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A PROPOSED TOURISM CAP ON THE GALÁPAGOS ISLANDS: BEYOND THE WILDLIFE

HANNAH M. ROBERTSON*

INTRODUCTION

The Galápagos Islands often elicit a core memory of everyone's middle school science teacher discussing Charles Darwin, natural selection, and the notorious finches. Usually accompanying this is imagery of diverse wildlife including prehistoric tortoises, Blue-footed boobies, and marine iguanas—the list could truly continue forever. These topics all deserve attention and academic scholarship, but one focal point often overlooked are the individuals who inhabit the Galápagos Islands. This Note outlines how the Ecuadorian and Galápagos governments should implement a land-based tourism cap to address growing conservation concerns by focusing on the inhabitants and not the wildlife.

Since the discovery of the Galápagos Islands off the coast of Ecuador, it has acquired different nicknames.¹ One of the most notable is the “Enchanted Islands.”² The Islands were originally given this nickname because they would seemingly appear and disappear—explained by strong currents preventing explorers from consistently locating the Islands.³ Although the wildlife on the Galápagos Islands would greatly benefit from this inability to be found, this is no longer a reality. Now, centuries later, in addition to the inhabitants of the Islands, the Galápagos receives approximately 260,000 tourists a year.⁴ The Galápagos are still

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¹ *Galapagos Islands*, ENCYC. BRITANNICA (Sept. 5, 2020), <https://www.britannica.com/place/Galapagos-Islands> [<https://perma.cc/9Z2J-F3YM>]; see Bryan Haines, *Galapagos Islands Names: Guide to All 33 Islands, Islets (Map)*, STORYTELLER TRAVEL (Mar. 11, 2022), <https://storyteller.travel/galapagos-islands-names/> [<https://perma.cc/6836-NUJ3>].

² See *Galapagos Islands*, *supra* note 1; *Fun Facts About the Galapagos Islands*, FRAGATA YACHT (Jan. 17, 2020) [hereinafter FRAGATA YACHT], <https://fragatayachtgalapagos.com/fun-facts-about-the-galapagos-islands/> [<https://perma.cc/T6ZC-XV86>].

³ See FRAGATA YACHT, *supra* note 2.

⁴ See *Travelling Responsibly*, GALÁPAGOS CONSERVATION TR., <https://galapagosconserva>

occasionally referred to as the Enchanted Islands, but now for their immense biodiversity and not for their inability to be found.⁵

Scientists have pleaded to both Galápagos and Ecuadorian officials to impose a tourism cap on land-based tourism to protect the biodiversity of the Islands.⁶ However, these proposals have offered little to no means of addressing the economic concerns or offsetting the impact a tourism cap would have on key revenue-producing industries and locals.⁷ Because of this, proposals for land-based tourism caps have gained little traction within Ecuador and the Galápagos.⁸

This Note should serve as a guide for assessing what tourist restrictions are possible and how those restrictions would be implemented. Part I begins with an overview of the environmental problems the Galápagos Islands are experiencing due to tourism and also how these problems are exacerbated by other factors such as climate change.⁹ Included in Part I is an explanation of the plausibility of a tourism cap and why the Galápagos or Ecuadorian governments would impose a tourism cap against possible local opposition or GDP loss given the right conditions.¹⁰ Part II addresses why a land-based tourism cap is necessary to preserve the biodiversity on the Islands and why current regulations are insufficient to address the environmental problems identified in Part I.¹¹ Part III compares the markets for commodities and services on the Galápagos Islands to similarly situated islands with tourism-based

tion.org.uk/about-galapagos/responsible-tourism/travelling-responsibly/ [https://perma.cc/5GPQ-E75B] (last visited Nov. 13, 2022) (stating that the number of tourists visiting the Galápagos Islands each year is “steadily increasing”). *But see* Matt Kareus, *Galapagos Tourism Declined Slightly in 2019. Is That a Bad Thing?*, INT’L GALÁPAGOS TOUR OPERATORS ASS’N BLOG (Feb. 7, 2020), https://www.igtoa.org/blogs/2019_galapagos_tourism_report [https://perma.cc/82Y2-YRRJ] (stating the number of tourists decreased about 1.7% from 2018 to 2019).

⁵ FRAGATA YACHT, *supra* note 2.

⁶ Rory Carroll, *Tourism Curbed in Bid to Save Galapagos Haven*, GUARDIAN (Oct. 11, 2008, 7:01 PM), https://www.theguardian.com/travel/2008/oct/12/galapagosislands-travelnews [https://perma.cc/UW73-34L6].

⁷ *See* Shivani Vora, *Is Land Tourism Threatening the Galápagos?*, N.Y. TIMES (June 1, 2018), https://www.nytimes.com/2018/06/01/travel/galapagos-land-tourism-overtourism.html [https://perma.cc/Y8V2-BC79].

⁸ *See* WORLD WILDLIFE FOUND., DOES TOURISM GROWTH IN THE GALÁPAGOS ISLANDS CONTRIBUTE TO SUSTAINABLE ECONOMIC DEVELOPMENT? 1–3, 11 (2016), http://d2ouvy59p0dg6k.cloudfront.net/downloads/_eng_sustainabletourism_wolfs_wwfecuador.pdf [https://perma.cc/WA6S-KMCE].

⁹ *See infra* Part I.

¹⁰ *See infra* Part I.

¹¹ *See infra* Parts I–II.

economies.¹² These comparisons will prove prices are below market value on the Islands and how this market failure can be used to implement a tourism cap.¹³ Part IV identifies how different economic mechanisms, including a tax on businesses, would work in relation to the tourism cap in order to address both the environmental and economic concerns on the Islands.¹⁴ Ultimately, even if the policies in this Note are not adopted, it should serve as an awakening to environmental policymakers that in order to successfully mitigate environmental harm, they must consider more than the wildlife.

I. BACKGROUND AND OVERVIEW OF A TOURISM CAP ON LAND-BASED TOURISM

A. *Environmental Problems of the Galápagos Islands Are Connected to Land-Based Tourism*

Although the focus of this Note is the inhabitants of the Galápagos Islands, it must first be discussed why a land-based tourism cap is needed. The Galápagos Islands¹⁵ currently face several environmental problems—some of which are directly caused by tourism, and some of which are only exacerbated by tourism.¹⁶ Overall, some of the key environmental issues the Galápagos Islands are experiencing result from: increases in invasive species,¹⁷ biodiversity loss, land use changes, loss of biological resources, habitat fragmentation, land alterations, and strained resources.¹⁸

The Galápagos Islands are experiencing biodiversity loss in part stemming from an influx of tourists.¹⁹ The islands most affected by

¹² See *infra* Part III.

¹³ See *infra* Part III.

¹⁴ See *infra* Part IV.

¹⁵ The Galápagos is made up of thirteen major islands, six smaller islands, and a myriad of islets. See *Galapagos Islands*, *supra* note 1.

¹⁶ See M. Verónica Toral-Granada, Charlotte E. Causton, Hinke Jäger, Mandy Trueman, Juan Carlos Izurieta, Eddy Araujo, Marilyn Crus, Kerstin K. Zander, Arturo Izurieta & Stephen T. Gernett, *Alien Species Pathways to the Galapagos Islands, Ecuador*, PLOS ONE, Sept. 13, 2017, at 1, 2.

¹⁷ *Id.* Invasive species are “. . . any nonnative species that significantly modifies or disrupts the ecosystem[] it colonizes.” John Rafferty, *Invasive Species*, ENCYC. BRITANNICA (Nov. 17, 2021), <https://www.britannica.com/science/invasive-species> [<https://perma.cc/37S2-LJZW>].

¹⁸ See Francisco Benitez-Capistros, Jean Hugé & Nico Koedam, *Environmental Impacts on the Galapagos Islands: Identification of Interactions, Perceptions and Steps Ahead*, 38 ECOLOGICAL INDICATORS 113, 113 (2014).

