
GREEN PASSPORT

Innovative Financing Solutions for Conservation in Hawai'i

Improving the visitor experience and protecting
Hawai'i's natural heritage



HAROLD K.L. CASTLE
FOUNDATION

CONSERVATION
INTERNATIONAL



HAWAI'I
LEADERSHIP
FORUM

Purpose:

The purpose of this report is to identify and explore innovative conservation finance solutions that bring additional revenue to support conservation in Hawai'i and effectively manage cultural and natural resources that are critical to our communities' wellbeing and the visitor experience.

Scope of Work:

- (1) This report reviews existing visitor green fee programs that support conservation in jurisdictions around the world.
- (2) Based on this information, the report then explores legal, economic, and political considerations in Hawai'i that shape the implementation of a potential visitor green fee program for the State of Hawai'i.
- (3) Lastly, the report presents potential pathways for a visitor green fee in Hawai'i, noting that each of these options require further legal and policy research.

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EXECUTIVE SUMMARY

Each year, Hawai'i's reefs, oceans, beaches, and forests provide billions of dollars in value to the economy, supporting the wellbeing of our communities and visitors alike. For our tourism industry, our ecosystems are vital. Inseparable from our culture, our environment is integral to our visitor experience.

Even though these natural resources are critical for the visitor industry and resident communities, Hawai'i invests less than 1% of its state budget into those assets. Hawai'i's total underinvestment in our "green infrastructure" is estimated at \$360 million annually, constituting a major unfunded liability that poses a significant risk to our business climate and our economic resiliency.

As a result, our vital ecosystems and the resources they harbor continue to decline, due to lack of adequate investment in proven and effective conservation approaches. Data demonstrates growing concern that tourism's positive contribution to the economy may not outweigh the impact that visitors have on the environment. While 10 million visitors a year enjoy the benefits of Hawai'i's ecosystems, Hawai'i's 1.4 million year-round residents bare the majority of the environmental costs. This situation requires creative thinking and new solutions to reverse the decline in our ecosystems and the associated risks for our visitor industry and communities.

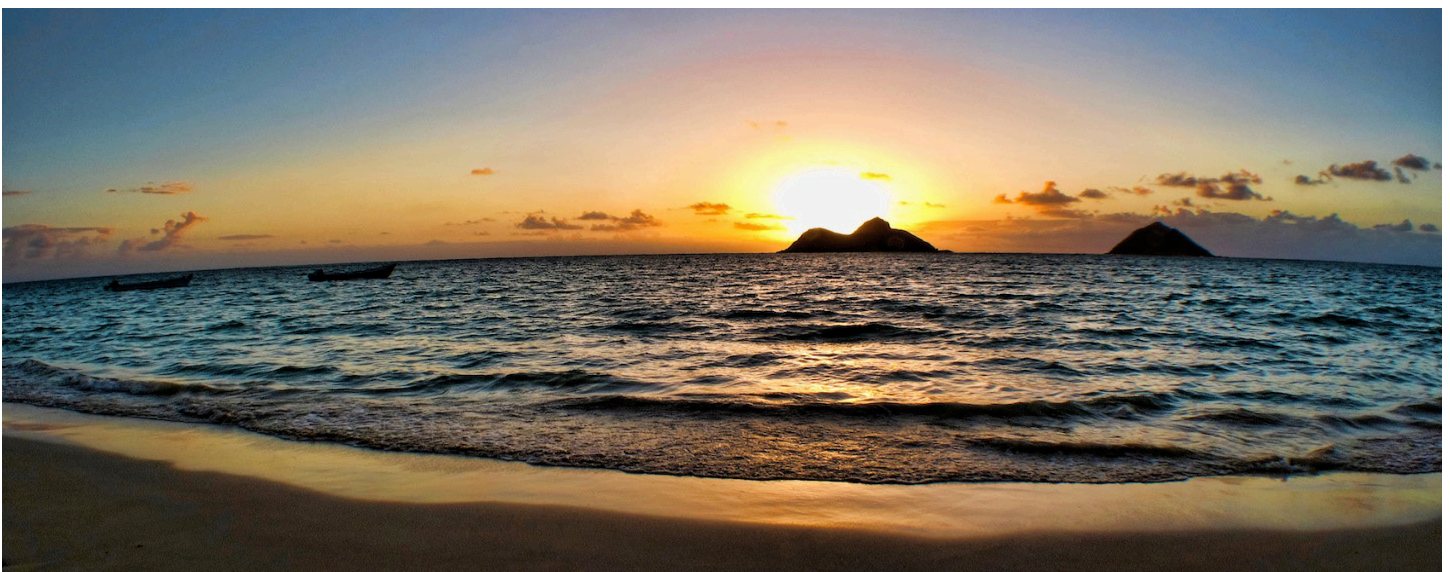
This report explores innovative conservation financing mechanisms to address this issue, focusing on visitor green fee systems as a solution for tourists to offset their environmental impact while also enriching their visitor experience. This solution has been deployed in several places around the world with great success.

