their surf trip to Costa Rica, it is plausible that surf tourists stay longer in Costa Rica and spend more than general tourists.

Looking at the average daily expenditure found by Surfonomics studies carried out in other World Surfing Reserves, Playa Hermosa's daily expenditure rate is twice as much as in Guarda do Embaú, Brazil (US$61,00) and Huanchaco, Perú (US$45,00), and just slightly more than the US$111.00 found in San Miguel, México, but less than the US$150,00 found in Pichilemu, Chile. Direct comparison among these results may be jeopardized by differences between countries' tourism costs, and between tourists' demographics and their spending patterns.

Playa Hermosa attracts around 14,500 Surf Tourists per year and 76.5% of them stay in the surf town while 23.5% are same-day visitors. Among the surf tourists that stay in the surf town, 82.7% come from 17 countries in North America, Europe, Latin America, Asia, and Australasia. 70.2% of the international surf tourists come from 3 countries (USA, Brazil and Spain). Surfers coming from the USA are almost half of the international surf tourists.

Comparing with the other three World Surfing Reserves in Latin America, Playa Hermosa receives far more surfers from the USA than Huanchaco, Perú and Guarda do Embaú, Brazil together, but less than San Miguel, México, which is just 100km from San Diego, California.

Findings show that 45.8% of the surfers traveled to Costa Rica for the first time and 24.4% of them chose Costa Rica as the destination for their first international surf trip. For 48.8% of the surfers, it was their first time in Playa Hermosa, while 51.2% of the surfers had stayed in the surf town before, suggesting that it is a popular and recurring destination for surf tourists in Costa Rica.

The direct contribution of surf tourists (overnight stay) to the local economy of Playa Hermosa is estimated at US$11 million per year. Adding the US$3.3 million spent by the 2.8 thousand Day-Trip Surfers (same-day visitors) together, this Surfonomics study estimates that the contribution of surf tourism to the local economy of Playa Hermosa is around US$14.3 million per year.

This figure represents a significant contribution of surf tourism to a small surf town with less than one thousand inhabitants. Given that the cost of living in Costa Rica is lower than in developed countries like the USA or Australia, each dollar goes much further in Playa Hermosa, which means that the US$14.3 million per year have a far greater economic impact on the economy, and underscores the value of surfing to Playa Hermosa.

Surf Tourists' Profile

The average age for surf tourists in Playa Hermosa is 33 years old and only 17.1% of them are female.

Regarding education, 21.5% of the surf tourists visiting Playa Hermosa are college students, 61.7% have an education at or above university level, and 10.2% of them have a postgraduate degree.

In comparison with other Surfonomics studies, surf tourists visiting Playa Hermosa are younger on average, represent a lower proportion of female surfers, and have a higher proportion (83.2%) of surfers that are college students or already have a university degree.

In terms of annual income, the modal range of the International Surf Tourists is US$50,000 – US$74,999 while the modal range of the Domestic Surf Tourists & Day-Trip Surfers is US$15,000 – US$29,999, which means that the purchasing power of foreign surf tourists in Costa Rica, particularly from the USA and Europe, is much higher than that of Domestic Surf Tourists. This reflects the significant differences in the economies and costs of living between developed and developing countries, and suggests that foreign tourists have more discretionary income to spend in Playa Hermosa than domestic tourists.

The results also suggest that Playa Hermosa has a complex economy consisting of sporadic visits by International Surf Tourists with higher purchasing power and more frequent, shorter visits from Domestic Surf Tourists and Day-Trip Surfers who spend less per trip but visit more often. The small difference between the high season (72.1%) and low season (52.9%) lodging occupancy rate also suggests that there is a steady surfer visitation to Playa Hermosa year-round. This happens because the best swells occur during the rainy season, which is also the low season for tourism (May-October), thus keeping surfer visitation relatively steady throughout the year. The cumulative yearly contribution of both groups is essential to Playa Hermosa's surf-driven economy.