¹⁹ See Toral-Granada et al., *supra* note 16.

invasive species are the human-inhabited Santa Cruz, San Cristóbal, Floreana, Isabella, and Baltra Islands.²⁰ Notably, each island does not experience the same level of biodiversity loss because of varying levels of tourism per island.²¹ Yet, invasive species cause a decline in native and endemic species leaving many critically endangered across all islands.²²

Invasive species are often associated with the movement of individuals from one place to another, especially regarding islands.²³ When people travel from mainland Ecuador, to the Galápagos, and between islands, they transfer invasive species—usually unintentionally.²⁴ The greater the number of tourists, the higher the likelihood that invasive species will continue to spread and thereby harm wildlife on the Islands.²⁵ Moreover, because of government regulations on ship-based tourism, there have been increases in land-based tourism.²⁶ This establishes more pathways between islands and therefore creates a higher likelihood of spreading invasive species and biodiversity loss.²⁷

²⁰ *Invasive Species & Biosecurity*, NAT. HABITAT ADVENTURES, <https://aboutgalapagos.nat.hab.com/conservation/introduced-species-and-galapagos-biosecurity/> [https://perma.cc/8T38-DPG2] (last visited Nov. 13, 2022).

²¹ For example, although Floreana still faces environmental issues—some connected to invasive species—most environmental problems on the island cannot be definitively linked to tourism as there is limited access to Floreana. See *Floreana Island*, GALÁPAGOS CONSERVANCY (Nov. 24, 2016), https://www.galapagos.org/about_galapagos/the-islands/floreana-island/ [https://perma.cc/DU34-SFRX] (stating “transportation to and from Floreana is very limited, with a boat from Santa Cruz Island arriving, on average, every two weeks”). See also *Island Profile: Floreana*, GALÁPAGOS CONSERVATION TR., <https://galapagosconservation.org.uk/island-profile-floreana/> [https://perma.cc/9QZG-QX98] (last visited Nov. 13, 2022).

²² *Ecology and Habitats*, GALÁPAGOS CONSERVATION TR., <https://www.discoveringgalapagos.org.uk/discover/life-on-the-islands/ecology-and-habitats/environmental-threats/> [https://perma.cc/XXB3-H7ZY] (last visited Nov. 13, 2022). Endemic species are found nowhere else on Earth which makes them critically important to protect. “About 80% of the land birds you will see, 97% of the reptiles and land mammals, and more than 30% of the plants are endemic. More than 20% of the marine species in Galapagos are found nowhere else on earth.” *Biodiversity*, GALÁPAGOS CONSERVANCY, https://www.galapagos.org/about_galapagos/about-galapagos/biodiversity/ [https://perma.cc/7NZH-2ZFJ] (last visited Nov. 13, 2022).

²³ It is worth noting that some invasive species are traceable to local inhabitants rather than tourists, such as cats, goats, and donkeys. Allison Shaw, *Causes and Consequences of Individual Variation in Animal Movement*, 8 MOVEMENT ECOLOGY, no. 12, 2020, 1, 8; Toral-Granada et al., *supra* note 16, at 2.

²⁴ Toral-Granada et al., *supra* note 16, at 2.

²⁵ *Id.*

²⁶ *Id.* at 14.

²⁷ *Id.*

Invasive species are not only expensive to regulate, which is discussed in the government’s cost-benefit analysis below in Section I.B, but also, targeted solutions to address invasive species do not mitigate the overall environmental issues that result from excessive land-based tourism.²⁸ For example, government employees monitor and scan every visitor’s bag when departing and entering an island “to captur[e] and remov[e] invasive mammals and plants.”²⁹ This tactic has proven to be *somewhat* successful in detecting invasive species—“Ecuadorian and international tourists are responsible for at least 69% of the products confiscated by biosecurity inspectors”³⁰ However, this approach of detection and confiscation does not address the underlying problem that “tourism [is] a high risk pathway” for invasive species.³¹ Biosecurity inspectors’ detection and confiscation inadequately addresses the root problems of invasive species and does not address the other environmental issues caused by land-based tourism.

Beyond increases in invasive species, tourism has a direct impact on the demand of goods on the Galápagos Islands.³² With increases in tourism, additional ships must travel from the mainland to the Islands with supplies. More ships must travel to transport garbage off the Islands. And more ships must travel to import oil and gas for energy.³³ Increases in shipping to keep up with demand often result in a higher number of invasive species.³⁴

Moreover, oil spills, which adversely impact marine life species surrounding the Islands, increase with the higher demand for imports

²⁸ See *infra* Section I.B.

²⁹ *Invasive Species*, GALÁPAGOS CONSERVATION TR., <https://galapagosconservation.org.uk/about-galapagos/conservation/invasive-species/> [<https://perma.cc/UT8U-THDW>] (last visited Nov. 13, 2022).

³⁰ Toral-Granada et al., *supra* note 16, at 14.

³¹ *Id.*

³² See *Sustainable Tourism*, GALÁPAGOS CONSERVATION TR., <https://www.discoveringgalapagos.org.uk/discover/sustainable-development/sustainable-tourism/impacts-of-tourism/> [<https://perma.cc/HY2N-HFSY>] (last visited Nov. 13, 2022).

³³ Although all the islands primarily rely on diesel for energy consumption, there has been some movement towards renewable energies. For example, San Cristóbal launched its Wind Project in 2007; after six years of operation, the Wind Project is responsible for about 31% of the island’s energy consumption and saved approximately 1.6 million gallons of diesel fuel. *A Sustainable Galapagos*, GALÁPAGOS CONSERVATION TR., <https://www.discoveringgalapagos.org.uk/discover/sustainable-development/a-sustainable-galapagos/renewable-energy/> [<https://perma.cc/8S5H-9VV4>] (last visited Nov. 13, 2022).

³⁴ See Travis Warziniack, David Finnoff & Jason F. Shogren, *Public Economics of Hitchhiking Species and Tourism-Based Risk to Ecosystem Services*, 35 RES. & ENERGY ECON. 277, 291–92 (2013).

and exports.³⁵ Unfortunately, oil spills are not infrequent when transporting oil from mainland Ecuador to the Islands.³⁶ During the 2001 Jessica Oil Spill, about “180,000 gallons were lost,” which spilled off Wreck Bay near San Cristóbal Island.³⁷ Although there were cleaning efforts, the fuel was dense and sunk, killing large amounts of algae that were essential to various food chains on the Islands.³⁸ Studies estimate that there was approximately a 60% reduction of marine iguanas on Santa Fe Island, likely because of the iguanas’ consumption of the diesel fuel.³⁹ Other animals were also impacted including sea lions, pelicans, and Blue-footed boobies.⁴⁰ More recently, there was another oil spill in the Galápagos in 2019 that resulted in 600 gallons of diesel fuel entering the port of San Cristóbal Island.⁴¹ Although Ecuadorian Environment Minister Raul Ledesma asserted “[n]ot a single species has been affected by the spill . . .”⁴² SOS Galapagos advocacy group claimed that the operation was “illegal and dangerous.”⁴³ There has not been any more reporting or studies on the oil spill since Minister Raul Ledesma made his announcement.⁴⁴ A reduction in tourism—which can be achieved through a land-based tourism cap—would decrease invasive species and the demand for diesel on the Islands.⁴⁵ A decreased demand for oil would result

³⁵ *A Sustainable Galapagos*, *supra* note 33.

³⁶ *See, e.g.*, Helena de Moura, *600 Gallons of Oil Spilled in Waters off Galapagos Islands*, CNN TRAVEL (Dec. 25, 2019, 4:17 PM), <https://www.cnn.com/2019/12/23/americas/galapagos-spill-intl-hnk/index.html> [<https://perma.cc/U7SY-U9M4>]; *Oil Spill Galapagos Islands’ Worst Disaster*, *GUARDIAN* (Jan. 22, 2001, 11:41 AM), <https://www.theguardian.com/environment/2001/jan/22/oilspills.endangeredspecies> [<https://perma.cc/AQ9G-N2B3>].

³⁷ Charlie Henry & Edwin Levine, *NOAA’s Response to the Jessica Oil Spill in the Galapagos Archipelago*, INT’L OIL SPILL CONF. PROC., 2003, at 1, 4.

³⁸ *See* Andrew C. Revkin, *Rare Iguanas in Galapagos Are Victims of Oil Spill*, N.Y. TIMES (June 5, 2002), <https://www.nytimes.com/2002/06/05/international/rare-iguanas-in-galapagos-are-victims-of-oil-spill.html> [<https://perma.cc/M6UK-5GHJ>].

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ De Moura, *supra* note 36.

⁴² *Diesel Spill in Galápagos Under Control; No Wildlife Harmed*, GALÁPAGOS CONSERVANCY (Jan. 14, 2020), <https://www.galapagos.org/newsroom/diesel-spill-in-galapagos-under-control-no-wildlife-harmed/> [<https://perma.cc/JY95-F67V>].