VISITOR GREEN FEES

Visitor green fees are trending across the globe as a financing solution to rising visitor impact in destinations such as Hawai'i.

The small island nation of Palau has one of the most effective visitor green fee programs in the world, a US\$100 visitor fee embedded into airline tickets. In addition to this entrance fee, visitors are not issued a visa until they sign a pledge written by the children of Palau, promising to respect the environment and culture. Similarly, Ecuador's Galapagos Islands has a US\$100 entrance fee. Visitor data demonstrates that implementing the fee did not impact visitor arrivals rates. In fact, the vast majority of surveyed visitors found the fee fair and justifiable, with many supporting a higher fee. As of this writing, New Zealand launched a US\$23 conservation levy per visitor. These fee systems generate millions of dollars per year in financing, which are used to offset visitor impacts, restore and protect ecosystems, and educate tourists about the environment.

Fourteen destinations world-wide have visitor green fee programs: Palau, New Zealand, British Virgin



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Islands, Maldives, Bhutan, Bali (Indonesia), El Nido (Philippines), the Galapagos (Ecuador), Riviera Maya (Mexico), Cancun and Puerto Morelos (Mexico), Mentawais (Indonesia), Balearic Islands (Spain), and Venice (Italy). The fee programs vary from \$1/night to a \$100 set entrance fee, and are referred to as eco-taxes, tourism levies, or entry fees. Some of the visitor green fee programs operate at the national level, but more than half of them are implemented by sub-national jurisdictions, similar to an approach Hawai'i could implement. Despite different assessment mechanisms, legal frameworks, and operational designs, all share the common purpose of connecting a revenue stream between visitors and the conservation of ecosystems that visitors and local communities depend on. These systems are more than a fee, they typically include a robust conservation fund and associated management system, together with visitor education and engagement strategies.

APPLICABILITY TO HAWAII

This report reviews how current legal and policy pathways shape the options for developing and implementing a visitor green fee program in Hawai'i. There are two primary opportunities for generating conservation revenue from visitors:

- **Establish a new visitor green fee system:** Hotels, possibly short-term rentals, and rental car

agencies, could collect a green fee from guests. Alternatively, similar to New Zealand and Palau, an electronic system could act as a green fee platform. This option requires further legal and policy research before being pursued.

- **“Green” the fees already collected from visitors:** The Transient Accommodation Tax (TAT) is a 10.25% tax that all customers pay on hotel and other short-term accommodation bills. Of the \$550 million that the TAT generates each year, only 1% goes directly to conservation. “Greening the TAT” through reallocation or conditioning of funding sources could utilize revenue already captured from visitors to address the unfunded environmental liability.

Under these two primary options, a range of variable approaches exist.

HOW A GREEN FEE PROGRAM COULD WORK IN HAWAII: OPERATIONAL MODELS

Funds captured from a visitor green fee require management and governance systems that safeguard the fidelity of the fund towards conservation and sustainable tourism. Research on green fee programs around the world demonstrates that public-private partnerships are preferred for such management structures. For example, the Cancun Environmental Sanitation Fee Council and Palau's PAN Fund are models for designing a



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fund management system in Hawai'i. Locally, the Waikiki Business Improvement District Association and Waikiki Beach Special Improvement District Association provide examples for a public-private-partnership framework.