In relation to the ability of surf tourists visiting Playa Hermosa, only 10.6% are beginners while 63.9% have an intermediate level and 25.5% are advanced or professional surfers. These figures match the information obtained from the interviews with surf travel agencies claiming that Playa Hermosa is popular with intermediate and advanced surfers due to its powerful waves.

74.5% of the surf tourists ride shortboards while 17.9% ride longboards, 12.4% ride bodyboards, and only 5.1% ride stand up paddle (SUP). 12% of the surf tourists ride more than on type of surfboard. This is a reflection of Playa Hermosa's hollow and fast waves which cater best to shortboards.

Playa Hermosa. Photo: Agustin Muñoz

For 88.3% of surfer tourists, surfing is a primary factor influencing their decision to visit Playa Hermosa and for 11.7% of them it was a secondary factor. This confirms that Playa Hermosa is a surf destination for both foreign and domestic surfers. Findings also show that 27.4% of the surf tourists travel alone to Playa Hermosa and 46.3% travel with one partner.

Environmental Threats and Surf Destination Issues

Regarding environmental threats and issues that would negatively impact a surf tourist's decision to return to Playa Hermosa, the most cited is water pollution (93.8%), followed by a change in wave quality (78.1%), trash (63.1%), and sewage (56.2%). Crowded waves were cited by 35.8% of the surfers, and encroaching infrastructure and development was cited by 23.4% of respondents. As other issues, 4.4% of International Surf Tourists mentioned safety concerns (car break-ins) while 2.2% of the Domestic Surf Tourists added crocodiles in the ocean near the river-mouth and red tides (harmful algal blooms).

Lodging managers also mentioned safety issues and the need for police and lifeguards on the beach. Possible solutions presented were to install video cameras at parking lots and showers at the most popular surf spots.

Considering that the practice of surfing relies on the preservation of surf ecosystems, this empirical study also investigated the surf tourists' perception on the environmental threats to Playa Hermosa and their willingness to help address them with a financial contribution.

Findings show that 97.8% of the surfers think the threats to the environment need to be addressed and 89.4% are willing to help with a financial contribution. For 90.6% of the surfers that are willing to help, the preferred way to make a financial contribution is by paying an annual fee to surf in a protected area, while only 6.4% of surfers prefer to help by donating monthly to a surf protected area. The other 3.0% of surfers prefer to help by spending 2% or more in certain services that contribute to wave protection.

Scarlet Macaw of Playa Hermosa. Photo: Abigail Acuña

The most suggested ranges for an annual fee among the International Surf Tourists is US$50 – US$100 while for Domestic Surfers (overnight stay and same-day visitors) the suggested range for the annual fee is US$16 – US$32, which is equal to CRC10,000 – CRC20,000.

Findings show that the average occupancy rate of the hotels and AirBnB vacation rentals and their average percentage of surf guests in 2021 is lower than the ones in 2019, as reported by the 22 local lodging business managers during the interviews. This was expected due to the impact of COVID-19 on tourist visitation.

It is worth mentioning that Costa Rica was one of the first countries to vaccinate its population and create protocols and a sanitary system to ensure tourists' safety (La Republica, 2020), which made it one of the few surfing destinations considered safe during the pandemic.

Fishing at Playa Hermosa. Photo: Dixiana Salas

Conclusions

This Surfonomics study investigated two groups of surf tourists in Playa Hermosa: International and Domestic Surf Tourists with overnight stays and Day-Trip Surfers (same-day visitors). The goal was to understand surf tourists' demographics and spending patterns as well as their views on environmental threats and their perceptions of Playa Hermosa as a surf destination.

Using the Direct Expenditure Method (DEM) of economic valuation, this study was able to quantify that International and Domestic Surf Tourists that stay in Playa Hermosa spend on average US$112.76 per day. Research findings indicate that surfing attracts 11,745 surf tourists to Playa Hermosa per year and that they stay for 8.3 days on average. The result of the multiplication of these variables suggests that International and Domestic Surf Tourists contribute US$11 million to the local economy of Playa Hermosa.