⁴³ De Moura, *supra* note 36.

⁴⁴ Although the Minister claims there are no adverse impacts on *any* wildlife, oil spills are known for having hidden damages years or even decades down the line. *See* Justin Gillis & Leslie Kaufman, *After Oil Spills, Hidden Damage Can Last for Years*, N.Y. TIMES (July 17, 2010), <https://www.nytimes.com/2010/07/18/science/earth/18enviro.html> [<https://perma.cc/M3CD-G2M7>].

⁴⁵ *See* Lucy G. Anderson, Steve Roccliffe, Neal R. Haddaway & Alison M. Dunn, *The Role*

in a reduction of transporter ships and therefore would decrease the likelihood of oil spills.⁴⁶

Reducing fossil fuel consumption on the Galápagos Islands would also reduce government expenditure as fossil fuels are heavily subsidized on the Islands.⁴⁷ As explained further below, any funds the Galápagos and Ecuadorian governments save can offset the economic impacts of a land-based tourism cap.⁴⁸

A land-based tourism cap would not resolve all environmental concerns, but tourism is intricately connected to key environmental issues the Islands currently face. Certainly the Islands experience issues stemming from climate change,⁴⁹ which cannot be connected to any single tourist visiting the Islands—although flights, transportation to, from, and on the Islands, and increased consumption on the Islands all contribute to emissions.⁵⁰ But, even with issues such as climate change, a reduction in tourism could mitigate some of the environmental impacts.⁵¹ For example, climate change and El Niño and La Niña patterns cause extreme weather events, which have become more frequent and intense.⁵² These weather events already strain native and endemic species on the Islands, which is exacerbated by tourism.⁵³ Reducing the impact of tourists on wildlife will not solve the underlying issue of climate change, but it will partially mitigate its impacts on the Islands.

A tangible way that climate change and tourism interplay is through increases in the risk of oil spills and therefore the impact of oil

of Tourism and Recreation in the Spread of Non-Native Species: A Systemic Review and Meta-Analysis, 10 PLOS ONE, no. 10, 2015, at 1, 13.

⁴⁶ See Gillis & Kaufman, *supra* note 44.

⁴⁷ Diana V. Burbano, Juan Carlos Izurieta, Thomas C. Meredith & Diego Quiroga Ferri, “Rethink and Reset” *Tourism in the Galapagos Islands: Stakeholders’ View on the Sustainability of Tourism Development*, ANNALS TOURISM RSCH. EMPIRICAL INSIGHTS, Nov. 2022, at 1, 7.

⁴⁸ *Id.* at 7–8.

⁴⁹ As the effects of climate change become more prominent, islands around the world face unique problems such as severe erosion, rising sea levels, flooding, and sea acidification. Saber Salem, *Climate Change and the Sinking Island States in the Pacific*, E-INT’L RELS. (Jan. 9, 2020), <https://www.e-ir.info/2020/01/09/climate-change-and-the-sinking-island-states-in-the-pacific/> [https://perma.cc/2FTX-ZBPV].

⁵⁰ See M. Klöwer, M.R. Allen, D.S. Lee, S.R. Proud, L. Gallagher & A. Skowron, *Quantifying Aviation’s Contribution to Global Warming*, ENV’T RSCH. LETTERS, Oct. 2021, at 1, 1.

⁵¹ *See id.*

⁵² Int’l Union for Conservation of Nature & Nat. Res., *Galápagos Islands*, WORLD HERITAGE OUTLOOK (Dec. 8, 2020) [hereinafter IUCN & Nat. Res.], <https://worldheritage.outlook.iucn.org/explore-sites/wdpaid/191> [https://perma.cc/38TW-KFXH].

⁵³ *See id.*

spills. With the impacts of weather from climate change, it can become more difficult to navigate to and from the Islands which increases the potential for oil spills or wrecks.⁵⁴ Decreasing land-based tourism will not solve the problem of increased navigable hazards from climate change, but it will mitigate or temper the risks in transportation. Additionally, in warmer ocean temperatures, oil spreads more quickly due to a decrease in the liquid's surface tension and will disperse rather quickly.⁵⁵ With increases in ocean temperatures from climate change, greater spreading during oil spills can be expected, which makes clean-up efforts more difficult and diminishes the ability to protect wildlife.⁵⁶ Limiting tourists and thereby decreasing the amount of oil transported to the Islands will not necessarily impact the temperatures of the surrounding waters, but decreasing land-based tourism is a way to lower the amount of ships transporting oil to the Islands in hopes that this will decrease the likelihood of future oil spills.

The International Union for Conservation of Nature ("IUCN") World Heritage Outlook identifies climate outlooks around the world and has assessed the Galápagos Islands conservation outlook to be of "significant concern."⁵⁷ The assessment identifies a trend of deterioration on the Islands, labeling its "current state and trend[s]" as "high concern" due mainly to "invasive species, human activities, and climate change."⁵⁸ Additionally, the assessment identifies tourism as a "high threat."⁵⁹ This highlights the environmental danger of an increase in demand for goods imported from the mainland to the Islands. A cap on land-based tourism would directly address many of these environmental concerns and indirectly work to mitigate the dangers of climate change.

B. The Plausibility of a Tourism Cap: Why Would Ecuador or the Galápagos Impose One?

Although tourism accounts for most of the revenue produced by the Galápagos Islands,⁶⁰ the Galápagos and Ecuadorian governments

⁵⁴ *See id.*

⁵⁵ EPA, UNDERSTANDING OIL SPILLS AND OIL SPILL RESPONSES 5 (1999), <https://www.epa.gov/sites/default/files/2018-01/documents/ospguide99.pdf> [<https://perma.cc/SW8H-DLND>].

⁵⁶ *Id.*

⁵⁷ IUCN & Nat. Res., *supra* note 52.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Bruce Epler, Graham Watkins & Susana Cárdenas, *Tourism and the Galapagos Economy*, in GALAPAGOS REP. 2006–2007 42, 47 (2007).

should, and likely would, implement a land-based tourism cap. Both the Galápagos and Ecuadorian governments have outlined environmental concerns and plans to mitigate environmental harms.⁶¹ The governments have not explicitly stated that they perform a cost-benefit analysis to determine which regulations are worth pursuing and which are not when it comes to conservation.⁶² However, the governments are effectively performing a cost-benefit analysis when they weigh the environmental considerations outlined in their policies and laws against the economic impact those regulations would have.⁶³ Therefore, to determine if the Galápagos or Ecuadorian governments would impose a tourism cap, a cost-benefit analysis must be considered. Identifying the factors that the Ecuadorian and Galápagos governments used to make prior decisions regarding environmental regulations can then be used in determining the plausibility of a tourism cap.

In the 2007–2010 National Development Plan, the Ecuadorian government highlighted barriers to environmental conservation including accelerated biodiversity loss; accelerated extraction of marine and coastal resources; environmental pollution and inadequate waste management; degradation of water resources and unequal access; consequences of climate change; and insufficient extension and management of protected areas, which all directly relate to environmental problems the Galápagos Islands are experiencing.⁶⁴ The Ecuadorian government acted to mitigate these issues because of fear that the Galápagos could lose its status as a World Heritage Site.⁶⁵

The Galápagos Islands were designated by the UNESCO World Heritage organization as having outstanding universal value to humanity because of the immense diversity of marine life forms, flora, and fauna, which need to be protected from threats such as overexploitation of marine resources, increased tourism, invasive species, and demographic growth.⁶⁶ The importance of tourism to the Islands and also the

⁶¹ U.N. DEV. PROGRAMME, ASSESSMENT OF DEVELOPMENT RESULTS EVALUATION OF UNDP CONTRIBUTIONS: ECUADOR 1, 18 (2008) [hereinafter UNDP], <https://www.oecd.org/countries/ecuador/46810541.pdf> [<https://perma.cc/V9M2-6G6X>].

⁶² *Id.* at 3, 18, 21.

⁶³ For an explanation of cost-benefit analyses in environmental policy, see OECD, COST-BENEFIT ANALYSIS & THE ENVIRONMENT: FURTHER DEVELOPMENTS & POLICY USE (2018), <https://www.oecd.org/env/tools-evaluation/CBA-brochure-web.pdf> [<https://perma.cc/HP8Y-5MVB>].

⁶⁴ UNDP, *supra* note 61, at 18.