Similarly, any “green tourism fund” must have criteria to determine what projects and programs its revenue would support. One option is to use the existing Aloha+ Challenge. Launched in 2014 as a local, intersectional collaborative and later folded under the auspice of the United Nations Sustainable Development Goals, the Aloha+ Challenge is a statewide leadership commitment to a more sustainable, resilient, and prosperous Hawai'i through six sustainability targets by 2030. The Aloha+ Natural Resource Target could provide a high-level criteria for funding, and the corresponding Aloha+ Dashboard, a coherent open-data platform to track progress towards the targets, could serve as a transparent, accountable system for measuring impacts of funded projects.

The financial benefits of a visitor green fee program extend beyond the revenue generated by the fee. Visitor green fee revenue could be leveraged through the use of green bonds, a type of instrument specifically issued to fund environmental projects. Upfront capital provided by a green bond could fund large-scale conservation projects to help Hawai'i meet the 2030 Aloha+ Natural Resource Management Target and deliver immediate and visible impacts for residents and visitors.

CONCLUSION

There is a strong and growing alignment among the visitor and conservation sectors to advance solutions to protect our environment and enhance the visitor experience. An innovative green finance mechanism can be developed collaboratively to support conservation and tourism objectives for Hawai'i. Unlike conventional financing mechanisms, visitor green fees do not place further burden on residents or compete with current funds for education, healthcare, or other vital public services - instead they generate new revenue from outside of Hawai'i. A visitor green fee warrants serious consideration as a viable solution to properly sustain Hawai'i's natural environment and economy, supporting our vital visitor industry and meeting our Aloha+ Challenge 2030 deadline.

INTRODUCTION

In 2018, the Government of the Philippines closed the holiday island of Borocay to tourists for six months because the island's wastewater and refuse systems had become overburdened by its visitor industry. The abrupt shut down destabilized the island's 500 tourism-related businesses and the job security of nearly 30,000 locals (France-Press, 2018).

Borocay is no longer an anomaly – the impacts of unsustainable tourism are being felt in communities across the planet. Indonesia's small island of Bali receives over 5 million visitors a year but does not have sufficient trash and recycling infrastructure. Instead of disposing trash in landfills, waste is mass dumped into the oceans causing up to 20 tons of trash to wash up on the beaches of Bali daily, harming visitor attraction rates. In response, the government declared a "national rubbish emergency" (The Jakarta Post, 2018).

Thailand's once pristine Maya Bay, made famous by the Leonardo DiCaprio movie *The Beach*, now attracts 5,000 tourists per day. The resultant damage to the marine life led the Thailand National Parks Department to close Maya Bay indefinitely until the ecosystem rebounds (Coca, 2019).

Over-tourism is not just a problem of the developing world. Cape Town, South Africa nearly ran out of water last year due to mismanagement of water resources and failure to adequately steward watersheds (Mahr, 2018). Locals in Barcelona have rioted over escalating numbers of visitors (Sobot, 2018). The examples of nations, states, and cities who failed to adequately manage the impact of visitors are growing.

In Hawai'i there is growing concern over nearing a "tipping point" in tourism (Puhak, 2019). Surveys demonstrate that for residents the benefits of tourism no longer outweigh the social costs (Hawai'i Tourism Authority, 2016) ("Your Voices Matter" Workshop, 2018). While frustrated locals demand tourist caps as visitor numbers near 10 million a year (Zocalo Public Square, 2019), the consensus among tourism thought leaders is that sustainable tourism is not dictated by the number of visitors, but rather the management of those visitors (e.g. even if Hawai'i capped visitors at 10 million, there would still be too many visitors on Diamond Head at Christmas and at Laniakea Turtle Beach during rush hour) (Brewbaker, Haas, & Mak, 2019).

Former Hawai'i Tourism Authority (HTA) marketing director, Frank Haas, Bank of Hawai'i analyst, Paul Brewbaker, and Economist, James Mak, recently published a provocative paper on over-tourism that is critical of HTA's marketing over management approach. Rather, they call for "fresh thinking" that considers new approaches including fees, taxes, and technologies that can help better manage tourism (Brewbaker, Haas, & Mak, 2019).