Applying the same method, it quantified that the Day-Trip Surfers coming from the Gran Area Metropolitana and from the Puntarenas Province spend on average US$10.53 in Playa Hermosa per same-day visit. Research findings suggest that 2,818 Day-Trip Surfers visit Playa Hermosa 114 days per year on average. The result of multiplying these variables suggests that the Day-Trip Surfers contribute approximately US$3 million to the local economy.

Adding up the figures for these two groups of surf tourists, this study indicates that **Playa Hermosa's world-class waves attract nearly 15,000 surf tourists that contribute US$14 million per year to the local economy**.

This demonstrates income solely for Playa Hermosa and shows important differences in length of stay and expenditure from the general tourist survey (ICT,2021b). It also highlights differences on the main reason for visiting, age/gender of visitors, number of visits, and traveling companions, evidencing that surfers as a separate segment of tourism are likely to have a higher expenditure at the country level than previously estimated.

Research findings show that water pollution, change in wave quality, trash, sewage, encroaching infrastructure and development, crowded waves and safety issues are the main issues that would negatively impact a visiting surfer's decision to return to Playa Hermosa.

This Surfonomics study used the most basic form of economic valuation to estimate the contribution of surf tourism to the local economy. However, these findings are enough to show that Playa Hermosa is a perfect example of how a surf region can benefit from, and depend on, the protection and management of a world-class waves and the surf ecosystems they comprise. This study highlights the need for decision makers to consider surf tourism as a non-extractive activity that has a significant positive impact on the local economy of Playa Hermosa, and one that should be taken into account when considering coastal management decisions.

The results of this empirical research will support Save The Waves Coalition and Playa Hermosa World Surfing Reserve's Local Stewardship Council in the design of a sustainable coastal urban development master plan to preserve this incredible surf ecosystem for future generations.

As the first Surfonomics study carried out in Costa Rica, we hope that this work will inspire further Surfonomics studies in the country and set the foundation to create a national database for this valuable segment of tourism in Costa Rica.

Almond Tree of Playa Hermosa. Photo: Agustin Muñoz

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Sunset in Playa Hermosa. Photo: Agustin Muñoz

Appendix 1: Surf Tourists Questionnaire

SAVE THE WAVES COALITION

Date: ___/___ Name of the surveyor: _____

Surfonomics Playa Hermosa: **Surf Tourists**

The Playa Hermosa World Surfing Reserve is a project led by the community, commercial representatives and institutions to celebrate, and protect its waves. This work focuses on preserving the ecosystems and its benefits, improving the local and visitor experience, and promoting a sustainable urban development in the area.
With this survey we intend to estimate the contribution of surf tourism to the local economy of Playa Hermosa.
By answering these questions you will be helping us to protect the waves in Playa Hermosa.
Your responses are anonymous.