⁶⁵ *Id.* at 19.

⁶⁶ See *What is World Heritage?*, UNESCO, <https://whc.unesco.org/en/faq/19> [<https://perma.cc/Y6V8-2F8Q>] (last visited Nov. 13, 2022).

national economy partially rests on the status of the Galápagos as a protected area and a World Heritage Site.⁶⁷ Because Ecuador highly values this status, and felt threatened by the IUCN evaluation,⁶⁸ the government issued an Executive Decree “in 2007 declaring an environmental emergency in the Galápagos and mandating an action plan.”⁶⁹ Since 2007, the IUCN has expressed greater concern about environmental issues in the Galápagos, which means that the government should weigh the environmental concerns more heavily in a cost-benefit analysis than when they decided to issue the Executive Decree in 2007.⁷⁰

International actors also recognize the Galápagos Islands as important largely due to the biodiversity and scientific value the Islands hold.⁷¹ Moreover, both the Ecuadorian and Galápagos governments recognize the importance of biodiversity for the tourism industry and future economic prosperity which is why they have imposed regulations on the tourism industry in the past.⁷²

The two governments have also previously forgone opportunities to increase revenue⁷³ and expended money to impose restrictions on tourism

⁶⁷ Liliana Ballesteros-Mejia, Elena Angulo, Christophe Diagne, Brian Cooke, Martin A. Nuñez & Franck Courchamp, *Economic Costs of Biological Invasions in Ecuador: The Importance of the Galapagos Islands*, 67 *NEOBIOTA* 375, 379, 388 (2021).

⁶⁸ See *Galápagos Islands Added to the World Heritage Danger List*, INT'L UNION FOR CONSERVATION OF NATURE (June 27, 2007) [hereinafter IUCN], <https://www.iucn.org/content/galapagos-islands-added-world-heritage-danger-list> [<https://perma.cc/3NLT-67E5>].

⁶⁹ UNDP, *supra* note 61, at 19.

⁷⁰ See *id.*; see also IUCN, *supra* note 68, at 2.

⁷¹ See *Galápagos Marine Reserve Earns Prestigious Blue Park Award*, WILDAID (Oct. 24, 2019), <https://wildaid.org/galapagos-marine-reserve-earns-prestigious-blue-park-award/> [<https://perma.cc/G7SJ-JWKP>].

⁷² See *Biodiversity*, GALÁPAGOS CONSERVANCY, https://www.galapagos.org/about_galapagos/about-galapagos/biodiversity/ [<https://perma.cc/SDG2-CHJ8>] (last visited Nov. 13, 2022); see also Stijn Schep, Mirte Ruesen, Viviana Luján Gallegos, Pieter van Beukering & Wouter Botzen, *Does Tourism Growth on the Galápagos Islands Contribute to Sustainable Economic Development?*, INST. FOR ENV'T STUD., Oct. 2014, at 1, 13, https://www.gobiernogalapagos.gob.ec/wp-content/uploads/downloads/2019/08/Estudio_2-Schep_et_al_Tourism_valuation_and_CBA_in_Galapagos.pdf [<https://perma.cc/Q6TX-HNGG>]. Tourists' primary interest in visiting the Galápagos has been documented as the vast array of wildlife that lives on and around the islands. Clayton Mazur, Tiffany Galush, Randy Moore & Sehoya Cotner, *Primary Motivations of Tourists Visiting Galapagos: Do Tourists Visit the Archipelago to Learn About Evolution?*, 11 *EVOLUTION: EDUC. & OUT-REACH*, no. 9, 2018, at 1, 3, 4. Accompanying this answer from surveyed tourists were activities that largely involved observing animals such as snorkeling, diving, and tours of the National Park. *Id.* at 6.

⁷³ Although there is not a consistent yearly evaluation of the revenue that is reportedly brought in by the Galápagos Islands, estimates approximate the amount of revenue

which indicates that the governments are willing, at least in some instances, to impose regulations on tourism to protect the biodiversity and future of the Islands despite economic loss.⁷⁴

Importantly, Ecuador's ocean and coastal policies, in part, focus on heritage, and the Ecuadorian government has outlined two important policy objectives.⁷⁵ The first objective, which pertains most significantly to the Galápagos, focuses on “[c]onserv[ing] the natural and cultural heritage, ecosystems and biological diversity inherent to the marine and coastal zone, respecting the rights of nature in continental Ecuador, the Galapagos archipelago, the territorial sea, the contiguous zone, the exclusive economic zone and Antarctica.”⁷⁶ Further, the underlying principles of conservation and protection of the Islands date back to the 1950s when a group of scientists and conservationists established the Charles Darwin Foundation for the Galápagos Islands, partnering with the Ecuadorian government, in order to educate individuals, address the pervasiveness of invasive species, and protect endangered species.⁷⁷ These underlying principles to protect the Galápagos would hold little significance unless the Galápagos or Ecuadorian governments were willing to enforce regulations and take other measures to protect the Islands.⁷⁸

Fortunately, regulations have been implemented in support of these underlying principles of conservation to protect the Galápagos Islands. For example, the Organic Environmental Code prohibits the construction of permanent structures, facilities, or infrastructure that would impact the landscape or alter the defenses of beaches.⁷⁹ Included in this Code is

produced by the tourist industry at about 143 million USD a year. *Sustainable Tourism*, *supra* note 32. The entrance fee is currently \$100 per adult and \$50 per child. *Id.*

⁷⁴ Further, the tourism industry is essential to not only the economic prosperity of the Islands—evident from the over \$50 million loss due to the seven-week ban on tourists during COVID-19—but for the biodiversity itself. *The Islands That Once Inspired Charles Darwin Struggle to Adapt to the Coronavirus*, L.A. TIMES (May 11, 2020, 8:29 AM) [hereinafter L.A. TIMES], <https://www.latimes.com/world-nation/story/2020-05-11/pandemic-upends-life-on-isolated-idyllic-galapagos-islands> [<https://perma.cc/MMC4-S3CM>]. The local reliance on tourism ensures that locals in turn care for the ecosystems and natural habitats to sustain the tourism industry.

⁷⁵ Carlos Mestanza-Ramón, J. Adolfo Chica-Ruiz, Giogio Anfuso, Alexis Mooser, Camilo M. Botero & Enzo Pranzini, *Tourism in Continental Ecuador and the Galapagos Islands: An Integrated Coastal Zone Management (ICZM) Perspective*, WATER, June 2020, at 1, 7.

⁷⁶ There are other objectives; however, they are either not pertinent to the preservation of the Islands or they do not have implications in opposition to the preservation of the Islands. *See id.*

⁷⁷ *History of Galápagos*, GALÁPAGOS CONSERVANCY, https://www.galapagos.org/about_galapagos/history/ [<https://perma.cc/PXD7-2XZZ>] (last visited Nov. 13, 2022).

⁷⁸ *See id.*

⁷⁹ Mestanza-Ramón et al., *supra* note 75, at 8, 9, 14.

a complete prohibition on the taking of shells, sand, and other nonrenewable resources.⁸⁰ Ecuador and the Galápagos governments are willing to expend money and resources to enforce these regulations, which is evident from hired biosecurity at ports and airports who detect these types of objects.⁸¹

Not only is the government willing to expend money and resources to protect the Islands but they have also forgone opportunities that would increase revenue from the tourism industry. Other islands and prevalent beach areas that receive revenue from tourism have built structures and infrastructure on beaches in order to increase revenue from beach activities.⁸² For example, the Commissioner of Wildwood recently proposed the leasing of beach property for beach boxes, beach bars, and cabanas in order to bring in more revenue.⁸³ Many other islands that rely on tourism for revenue do not prohibit the construction of structures on beaches in order to protect the wildlife and ecosystems such as Antigua; Rincon, Puerto Rico; Jost Van Dyke, British Virgin Islands; and Anguilla.⁸⁴ The building of these structures, especially on islands with fragile ecosystems, directly harms wildlife and biodiversity.⁸⁵ However, the Ecuadorian and Galápagos governments are willing to forgo the revenue that these structures would produce in order to protect the ecosystems and wildlife.⁸⁶ This is even more significant because, not only do structures like these bring in direct revenue from tourists, but greater infrastructure and activities that attract or appeal to tourists on other islands and similar vacation places draw tourists away from traveling to places such as the Galápagos Islands and draws them to the other islands and vacation

⁸⁰ *Id.* at 9.