The visitor sector both benefits from, and impacts, the natural and cultural resources of our islands. Surveyed visitors ranked "nature" and the "ocean" as the top two details that made their trip to Hawai'i excellent, significantly out-rating military historical sites, food, music, culture, accommodations, and weather (Hawai'i Tourism Authority ,

2017). These ecosystems – including our forests, beaches, coral reefs and more – have significant cultural and economic value. Coral reefs alone provide nearly \$400M in net benefits each year to the local economy, with their overall asset value to the state estimated at \$10B (Van Beukering & Cesar, 2004). The net-present value of Oahu's Ko'olau forest alone is estimated between \$7B - \$14B (UHERO, 1997). These "green infrastructures" are vital to our culture and our economy, yet escalating threats are eroding the benefits they provide.

In recognition of the value of these ecosystems, Hawai'i has a strong community dedicated to conserving our native species, ecosystems, and cultural resources. Thought leaders from the government, private sector, and civil society organizations have together committed to the Aloha+ Sustainability Targets. Community initiatives across the archipelago are working to reduce threats to our unique biodiversity, irreplaceable cultural resources, and the ecosystems that benefit all our communities and enhance the visitor experience. A growing green work force is committed to the perpetuation of these vital systems and to combatting the threats of climate change and other stressors.

Even with these assets, there is not enough funding and resources to adequately steward our environmental infrastructure, especially when coupled with rising visitor pressures and global climate change. The Aloha+ Targets have significant buy-in and efforts to achieve these targets are underway. Yet no dedicated funding mechanism exists to ensure these targets are achieved and relevant implementing authorities and support organizations from civil society have adequate resources.

Current conservation funding for Hawai'i from federal, state, private, and philanthropic funding sources annually totals \$535M. A recent analysis demonstrated that our state requires at minimum, \$886M a year to adequately care for our ecosystems and biocultural resources (Fitzpatrick, 2018). Thus, we are running at a 40% conservation budget deficit (see Appendix 1).

Hawai'i needs \$358M more each year to properly manage and sustain its natural environment. This unfunded liability is a major threat to Hawai'i's economic resilience.

The strain this deficit places on our natural and cultural heritage is affecting local quality of life, and is impacting the visitor experience - the backbone of Hawai'i's economy.

Our underinvestment in our environment places our economy and business environment at risk. Hawai'i significantly underinvests in its environment versus other similar geographies, which Hawai'i competes with for tourists (Figure 1). The asset value of our natural environment is eroding, which impacts the visitor experience and communities alike, endangering our visitor industry and the natural resources that are vital to community wellbeing.

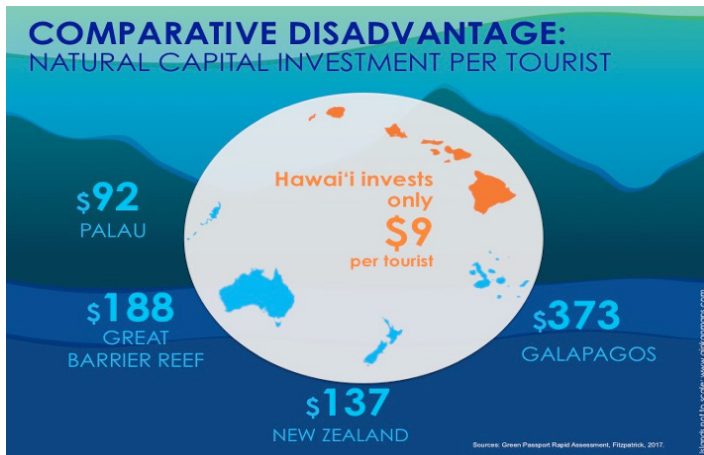


Figure 1. Natural Capital Investment Per Tourist, Comparable Geographies

How can we then create radically ambitious levels of funding to adequately fund our environment, perpetuating these resources now and for future generations? How can investment in our vital ecosystems increase our community resilience and strengthen Hawai'i's tourism business climate? How can we do more for the environment without compromising funding for other critical needs such as infrastructure, education, healthcare and more? Fortunately, a solution exists that has been explored and implemented in dozens of places worldwide that face similar pressures. Visitor green fees represent a tangible solution that can help to protect our natural and cultural heritage while also improving the visitor experience and increasing our economic security.