1. Age: ___ years old. ( ) Male ( ) Female ( ) Prefer not to answer. Country of residence: _____
2. Type of surf practiced: ( ) shortboard ( ) longboard ( ) bodyboard ( ) Stand Up Paddle - SUP
( ) others (skimboard, wind surfing, kite surfing, kayak surfing, etc.)
3. How important was surfing in your decision to visit Playa Hermosa? (please, choose only one):
( ) Surfing was a primary factor ( ) Surfing was a contributing factor
( ) Surfing was not a factor influencing my decision to visit Playa Hermosa
4. How would you describe your surfing skills? ( ) Beginner ( ) Intermediate ( ) Advanced ( ) Pro
5. How many times have you traveled abroad for surfing? ____ times (Q: 5, 6, 7 for foreign surfers only)
6. How many times have you traveled to Costa Rica for surfing? ____ times
7. How many times have you stayed in Playa Hermosa? ____ times
8. What is the total number of days you are going to stay at Playa Hermosa? _____ days
9. How many people usually come with you to Playa Hermosa: ____ people
10. Please estimate your **daily average expenses** (USD) in Playa Hermosa:
Accommodation $_____ Food & Beverage $_____ Other daily expenses (night life, etc.) $_____
11. Please estimate your **total expenses related to surfing** in Playa Hermosa:
Surf gear (board, wax, leash, etc.) $_____ Surf wear (boardshorts, rash guard, sunscreen, etc.) $_____
Services (surf lessons, board repairs, board rentals, massage, yoga, etc.) $_____
12. Please estimate your **total expenses with other products/services** in Playa Hermosa:
Transportation (Car Rental/Transfers, etc.) $_____ Souvenir $_____ Other Expenses $_____
13. What issues in Playa Hermosa would negatively impact your decision to return here? (multiple answers)
( ) Water pollution ( ) Trash ( ) Sewage ( ) Crowded waves ( ) Changes in the quality of waves
( ) Encroaching infrastructure/development ( ) other issues: _____
14. Do you think these threats need to be addressed? ( ) Yes ( ) No If Yes, in order to reduce this threats:
14.1. Would you pay an annual fee to surf in a protected area? ( ) Yes: how much? _____ ( ) No
14.2. Would you donate monthly to a surf protected area? ( ) yes: how much? _____ ( ) No
14.3. Would you spend 2% more in certain services if they contribute to wave protection? ( ) Yes ( ) No
15. What is your highest level of education?
( ) Some High School (student) ( ) High School Diploma ( ) Some College/University (student)
( ) College/University Degree ( ) Graduate Degree
16. Please select your range of income: **annual income in USD** or **monthly income in CRC**
USD: ( )Below $15,000 ( )$15,000 - $29,999 ( )$30,000 - $49,999 ( )$50,000 - $74,999 ( )$75,000 - $99,999
( )$100,000 - $150,000 ( )Above $150,000 ( )Student only ( )No income ( )Prefer not to answer
CRC: ( )Below ¢320,000 ( )¢320,000 - ¢449,999 ( )¢450,000 - ¢599,999 ( )¢600,000 - ¢799,999
( )¢800,000 - ¢1,000,000 ( )¢1,000,000 - ¢3,000,000 ( )Above ¢3,000,000
( )Student only ( )No income ( )Prefer not to answer

Thank you very much for your time!

Would you like to receive the results of this survey? E-mail address: _____

Appendix 2: Day-Trip Surfers Questionnaire

SAVE THE WAVES COALITION

Date: ___/___ Name of the surveyor: _____

Surfonomics Playa Hermosa: **Day-Trip Surfers**

The Playa Hermosa World Surfing Reserve is a project led by the community, commercial representatives and institutions to celebrate, and protect its waves. This work focuses on preserving the ecosystems and its benefits, improving the local and visitor experience, and promoting a sustainable urban development in the area.
With this survey we intend to estimate the contribution of surf tourism to the local economy of Playa Hermosa.
By answering these questions you will be helping us protect the waves in Playa Hermosa.
Your responses are anonymous.