⁸¹ Toral-Granada et al., *supra* note 16, at 14.

⁸² See *Wildwood Considers Beach Bars Among Ways to Increase Revenue*, BOARDWALK BLOG & NEWS (Feb. 14, 2012) [hereinafter BOARDWALK BLOG & NEWS], <https://watchthetramcarplease.com/wildwood-considers-beach-bars-among-ways-to-increase-revenue/> [https://perma.cc/C3TS-SFJS].

⁸³ *Id.*

⁸⁴ Sarah Greaves-Gabbadon & Melanie Reffes, *Best Caribbean Beach Bar (2020)*, USA TODAY, <https://www.10best.com/awards/travel/best-caribbean-beach-bar-2020/> [https://perma.cc/NE22-FYTV] (last visited Nov. 13, 2022).

⁸⁵ *LEARN: What Affects Beach Health*, EPA (June 22, 2022), <https://www.epa.gov/beaches/learn-what-affects-beach-health> [https://perma.cc/L4G4-7U4B].

⁸⁶ *Pew Bertarelli Ocean Legacy Applauds Commitment to Extend Galápagos Islands' Marine Protections: Ecuador's Iconic Ecosystem Faces Mounting Threats from Industrial Fishing and Climate Change*, PEW CHARITABLE TRS. (Nov. 1, 2021), <https://www.pewtrusts.org/en/about/news-room/press-releases-and-statements/2021/11/01/pew-bertarelli-ocean-legacy-applauds-commitment-to-extend-galapagos-islands-marine-protections> [https://perma.cc/S7GG-TB3Y].

places. Although the Galápagos and Ecuadorian governments has permitted some construction of structures, the limit is relatively low compared to other similarly inhabited islands.⁸⁷ This further proves the sacrifice in revenue the Ecuadorian and Galápagos governments are willing to make.⁸⁸

Most significantly, Ecuador and the Galápagos governments have imposed significant regulations on ship-based tourism,⁸⁹ which strongly indicates the governments could be willing to impose other significant regulations on tourism if they believed it were necessary to ensure the protection of the Islands. The governments imposed a cap on the total number of beds allowed per ship—a new ship is only allowed if a ship of comparable size is retired.⁹⁰ This has resulted in reduced ecological impact of tourists, protection of wildlife, and less overcrowding.⁹¹ Additionally, there are regulations that limit how many times a cruise ship may visit an island, which places the responsibility on tourists to actually research the Islands in order to diminish the impact they have on the wildlife and island ecosystems.⁹² The limit to cruise ship tourism diminished the revenue that all stakeholders, including local Galápagos residents, the government, and cruise ship operators, rely on.⁹³

Further, one of the significant draws of the Galápagos Islands is not just the wildlife but the ability to observe the animals from such a close distance which is unique to the Galápagos.⁹⁴ Yet, the governments believe that protecting wildlife and their ecosystems is important and

⁸⁷ See Greaves-Gabbadon & Reffes, *supra* note 84.

⁸⁸ See BOARDWALK BLOG & NEWS, *supra* note 82.

⁸⁹ Ivanna Zauzich, *Tourism and Conservation in the Galapagos Islands*, METRO.TOURING (Sept. 14, 2017), <https://www.metropolitan-touring.com/tourism-conservation-galapagos-islands/> [<https://perma.cc/UNL9-YMSK>].

⁹⁰ Marc Patry, *20% Growth in Land-Based Tourism Last Year—Can This Continue?*, CNH TOURS (Feb. 1, 2019), <https://www.cnhtours.com/news/2019/2/1/20-growth-in-land-based-tourism-last-year-can-this-continue/> [<https://perma.cc/4AE3-B2XM>].

⁹¹ *Id.*

⁹² Donna Tunney, *Galapagos Establishes New Landing Rules for Cruise Ships*, TRAVEL WKLY. (July 11, 2011), <https://www.travelweekly.com/Cruise-Travel/Galapagos-establishes-new-landing-rules-for-cruise-ships> [<https://perma.cc/229E-CL6B>].

⁹³ Andres Paez, *Why Are Cruises So Important for the Galapagos' Development?*, GALAGENTS (Oct. 14, 2021), <https://www.galagents.com/blog/why-are-cruises-so-important-for-the-galapagos-development/> [<https://perma.cc/5RP4-8GRD>].

⁹⁴ Animals in the Galápagos are largely unafraid of human interactions and will let tourists and other individuals extremely close. This has allowed scientists to conduct research on animals without causing significant harm to the animals and their habitats. *Tourism: Boon or Threat For the Galapagos?*, DEUTSCHE WELLE, <https://www.dw.com/en/tourism-boon-or-threat-for-the-galapagos/a36930500> [<https://perma.cc/5J2T-YDAD>] (last visited Nov. 13, 2022).

should be regulated to ensure their conservation.⁹⁵ Therefore, while in the Galápagos, tourists and other individuals may not unfetteredly explore the island, but must stay within designated marked trails at visitor centers and may not come within six feet of wildlife.⁹⁶ Although it is questionable how well these regulations are enforced absent a National Park tour guide, the regulation is generally respected and enforced through community accountability at a minimum and fines at a maximum.⁹⁷

The governments have used the underlying principles of conservation and protection of the Islands to justify the regulations imposed on tourism,⁹⁸ to expend money to protect the natural resources and ecosystems of the Islands, and to forgo revenue producing opportunities in the tourist industry. All indicate that the government could be willing to impose future regulations—such as a land-based tourism cap—if plausible and necessary.⁹⁹

Further, the Ecuadorian and Galápagos governments may be encouraged to impose a land-based tourism cap because of recent tourist satisfaction rankings.¹⁰⁰ Tourists are saying “they find the Islands surprisingly crowded with tourists,” and their “rankings of the wildlife and beauty of the Islands have steadily decreased.”¹⁰¹ Despite these expressed dissatisfactions, visitor numbers continue to increase.¹⁰² A land-based tourism cap may be a tool for the Ecuadorian and Galápagos governments not only to protect the Islands, but to rectify growing discontent amongst visitors.

II. A LAND-BASED TOURISM CAP IS NECESSARY TO PRESERVE BIODIVERSITY DUE TO INSUFFICIENT GOVERNMENT POLICIES

The tourism industry on the Galápagos Islands sustains 80% of the population's jobs which is largely why the government has not imposed a tourism cap thus far.¹⁰³ This may call into question why the

⁹⁵ See *Galapagos National Park Rules*, GALÁPAGOS CONSERVANCY, <https://www.galapagos.org/travel/travel/park-rules/> [https://perma.cc/8G33-HCZJ] (last visited Nov. 13, 2022).

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ When the Ecuadorian government imposed these regulations on tourism, there was little backlash from tourists in the form of outspokenness or decreased demand to travel to the Islands specifically linked to the regulations. See *Sustainable Tourism*, *supra* note 32.

⁹⁹ See *infra* Section I.B.

¹⁰⁰ See *Sustainable Tourism*, *supra* note 32.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ Onno Van Den Heuvel, *Make Charles Darwin Proud; Save the Galapagos from Your*

Galápagos government was willing to impose a cap on the amount of cruise ships permitted to enter the waters around the Islands. At one point, the Ecuadorian government completely banned large cruise ships from docking off the coast of the Galápagos Islands and did not allow individuals to travel that way to the Islands for three years.¹⁰⁴ The governments' main reasons for the ban were the effects that are now being seen through land-based tourism, which occurred because of cruise-ship-based tourism.¹⁰⁵

Additionally, according to the Galápagos National Park, land-based tourism has seen a steady increase, excluding the impact of COVID-19.¹⁰⁶ From the years of 2007 to 2016, visitors to the Islands increased 39% and visitors on land-based tours increased 92%.¹⁰⁷ There are many explanations for why land-based tourism has increased.¹⁰⁸ One of the reasons is because of a large increase in hotel construction.¹⁰⁹ In 2006, the Charles Darwin Foundation reported sixty-five hotels located on the Islands as compared to the 317 hotels in 2017, according to the Galápagos Tourism Observatory.¹¹⁰ This large increase has driven prices down in the hotel and hostel tourism industries on the Islands, thereby attracting larger numbers of tourists.¹¹¹ The significant increase in tourists required the building of infrastructure and thereby an increase in shipments from the mainland, which both significantly impact the wildlife and ecosystems of the Galápagos. Current policies and environmental movements fail to address this issue.