PURPOSE AND SCOPE

The below report explores a "Green Fee" for Hawai'i, a fee for non-residents that offsets their impact on the environment, improves the visitor experience, and provides a solution to the aforementioned tipping point trepidation.

Chapter 1a highlights three prominent green fee case studies: Palau, Aotearoa, and the Galapagos National Park. Appendix 2 provides information on the eleven remaining green fee programs not discussed in the main text. Chapter 1b describes the legal obstacles that a green fee in the U.S. might face and the alternative conservation finance programs that municipal governments within the U.S. have pursued given domestic legal parameters. Chapter 1c concludes by discussing the current green financing programs in Hawai'i and the opportunities to improve them.

Chapter 2a explores various assessment options and administrative costs for a visitor green fee in Hawai'i. Chapter 2b explores management structures that aim to safeguard a green tourism fund's commitment to conservation. Chapter 2c discusses existing frameworks in Hawai'i that provide standardized tools to determine which projects might be funded by the green tourism fund revenue and how their impacts might be measured.

CHAPTER 1: CONSERVATION FINANCE MECHANISMS: VISITOR GREEN FEE SYSTEMS

1A | GREEN FEES WORLDWIDE

Green fees are trending around the globe as triple-bottom-line solutions to better manage visitor impacts on ecosystems and natural resources. Green fees may be referred to as eco-taxes, tourist taxes, green taxes, environmental levies, conservation and tourism levies, and entry fees. In general, green fees require mandatory payments made by visitors to government entities for the explicit purpose of supporting conservation and natural resource management.

Green fees range from \$1/night to a \$100 entrance fee. Green fees around the world are assessed at hotels, ports of entry, upon purchase of airfare, and with electronic platforms. Some of these green fees also provide exemptions, such as for visitors returning within a certain time frame of their entry fee payment, visitors under a certain age, military visitors, or visitors of the government.

This report reviews 14 green fees globally, in order to identify models and approaches that could help inform development of a green fee program in Hawai'i. Five of these green fee programs operate at the national level, while the remaining nine are implemented by various subnational jurisdictions. As apparent in Tables 1 and 2, the majority of these finance mechanisms have been established within the past two years.

The recent and urgent development of these programs indicates accelerating use of this policy approach as a response for better managing the environmental impacts of visitors. This section reviews green fees in Palau, New Zealand, and the Galapagos – jurisdictions that have innovative green fee systems that are relevant to Hawai'i. A detailed discussion of the remaining fee programs is included in Appendix 2 – Additional Visitor Green Fee Programs.

Table 1. National Green Fee Systems

JURISDICTION	NAME	ASSESSED AT	AMOUNT	YEAR
Palau	Pristine Paradise Environmental Fee	Airline Ticket	\$100	2018
Aotearoa (New Zealand)	International Visitor Conservation and Tourism Levy	Electronically	\$23	2019
British Virgin Islands	Environmental and Tourism Levy	Port of Entry	\$10	2017
Maldives	Green Tax	Hotels/Resorts; Guesthouses	\$6/day; \$3/day	2015; 2016
Bhutan	Royal Government of Bhutan Tourist Tariff	Mandatory travel agency	\$200 - \$250 / day	1974

Table 2. Subnational Green Fee Systems

JURISDICTION	NAME	ASSESSED AT	AMOUNT	YEAR
Bali, Indonesia	TBD	TBD	\$10	2019
El Nido, Philippines	Eco-Tourism Development Fee (ETDF)	Tour operators / Entry	\$3.86 for 10 days; \$9.65 more than 10	2008
Galapagos, Ecuador	Galapagos National Park Entrance Fee	Port of Entry	\$100	1993
Riviera Maya, Mexico	Eco Tax	Hotels	\$1.10 / night	2017
Cancun & Puerto Morelos, Mexico	Environmental Sanitation Fee	Hotels and resorts	\$1.27 / suite night; \$2.54/ villa night	2019
Mentawais, Indonesia	Mentawais Surfer Tax	All Accommodations	\$77 per 15 days	2016
Balearic Islands, Spain	Sustainable Tourism Tax (ITS) or Balearic EcoTax	All Accommodations	\$3.40 / night (avg.)	2018
Venice, Italy	Venice Tourist Tax	Port of entry	\$11	2018