1. Age: ___ years old. ( ) Male ( ) Female ( ) Prefer not to answer. Country of residence: _____
2. Type of surf practiced: ( ) shortboard ( ) longboard ( ) bodyboard ( ) Stand Up Paddle - SUP
( ) others (skimboard, wind surfing, kite surfing, wing surfing, kayak surfing, etc.)
3. How important was surfing in your decision to visit Playa Hermosa (please, choose only one):
( ) Surfing was a primary factor ( ) Surfing was a contributing factor
( ) Surfing was not a factor influencing my decision to visit Playa Hermosa
4. How would you describe your surfing skills? ( ) Beginner ( ) Intermediate ( ) Advanced ( ) Pro
5. How many days per month do you come to surf in Playa Hermosa: _____ days
6. How many people usually come with you to Playa Hermosa: _____ people
7. Please estimate your daily average expenses (CRC or USD) in Playa Hermosa:
Food & Beverage _____ Surf gear rentals _____ Surf gear purchase _____ Other expenses _____
8. What issues in Playa Hermosa would negatively impact your decision to return here? (Ok multiple answers)
( ) Water pollution ( ) Trash ( ) Sewage ( ) Crowded waves ( ) Changes in the quality of waves
( ) Encroaching infrastructure/development ( ) other issues: _____
9. Do you think these threats need to be addressed? ( ) Yes ( ) No If Yes, in order to reduce this threats:
9.1. Would you pay an annual fee to surf in a protected area? ( ) Yes: how much? _____ ( ) No
9.2. Would you donate monthly to a surf protected area? ( ) yes: how much? _____ ( ) No
9.3. Would you spend 2% more in certain services if they contribute to wave protection? ( ) Yes ( ) No
10. What is your highest level of education?
( ) Some High School (student) ( ) High School Diploma ( ) Some College/University (student)
( ) College/University Degree ( ) Graduate Degree
11. What is your range of income: **annual income in USD** or **monthly income in CRC**
USD: ( )Below $15,000 ( )$15,000 - $29,999 ( )$30,000 - $49,999 ( )$50,000 - $74,999 ( )$75,000 - $99,999
( )$100,000 - $150,000 ( )Above $150,000 ( )Student only ( )No income ( )Prefer not to answer
CRC: ( )Below ¢320,000 ( )¢320,000 - ¢449,999 ( )¢450,000 - ¢599,999 ( )¢600,000 - ¢799,999
( )¢800,000 - ¢1,000,000 ( )¢1,000,000 - ¢3,000,000 ( )Above ¢3,000,000
( )Student only ( )No income ( )Prefer not to answer

Thank you very much for your time!

Would you like to receive the results of this survey? E-mail address: _____

Appendix 3: Local Surfers Questionnaire

SAVE THE WAVES COALITION

Date: ___/___ Name of the surveyor: _____

Surfonomics Playa Hermosa: **Local Surfers**

The Playa Hermosa World Surfing Reserve is a project led by the community, commercial representatives and institutions to celebrate, and protect its Waves. This work focuses on preserving the ecosystems and its benefits, improving the local and visitor experience, and promoting a sustainable urban development in the area.
With this survey we intend to estimate the contribution of surf tourism to the local economy of Playa Hermosa.
By answering these questions you will be helping us protect the waves in Playa Hermosa.
Your responses are anonymous.

1. Age: ___ years old. ( ) Male ( ) Female ( ) Prefer not to answer.

2. Type of surf practiced: ( ) shortboard ( ) longboard ( ) bodyboard ( ) Stand Up Paddle - SUP
( ) others (skimboard, wind surfing, kite surfing, wing surfing, kayak surfing, etc.)

3. Frequency of surf practice: _____ hours a day

4. Range of kilometers traveled from home to your favorite surf spot in Playa Hermosa: ___ km

5. Estimated Percentage of International Surf Tourists (overnight stay in Playa Hermosa) and Day-Trip Surfers (same-day visitors):

Days of the Week	Surf Tourists 2019	Day-Trip Surfers 2019	Surf Tourists 2021	Day-Trip Surfers 2021
Weekends:	_____ (%)	_____ (%)	_____ (%)	_____ (%)
Week days:	_____ (%)	_____ (%)	_____ (%)	_____ (%)

6. What issues in Playa Hermosa would negatively impact your decision to leave here? (Ok multiple answers)
( ) Water pollution ( ) Trash ( ) Sewage ( ) Crowded waves ( ) Changes in the quality of waves
( ) Encroaching infrastructure/development ( ) other issues: _____

7. Have you perceived any threats to the waves? ___yes ___no

8. Would you endorse or promote wave protection? ( ) yes ( ) no. If yes, in order to reduce these threats:

8.1. Would you pay an annual fee to surf in a protected area? ( ) yes: how much? _____ ( ) no

8.2. Would you donate monthly to a surf protected area? ( ) yes ( ) no

8.3. Would you spend 2% more in certain services if they contribute to wave protection? ( ) yes ( ) no

9. Estimate the total purchase or rental of products/services related to surfing in Playa Hermosa (per year):
Surf gear (board, wax, leash, etc.) $_____ Surf wear (boardshorts, rash guard, sunscreen, etc.) $_____
Services (board repairs, rentals, etc.) $_____ Other expenses $ _____

Thank you very much for your time!