The increased demand for hotels also puts greater stress on the practically non-existent sewage system.¹¹² Specifically, in San Cristóbal Island, whenever it rains, the waters surrounding the boardwalk—where many of the hotels and hostels are located—turn a dark brown, not

Living Room, U.N. DEV. PROGRAMME BLOG (Feb. 10, 2021), <https://www.undp.org/blog/make-charles-darwin-proud-save-galapagos-your-living-room> [<https://perma.cc/7K75-3FZ5>].

¹⁰⁴ Paul Sherman, *Travel Advisory; Large Cruise Ships Barred from Galapagos*, N.Y. TIMES (Aug. 7, 1994), <https://www.nytimes.com/1994/08/07/travel/travel-advisory-large-cruise-ships-barred-from-galapagos.html> [<https://perma.cc/8XUE-53JB>].

¹⁰⁵ Sara Macefield, *Ecuador Set to Tighten Entry Rules for Visitors to Galapagos Islands; Hints at Changes for Cruise Passengers*, CRUISECRITIC (Dec. 18, 2020), <https://www.cruise-critic.com/news/5801/> [<https://perma.cc/KS3S-TS9D>].

¹⁰⁶ See Vora, *supra* note 7; see L.A. TIMES, *supra* note 74.

¹⁰⁷ See Vora, *supra* note 7.

¹⁰⁸ See *id.*

¹⁰⁹ See *id.*

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² See Larry Kraft, *Galapagos: The Impact of the People*, WILDERNESS CLASSROOM, <https://wildernessclassroom.org/galapagos-impact-people/> [<https://perma.cc/HFM8-W55N>] (last visited Nov. 13, 2022).

because the rain stirs the sand within the waters,¹¹³ but because of leakage of sewage from buildings and restaurants that do not have a safe way to store sewage.¹¹⁴

Conservationists generally cite concerns such as pressure on existing infrastructure, invasion of wildlife ecosystems, and the danger of introducing invasive species when discussing the need for a tourism cap on the Galápagos.¹¹⁵ These concerns have all been experienced by other tourism-based economies on other islands.¹¹⁶

One possible solution to environmental concerns of the Galápagos Islands, other than a land-based tourism cap, is ecotourism.¹¹⁷ However, it is well documented that many companies use the term “ecotourism” to greenwash unsustainable nature-based tourism.¹¹⁸ This ecotourism phenomena has been documented globally and, in many instances, is nothing more than an empty term used for marketing purposes.¹¹⁹ For example, this was a problem in Hawai'i until the Hawai'i Ecotourism Association (“HEA”) was established, which created criteria for businesses and companies to be able to use the term “ecotourism” or the HEA logo to promote their businesses.¹²⁰

The overarching problem with ecotourism is that, even if a company or business complies with ecotourism standards,¹²¹ ecotourism will never fully mitigate the environmental problems described above such as

¹¹³ *See id.*

¹¹⁴ *See id.*

¹¹⁵ Adam Popescu, *Going to the Galápagos Is Easier and Cheaper Than Ever. That Might Not Be a Good Thing.*, N.Y. TIMES (Feb. 5, 2019), <https://www.nytimes.com/2019/02/05/travel/galapagos-overtourism.html> [<https://perma.cc/MKZ5-9W7Q>].

¹¹⁶ *See, e.g., Invasive Alien Species*, CONVENTION ON BIOLOGICAL DIVERSITY (May 19, 2010), <https://www.cbd.int/island/invasive.shtml> [<https://perma.cc/2W66-YE5Y>].

¹¹⁷ *See Is Ecotourism a Greenwash?*, IRISH TIMES (May 26, 2001, 1:00 AM), <https://www.irishtimes.com/news/is-ecotourism-a-greenwash-1.310025> [<https://perma.cc/36VQ-UBSH>].

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ Michele McKay, *Keeping the “Eco” in Ecotourism*, DOWN TO EARTH ORGANIC & NAT. (Jan. 14, 2019), <https://www.downtoearth.org/environment/travel-recreation/keeping-eco-ecotourism> [<https://perma.cc/YZ4W-V6K4>].

¹²¹ The idea that there are ecotourism standards is debatable as there is not a set standard of ecotourism, which also makes the use of the term less significant regarding the protection of wildlife and ecosystems. *See Is Ecotourism a Greenwash?*, *supra* note 117. However, the International Ecotourism Society defines ecotourism as “responsible travel to natural areas that conserve the environment, sustains the well-being of the local people, and involves interpretation and education”—a very broad definition that does not provide specific standards that could be used on the Galápagos. *Ecotourism: Definition, Meaning and Examples*, YOU MATTER (May 5, 2020), <https://youmatter.world/en/definition/ecotourism/> [<https://perma.cc/R7SK-FKUD>].

invasive species and biodiversity loss. Many companies that provide services and goods to tourists on the Islands claim to be ecotourist companies that practice and educate the accompanying ideologies of ecotourism.¹²² This largely proves why promoting “sustainable” ecotourist businesses is not the solution to the Galápagos environmental concerns because, although many companies consider themselves as conducting ecotourism, the Islands continue to see environmental degradation.¹²³ Because these other proposals to mitigate the environmental impacts of tourism are not viable, this Note now considers how the Galápagos and Ecuadorian governments would implement a land-based tourism cap.¹²⁴

III. PRICES OF GOODS AND SERVICES ON THE GALÁPAGOS ISLANDS ARE UNDERVALUED

Different researchers have performed studies that discuss the undervaluing of goods and services on the Galápagos Islands.¹²⁵ Some focus on surveying tourists and asking them what they are willing to pay for goods and services consumed while on the Islands.¹²⁶ Whereas others recommend increasing entrance fees for the Galápagos National Park.¹²⁷ This Note takes a different and empirical approach in proving that goods

¹²² See McKay, *supra* note 120.

¹²³ See *Ecotourism: Definition, Meaning and Examples*, *supra* note 121.

¹²⁴ See *infra* Part III.

¹²⁵ See, e.g., César Viteri Mejía & Sylvia Brandt, *Managing Tourism in the Galapagos Islands Through Price Incentives: A Choice Experiment Approach*, ECOLOGICAL ECON. Sept. 2015, at 1, 1; see César Viteri Mejía, *Pricing and Preserving Unique Ecosystems: The Case of the Galapagos Islands* (May 2011) (Ph.D. dissertation, Univ. Mass. Amherst) (ProQuest).

¹²⁶ See Mejía & Brandt, *supra* note 125; Mejía, *supra* note 125. These types of studies provide insight into the minds of tourists but would otherwise be difficult to rely on in determining how increases in prices will tangentially impact the flow of tourists to the Galápagos because they ask tourists if they would pay more *after* they have already visited. Prices are considered by tourists before arriving and before consuming goods and services. Therefore, to ensure the Islands would still draw a reasonable number of tourists before they visit, a market evaluation is likely more reliable to predict future spending habits. By asking tourists these questions after they consumed goods and services, there is an incorporated assumption of information in the model that tourists do not possess prior to arriving on the Islands. In advocating for a major policy shift as outlined in this Note, empirical data is usually more tangible rather than only relying on models.

¹²⁷ Although entrance fees for the Galápagos National Park are below fair market value—and this could be one way to increase revenue—this Note does not focus on entrance fees. See, e.g., SILVIA BENITEZ, ANDY DRUMM & ROBERTY TROYA, NAT. CONSERVANCY, VISITOR USE FEES AND CONCESSION SYSTEMS IN PROTECTED AREAS: GALÁPAGOS NATIONAL PARK CASE STUDY 9 (2001).

and services are below market value on the Islands.¹²⁸ A comparison between the Galápagos and other islands that offer similar outdoor tourist-oriented activities will provide evidence that the goods and services are undervalued on the Galápagos and therefore can be used to implement economic mechanisms in support of a tourism cap.¹²⁹ In considering the major economic implications on the inhabitants of the Galápagos, this analysis centers around the people and their well-being and not simply on the wildlife.

A. *Tourist Prices, Consumption, and the Galápagos*

Tourists in the Galápagos generate approximately 143 million USD in revenue per year for the Ecuadorian economy through the tourism industry.¹³⁰ The tourism industry on the Islands employs over 2,000 people.¹³¹ The Islands are home to a total of 279 species living on the actual Islands and about 9,000 species living in and around the waters surrounding the Islands.¹³²

For the Galápagos Islands, the expenditures of tourists largely depend on which island a tourist visits and what type of tourist they are. For this Note, the overall average expenditures will be used for tourist expenditure comparisons.¹³³ Some sources place hotel expenses at about \$20–\$25 a night on the Islands,¹³⁴ while others place tourist budgets at

¹²⁸ See *infra* Sections III.A–E.