PALAU

Palau's *Pristine Paradise Environmental Fee* (PPEF) is the quintessential example of a successful, transparent green tourist fee, which was developed to support conservation and effective management of natural resources. Known as one of the seven underwater wonders of the world, Palau's tourism industry exhibits many of the same attributes as Hawai'i, albeit at a smaller scale. Like Hawai'i, Palau is recognized as a global leader in conservation, establishing the Palau National Marine Sanctuary in 2015,¹ protecting 500,000 sq. kilometers of marine waters, making it one of the largest marine protected areas in the world (greater than the size of California.) In order to finance the

¹ Marine sanctuary law puts 80% of Palau's exclusive economic zone (EEZ) under full protection and allows for domestic fishing in the remaining 20% (PEW, 2015)

marine sanctuary and Palau's protected area network, all international airline tickets to Palau include the US\$100 *Pristine Paradise Environmental Fee*.² In addition to this fee, visitors are not issued a visa until they sign a pledge promising to respect the environment and culture of Palau:

*“Children of Palau,
I take this Pledge,
To preserve and protect your beautiful and unique island home.
I vow to tread lightly, act kindly, and explore mindfully.
I shall not take what is not given.
I shall not harm what does not harm me.
The only footprints I shall leave are those that will wash away.”*



Palau's Visitor Pledge

The Palau Pledge was written by the children of Palau and makes Palau the first nation in the world to have an immigration policy that promotes conserving the country's environment (Palau Visitors Authority, 2018).

This green fee system was developed in order to bring additional funding to support conservation in Palau. The Palau Visitor Authority recognizes that the country's scuba diving industry alone brings approximately \$90 million to Palau's economy a year (40% of Palau's GDP) (PEW, 2015). Palau received 115,964 visitors in FY2018 (Bureau of Immigration, MOJ and Bureau of Budget and Planning, MOF, 2018). That number of visitors paying a \$100/visitor fee, has presumably generated annual revenue well over \$10M.³ Part of the success of the green fee system, including anecdotal data demonstrating the positive perceptions that visitors have of the fee, is due to transparency and marketing. Table 3 illustrates how the fund revenue is allocated per \$100 visitor fee (Kesolei, 2018).

Table 3. *Pristine Paradise Environmental Fee (PPEF) Revenue Allocation per \$100 Visitor Fee*

Fisheries Protection Fund	\$10
State Governments	\$12.50
Operations of Palau International Airport	\$25
National Treasury	\$22.50
Protected Areas Network (PAN)	\$30

Palau's fund management is technically a public-private collaboration. As shown above, \$10 of each \$100 fee is allocated to the Fisheries Protection Fund (FPF), which is a fund within the National Treasury with the mission to fund the Palau National Marine Sanctuary and the laws related to it, administer activities related to the enforcement of the sanctuary, and promote eco-tourism (Republic of Palau, 2017). An amendment in June of 2019 assigned \$5 per visitor from the FPF to the Palau International Coral Reef Center (PICRC) to support the PICRC's newly expanded role in managing the marine sanctuary. Another \$12.50 of each \$100 fee is divided among the states such that 70% goes to the states in equal shares, and the remaining 30% is allocated in proportion with each state's population. Of each \$100 fee, \$25 goes directly to the National Treasury and is then earmarked to the appropriate agencies with the purpose of funding maintenance and improvement of the Palau International Airport. An additional \$22.50 per fee is reverted to the National Treasury. An additional \$30 of each fee is managed by the Protected Areas Network (PAN) Fund, a non-profit organization established by the Republic of Palau to act as a financial trustee for the monies acquired from international donations and visitor arrival fees to support the PAN sites. Each of the fifteen PAN sites is run by its corresponding state government; national governments may not control PAN site management (PAN Fund, 2019). While the PAN Fund is a non-profit entity, it was established by the government and the government had significant decision-power including appointing board members (Holm, 2019). The PAN office sits within the Ministry of Natural Resources, Environment, & Tourism.