Would you like to receive the results of this survey? E-mail address: _____

Appendix 4: Lodging Managers Questionnaire

SAVE THE WAVES COALITION

Date: ___/___ Name of the surveyor: _____

Surfonomics Playa Hermosa: **Lodging Managers**

The Playa Hermosa World Surfing Reserve is a project led by the community, commercial representatives and institutions to celebrate, and protect its Waves. This work focuses on preserving the ecosystems and its benefits, improving the local and visitor experience, and promoting a sustainable urban development in the area.
With this survey we intend to estimate the contribution of surf tourism to the local economy of Playa Hermosa.
By answering these questions you will be helping us to protect the waves in Playa Hermosa.

1. Name of the Lodging Business: _____ Manager: _____

2. Maximum capacity of guests: _____ guests (Beds Capacity)

3. Occupancy Rates and Average Length of Stay per guest in 2019 (before the pandemic) and in 2021:

Tourism Seasons	Occupancy Rate 2019	Length of Stay 2019	Occupancy Rate 2021	Length of Stay in 2021
Peak Tourism Season	(%)	days	(%)	Days
Off-Peak Tourism Season	(%)	days	(%)	Days

4. Estimated Percentage of Surfer Guests, including their travel partners:

Tourism Seasons	Surfer Guests 2019	Surfer Guests 2021
Peak Tourism Season	(%)	(%)
Off-Peak Tourism Season	(%)	(%)

5. Factors that you think would negatively impact the tourist's decision to come/return to Playa Hermosa:
( ) Water pollution ( ) Trash ( ) Sewage ( ) Crowded waves ( ) Changes in the quality of waves
( ) Encroaching infrastructure/development ( ) other issues: _____

6. Have you perceived any threats to the waves? ( ) yes ( ) no

7. Would you endorse or promote wave protection programs organized by the **Playa Hermosa World Surfing Reserve** through your business? ( ) yes ( ) no

Thank you very much for your time!

Would you like to receive the results of this survey? E-mail address: _____

About World Surfing Reserves

Mission
Save The Waves' flagship program proactively identifies, designates and preserves outstanding waves, surf zones and their surrounding environments around the world. WSRs represent a global network of designated surfing reserves that are managed, implemented, and protected by local communities.

Background
Save The Waves Coalition, along with key partners National Surfing Reserves (NSR) Australia and the International Surfing Association (ISA), launched World Surfing Reserves in 2009. The initiative creates a global network of Surfing Reserves designed to educate the world about the tremendous universal value of these special places and provide tools to help local communities better protect cherished surf breaks.

How World Surfing Reserves Works
The program is broken down into four main phases: the nomination/application process, the selection process, dedications/enshrinements, and ongoing monitoring and management. After applying and being selected, each WSR location creates a Local Stewardship Council to implement and manage that reserve.

Program Management
World Surfing Reserves Program is governed by a global five-member Executive Committee with the assistance of a Vision Council. Save The Waves Coalition, a 501(c)3 nonprofit organization, serves as fiscal administrator of the initiative. Reserves are implemented through a partnership between WSR and local communities.

To learn more, please visit: www.savethewaves.org/wsr

About SandS

Surf and Sustainability Research Group (SandS) is the first interdisciplinary research group in Brazil, certified by the Brazilian Council for Scientific and Technological Development (CNPq), that studies the challenges and opportunities for a transition towards sustainability in the surfing world. SandS was created in 2017 at the Federal University of Santa Catarina (UFSC), Florianópolis Island, and aims to encourage collaboration between scholars from Brazil and abroad in studies relating to surf and sustainability. SandS works in collaboration with the International Association of Surfing Researchers led by the Center for Surf Research, San Diego State University, California.

To learn more, please visit: www.sands.ufsc.br

Playa Hermosa's A Frame Wave. Photo: Agustin Muñoz

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