¹²⁹ There is a lack of transparency and data collection on many small islands which makes it more difficult to compare market prices alongside those on the Galápagos. The most reliable route to obtain this information would be to travel to each island and obtain data since many companies and businesses are not found online for these types of islands. See *infra* Sections III.A–E. However, the islands chosen in this Note to compare to the Galápagos are ones in which there is enough data to create a substantive comparison and the activities and patterns of tourists are similar on the islands.

¹³⁰ *Sustainable Tourism*, *supra* note 32.

¹³¹ *Id.*

¹³² Pola Lem, *The Galapagos Archipelago*, NASA: THE EARTH OBSERVATORY (Oct. 8, 2016), <https://earthobservatory.nasa.gov/images/89367/the-galapagos-archipelago> [<https://perma.cc/74TQ-9TQF>].

¹³³ See *infra* Sections III.A–E. Breaking down how much tourists spend by island in the Galápagos could provide further guidance for the Ecuadorian and Galápagos governments to customize its policies but that is beyond the scope of this Note.

¹³⁴ See Julia Williams, *The True Cost of Traveling the Galapagos Islands: A Budget Break-down*, CURE FOR CURIOSITY (Oct. 5, 2021), <https://thecureforcuriosity.com/the-true-cost-of-traveling-the-galapagos-islands/> [<https://perma.cc/L2GN-ZG4T>]; see also Heather Blenkinson, *How Much Should I Budget?*, TRIPADVISOR, <https://www.tripadvisor.com/ShowTopic-g294310-i6637-k4137799> [<https://perma.cc/LFL8-4XLD>] (last visited Nov. 13, 2022).

about \$30–\$100 a night.¹³⁵ In order to ensure consistency between comparisons of prices of the different islands, the most robust and similar sources will be used for price ranges. On average, a single person spends approximately \$52 a night on hotel accommodations, \$27 on meals, \$43 on transportation, and \$28 on entertainment and activities.¹³⁶ Tourists visiting the Galápagos, on average, spend approximately \$150 a day.¹³⁷

B. *Tourist Prices, Consumption, and Hawai'i*

In 2019, total spending of visitors arriving in Hawai'i was about \$17.75 billion.¹³⁸ The number of jobs supported by the tourist industry is about 216,000.¹³⁹ Hawai'i is home to approximately 21,383 species on and surrounding the Hawai'ian Islands.¹⁴⁰ In Hawai'i, the average tourist spends \$291 per day—\$61 on meals, \$29 on local transportation costs, \$170 on accommodations, and \$31 on entertainment and activities.¹⁴¹

C. *Tourist Prices, Consumption, and Kangaroo Island*

An average of 172,000 night tourists visited Kangaroo Island in 2019.¹⁴² Notably, only 47,000 of those tourists were international.¹⁴³ Therefore, only 14.4% of the tourists that visited Kangaroo Island were tourists attracted from across the world.¹⁴⁴ On Kangaroo Island, the

¹³⁵ Isabel Espinoza, *Galapagos Cost—How Much Does It Cost to Travel to the Galapagos Islands?*, METRO. TOURING (Sept. 7, 2018), <https://www.metropolitan-touring.com/galapagos-cost/> [https://perma.cc/TA4D-TMWP].

¹³⁶ *Travel Budget for Galapagos Islands Ecuador*, BUDGET YOUR TRIP, <https://www.budgetyourtrip.com/ecuador/galapagos-islands> [https://perma.cc/J8AH-APP2] (last visited Nov. 13, 2022).

¹³⁷ *See id.*

¹³⁸ *Fact Sheet: Benefits of Hawai'i's Tourism Economy*, HAW. TOURISM AUTH., <https://www.hawaiiitourismauthority.org/media/4167/hta-tourism-econ-impact-fact-sheet-December-2019.pdf> [https://perma.cc/335P-3B42] (last visited Nov. 13, 2022).

¹³⁹ *Id.*

¹⁴⁰ Lucius Eldredge & Scott Miller, *How Many Species Are There in Hawaii?*, BISHOP MUSEUM OCCASIONAL PAPERS, no. 41, 1995, at 3, 3.

¹⁴¹ *Travel Budget for Hawaii United States of America*, BUDGET YOUR TRIP, <https://www.budgetyourtrip.com/united-states-of-america/hawaii> [https://perma.cc/XER4-35YV] (last visited Nov. 13, 2022).

¹⁴² *Kangaroo Island Regional Profile*, S. AUSTL. TOURISM COMM'N, GOV. OF S. AUSTL., https://tourism.sa.gov.au/media/dwsobydr/kangaroo-island_dec19.pdf [https://perma.cc/B69D-7GW9] (last visited Nov. 13, 2022).

¹⁴³ *Id.*

¹⁴⁴ *See id.*

following number of species reside: 18 mammals, 19 reptiles, 6 frogs, 231 fish, and 5 seagrasses.¹⁴⁵ A tourist traveling to Kangaroo Island, in South Australia, spends approximately \$371 per day—\$27 in meals, \$17 on local transportation, \$314 for accommodations,¹⁴⁶ and about \$13 on entertainment and activities.¹⁴⁷

D. *Tourist Prices, Consumption, and Fernando de Noronha*

Another island that is often compared to the Galápagos Islands is Fernando de Noronha.¹⁴⁸ Fernando de Noronha is a group of twenty-one islands off the coast of Brazil that hosted 103,548 visitors in 2018.¹⁴⁹ A tourist spends approximately \$268 per day on the island—\$170 in hotel accommodations, a combined \$98 in transportation and food costs, and an unknown amount for entertainment costs.¹⁵⁰ There is no reliable data available on how many species inhabit the islands.

E. *Island Comparisons to the Galápagos and Conclusions*

Out of the three islands surveyed, tourists visiting the Galápagos spend the least amount of money. Each tourist on Hawai'i spends 94%

¹⁴⁵ *Nature and Wildlife*, AUTHENTIC KANGAROO ISLAND, <https://authentickangarooisland.com.au/our-kangaroo-island/nature-and-wildlife/> [<https://perma.cc/AD9U-JBD3>] (last visited Nov. 13, 2022).

¹⁴⁶ CTR. FOR ECON. STUD., S. AUSTR. OFF. OF COMM'R FOR KANGAROO ISLAND, KANGAROO ISLAND: MONITORING ECONOMIC PROGRESS 1, 24 (2017), <https://www.adelaide.edu.au/saces/ua/media/64/kangaroo-island-monitoring-economic-progress-september-2017.pdf> [<https://perma.cc/3JZS-5B7W>].

¹⁴⁷ *Travel Budget for South Australia*, BUDGET YOUR TRIP, <https://www.budgetyourtrip.com/australia/south-australia> [<https://perma.cc/2QDN-ZB6D>] (last visited Nov. 13, 2022). Although three of the numbers are for South Australia as opposed to specifically Kangaroo Island, these numbers are significantly conservative as prices on Kangaroo Island would be significantly higher due to transportation costs. *See id.*

¹⁴⁸ Susie Cazenove & Henrietta Loyd, *Fernando de Noronha: A Paradise Archipelago in Brazil*, CAZENOVE+LOYD, <https://www.cazloyd.com/fernando-de-noronha-paradise-archipelago-brazil/> [<https://perma.cc/4KJ2-5SYS>] (last visited Nov. 13, 2022).

¹⁴⁹ *Why This Brazilian Archipelago Is Charging Tourists a Fee*, BLUEVISION (Aug. 16, 2019), <https://bluevisionbraskem.com/en/intelligence/why-this-brazilian-archipelago-is-charging-tourists-a-fee/> [<https://perma.cc/XM7Q-B7T7>].