Kayangel, Palau. © Kevin Davidson

² As of the spring of 2019, cruise ship passengers are no longer considered transit passengers, and are now required to pay the \$100 PPEF (Ministry of Natural Resources, Environment & Tourism, 2019).

³ Palau has not reported statistics on annual PPEF revenue.

Palau's Pristine Paradise program additionally includes a mobile app, called Pristine Paradise Palau. While not used as an assessment tool, the app positively promotes the fee and contains visitor travel information, including ample environmental education material (Pojas, 2019).

This comprehensive conservation finance infrastructure took more than a decade to develop and fully implement, and the fee staggered in its first two years between becoming law and being implemented. The intended date for the \$100 fee enactment was April 1, 2017, but the Palau National Congress and visitor industry agreed that the economy was too weak and waited to enact the fee until January 1, 2018. While the average of visitor arrivals over the 2017 quarters versus the available 2018 quarters show a 16% decline in visitors, Palau's visitor arrival data (Palau Government, 2018) is not substantial enough, nor has the fee existed long enough, to draw conclusions on its impact on visitor arrivals.

AOTEAROA (NEW ZEALAND)

In September of last year, Aotearoa announced its plans to implement an International Visitor Conservation and Tourism Levy (IVL), a green visitor fee of US\$23 per visitor to be enacted mid-2019. The tax is expected to bring in US\$39.7 to \$55.8 million annually (Leasca, 2019). While full details have not been unveiled, revenue is said to be split evenly between conservation and infrastructure initiatives. New Zealand's Minister of Tourism, Kelvin Davis, has elaborated that, "projects funded by the IVL will contribute to the long-term sustainability of tourism here, by protecting and enhancing our natural environment, upholding New Zealand's reputation as a world class experience and addressing the way vital tourism infrastructure is funded" (The Points Guy, 2019). This levy is part of a package of sustainable tourism initiatives being launched by the New Zealand government (Walls, 2018).

Unlike Palau's airline ticket assessment, the International Visitor Levy is assessed electronically, using the nation's new Electronic Travel Authority (ETA) launched July 2019 (ETA New Zealand, 2019). This electronic visa is valid for two years and is waived for citizens of certain countries. For example, Australian citizens and many Pacific Islanders are exempt from the fee. This ETA was developed primarily in response to border control and immigration concerns, with its ability to assess the fee acting as a bonus component.⁴ It is difficult to isolate the IVL collection costs from the existing immigration system. Collection costs should be minimal because the IVL uses existing systems from the government agency, Immigration New Zealand (INZ). The proposed ETA development costs, which include the IVL, were estimated at NZ\$1 million⁵, but are funded by the immigration authority (Davis, 2018).

When the New Zealand government first began developing the International Visitor Levy, the New Zealand government

had not yet committed to the Electronic Travel Authority (ETA); thus, other assessment alternatives were considered in early government reports. These alternatives included physical collection at airport booths, collection by airlines upon the purchase of air tickets, and bed taxes. In regard to collection at airports, many are already at capacity for border processing. Collection in airports would presumably worsen this problem. Airlines were open to assessment upon purchase of the air ticket; however, to keep their administrative costs down, the airlines would likely charge all travelers and then reimburse those who should be exempt, financially inconveniencing the exempt travelers. Lastly, bed taxes were considered in per guest, per room, and per night scenarios at both national and local government jurisdictions. However, assessment would rely predominantly on voluntary compliance, as auditing the accommodations would prove difficult given the large numbers of small providers. Within the bed tax, it was noted that it would be more cost effective to apply this bed tax at high volume destinations, rather than all destinations. A bed tax in low volume destinations would have high collection costs compared to relatively low revenue.⁶ The scenario further allows local governments to add additional bed taxes onto the national one. None of these options were pursued, as the government's co-development of the ETA provided a far more cost effective, convenient platform for collection of the IVL (Ministry of Business, Innovation, & Employment, 2018).