¹⁵⁰ *Cost of a Trip to Fernando de Noronha, BR & the Cheapest Time to Visit Fernando de Noronha*, CHAMPION TRAVELER [hereinafter CHAMPION TRAVELER], <https://championtraveler.com/price/cost-of-a-trip-to-fernando-de-noronha-br/> [<https://perma.cc/WM5C-6P9P>] (last visited Nov. 13, 2022).

more than a tourist on the Galápagos.¹⁵¹ Hawai'i does possess far more infrastructure and luxury accommodations, but accommodations on the Galápagos have recently trended towards luxury, therefore it is important to consider this comparison.¹⁵²

Each tourist on Kangaroo Island spent 147% more than tourists on the Galápagos Islands.¹⁵³ Kangaroo Island has significantly less wildlife to observe and interact with than on the Galápagos Islands.¹⁵⁴ Additionally, Kangaroo Island is one island, and the Galápagos Islands, containing many islands, should see tourists spending more money on transportation and entertainment because of the frequent trips between the different islands. This discrepancy indicates that goods and services are extremely undervalued on the Galápagos Islands. Additionally, most tourists that visit the Galápagos Islands are not from Ecuador.¹⁵⁵ International tourists make up approximately 67% of the tourists that visit the Islands.¹⁵⁶ This is important because increasing prices on tourists in the Galápagos will impact tourists' finances from around the world.¹⁵⁷ This means that prices may be increased in the Galápagos without impacting Ecuadorian natives to the same degree because the main demographic spending money on the Islands are not native, unlike that on Kangaroo Island in Australia.

Even tourists on Fernando de Noronha, which is probably the most comparable to the Galápagos Islands, spend about 79% more than tourists on the Galápagos.¹⁵⁸ The immense fame alone and information on the species that exist in the Galápagos should make it easier, in comparison to islands such as Fernando de Noronha, to attract tourists and charge higher prices—mainly because tourists often go to these types of

¹⁵¹ See *Travel Budget for Galapagos Islands Ecuador*, *supra* note 136; see also *Travel Budget for Hawaii United States of America*, *supra* note 141.

¹⁵² See, e.g., *Galapagos Cruises and Personalized Tours*, KENSINGTON TOURS, <https://kensingtontours.com/tours/latin-america/galapagos> [<https://perma.cc/B648-QRQ5>] (last visited Nov. 13, 2022).

¹⁵³ See *Travel Budget for Galapagos Islands Ecuador*, *supra* note 136; see also CTR. FOR ECON. STUD., *supra* note 146; *Travel Budget for South Australia*, *supra* note 147.

¹⁵⁴ See Lem, *supra* note 132; see also *Nature and Wildlife*, *supra* note 145.

¹⁵⁵ DIRECCIÓN DEL PARQUE NACIONAL GALÁPAGOS, MINISTERIO DEL AMBIENTE, INFORME ANUAL DE VISITANTES A LAS ÁREAS PROTEGIDAS DE GALÁPAGOS DEL AÑO 2019 3 (2019), https://s3.amazonaws.com/igtoa-org/app/public/ckeditor_assets/attachments/159/informe-anual-de-visitantes-2019.pdf [<https://perma.cc/K78E-9JBT>].

¹⁵⁶ *Id.*

¹⁵⁷ See *id.*

¹⁵⁸ See *Travel Budget for Galapagos Islands Ecuador*, *supra* note 136; see also CHAMPION TRAVELER, *supra* note 150.

islands to experience the outdoors or wildlife that inhabit the land and surrounding waters.¹⁵⁹

This list of island comparisons can be expanded, but given the limited information on tourism-based islands, this is a start to understanding the undervalued goods and services on the Galápagos Islands and the role that they can play in implementing a tourism cap to mitigate environmental damage.¹⁶⁰ Even if the Galápagos and Ecuadorian governments do not implement a land-based tourism cap, finding a way to increase the prices of services and goods on the Islands still has benefits to the governments, the inhabitants—as long as their individual increases in revenue outweighs their additional expenditures—and the environment.

IV. EXPLANATION OF ECONOMIC MECHANISMS AND WHY THEY ARE NEEDED TO IMPLEMENT A TOURISM CAP

Often when focusing on environmental problems and wildlife, especially in developing countries, the individuals living in the areas are disregarded or overlooked.¹⁶¹ For a tourism cap to be successful in the Galápagos Islands, there must be a way to make up for the loss in revenue that inhabitants would experience. As explained in Section III.E, the Galápagos severely undervalues products and services offered on its islands in comparison to other similarly situated islands.¹⁶² This is an opportunity to mitigate the revenue loss due to a land-based tourism cap. The Ecuadorian or Galápagos governments could implement a higher tax on businesses on the Galápagos which would likely redistribute to consumers, or in this case, tourists.¹⁶³ A concern is that prices will become unsuitable for locals to purchase goods and services and that employees will bear the burden of increases in taxes.¹⁶⁴ However, this is fixable or

¹⁵⁹ See *Why Are the Galapagos Islands Important?*, CELEBRITY CRUISES, <https://www.celebritycruises.com/blog/why-are-the-galapagos-islands-important> [<https://perma.cc/LJ4S-4977>] (last visited Nov. 13, 2022).

¹⁶⁰ See *infra* Part III.

¹⁶¹ See, e.g., J.E. Hardoy & D. Satterthwaite, *Environmental Problems of Third World Cities: A Global Issue Ignored?*, 11 PUB. ADMIN. & DEV. 341, 356–57 (1991).

¹⁶² See *infra* Section III.E.

¹⁶³ See Alex Durante, *Who Bears the Burden of Corporation Taxation? A Review of Recent Evidence*, TAX FOUND. (June 10, 2021), <https://taxfoundation.org/who-bears-burden-corporate-tax/> [<https://perma.cc/H8GT-VWRR>]. Although this is simplifying the economic impact of higher taxes, due to the undervaluing of goods and services on the Islands and prices being below equilibrium or market value, impacts on locals and employees can be offset through government redistribution. *Id.*

¹⁶⁴ See *id.*

preventable in two ways. The first way is that the government could provide subsidies to the people living on the Galápagos to make up for the increased cost of goods.¹⁶⁵ The second way is that local businesses and companies can choose to charge locals different prices. This would be more difficult for the government to implement but may occur naturally because it is a tight knit community in which very few individuals are unknown to all on the Islands.¹⁶⁶

Through increasing taxes, the government would have more revenue to spend on either subsidies, which would provide the government leverage to implement a land-based tourism cap, or on conservation efforts. The increase in revenue could be used to build sewage and other infrastructure or address some of the many concerns of locals such as inadequate schooling, unhealthy eating options, and deficiencies in health-care.¹⁶⁷ Ultimately, it is up to the Ecuadorian and Galápagos governments to implement policies that effectively mitigate environmental degradation from land-based tourism while balancing the interests of their constituents on the Islands. This is not an easy task, but the undervaluing of market goods and services on the Islands provides a route where the inhabitants and governments may benefit—not just the wildlife.

CONCLUSION

The Galápagos Islands, like many other tourism-based economies, are facing adverse effects not only from unsustainable amounts of tourists, but also from issues such as climate change.¹⁶⁸ Although the governments have implemented some regulations to mitigate the impact of tourism, only a land-based tourism cap would truly address the environmental problems the Islands are experiencing. Because of that, the governments should increase taxes to push for market-equilibrium and

¹⁶⁵ In fact, the Ecuadorian government already subsidizes other commodities on the Islands such as fossil fuels. See Burbano et al., *supra* note 47.

¹⁶⁶ *Galapagos Holidays with a Difference*, TRAVELLERS' TALES BY MOUNTAIN KINGDOMS (May 5, 2017), <https://www.mountainkingdoms.com/blog/article/galapagos-holidays-with-a-difference> [<https://perma.cc/VQ2E-VJYA>].

¹⁶⁷ See Peggy Bentley, *Lack of Fresh Food on the Galápagos' San Cristóbal Island Contributed to Obesity*, GILLINGS SCH. NEWS (May 6, 2019), <https://sph.unc.edu/sph-news/lack-of-fresh-food-on-the-galapagos-san-cristobal-island-contributes-to-obesity/> [<https://perma.cc/384F-XCET>].

¹⁶⁸ *Weather and Climate*, GALÁPAGOS CONSERVATION TR., <https://www.discoveringgalapagos.org.uk/discover/geographical-processes/weather-climate/climate-change/> [<https://perma.cc/6CB3-Y8DV>] (last visited Nov. 13, 2022).

use the increase in revenue to implement a tourism cap ensuring that individuals living on the Islands receive the direct benefits of the increase in revenue *and* the added environmental protections that a land-based tourism cap would provide. Only if the governments consider local economic concerns of inhabitants will they be able to successfully implement a land-based tourism cap.