© Conservation International/photo by Nicole Han

While a final expenditure plan has not been released for the NZ\$80M anticipated revenue, several components have been recommended. For example, the Cabinet of Economic Development Committee suggests a three-to five-year Investment Plan be developed with sector input (specifically from the conservation community, tourism industry, and local government). To ensure reporting transparency, they recommend detailed annual expenditure reporting. Upon public hearing, many submitters voiced desires for further discussion of expenditures, as broad categories were

⁴ For example, IVL developers intended to make an exemption for children under two, but ETA concerns overrode the decision. Travelers could have mistaken that exclusion from the IVL (International Visitor Levy) as an exemption from the non-age-specific requirement to hold a visa. Moreover, implementing an age-based exemption fee was estimated to cost \$500,000 NZD given age exemptions are not a part of the current system database (Davis, 2018).

⁵ Total ETA operational costs are estimated at \$15M per year (Roguski, 2019).

⁶ For example, under this latter scenario, local governments would collect the fee and incur the administrative costs – making it such that 30 local councils receive NZ\$0.5M. Alternatively a program that focuses on high volume areas, specifically the four gateway cities, would generate NZ\$85M (comparable to the ETA) with far lower administrative costs (Ministry of Business, Innovation, & Employment, 2018).

discussed but specific projects and proposals were not. Over 90 testimonies recommended “ring fencing” for the IVL (mechanisms to prevent raiding from other government agencies) and/or clear hypothecation (dedication of the tax revenue to a particular expenditure purpose). The importance of a fully developed Investment Plan (3-5yrs) was continually mentioned.

Tourism in New Zealand comprises 10% of the nation’s GDP. The NZ\$35 fee was determined on the premise that it would total less than 1% of average visitor spending. New Zealand’s Cabinet Economic Development Committee identified potential risk that the IVL could reduce growth in visitor arrivals and/or visitor expenditures. Based on limited information, this could result in a NZ\$8M loss in goods and services tax (GST) and NZ\$24- \$124M in GDP. However, the Ministry of Business, Innovation, & Employment considers these risks low, given this estimate was based on the price sensitivity of air tickets rather than visas, with the latter having lower price sensitivity (Davis, 2018). An earlier impact assessment based on elasticity models of tourists in other international destinations concluded that the impact of a user fee in this price range would be negligible (Ministry of Business, Innovation, & Employment, 2018)

GALAPAGOS NATIONAL PARK (ECUADOR)

The Galapagos is a unique case study given that the majority of the island chain is a national park. Therefore, the visitor fee is classified as a park fee, rather than a green tourist fee. Since 1993, all adult visitors to the islands have been required to pay a \$100 park entrance fee in cash at the port of arrival. Children under the age of twelve pay \$50. Andean visitors pay half the amount of these fees. Before 1993, visitors paid \$40, and locals paid \$0.60 (Epler, 2007). The revenue is directly used to fund “conservation, protection, and management,” and is apportioned as follows:

- 40% Galapagos National Park
- 30% Galapagos local government
- 15% Forestry and Marine Park protection institutions
- 15% INGALA, Ecuador’s Navy and inspector for invasive species (Galapatours, 2018)

In the 1960s there were roughly 2,000 tourists visiting the Galapagos Islands each year. By 2006, there were 3,500 guests per night. In contrast to this increase in visitor arrivals, general funds in the 80s and 90s were rapidly shrinking, causing increasingly austere budget cuts. Park employees decreased, while the number of visitors continued to skyrocket. This crisis of human pressure coupled with rapidly declining funding culminated in the Galapagos National Parks Service (GNPS) asserting an increase in the user fee. In 1993, the entrance fee was raised from \$40 per foreigner (\$0.60 per Andean) to the current \$100 per visitor (\$50 per Andean) fee.



Galapagos sea lions lounge on the beach of Rábida Island
© Conservation International/photo by Molly Bergen

In terms of visitor to user fee elasticity, this price increase had no significant impact on arrival numbers. In fact, the Charles Darwin Foundation found that approximately 75% of surveyed foreign visitors feel the fee is “reasonable and a good value,” with over 5% finding it “too low” (Epler, 2007). The Galapagos Entrance Fee is a one-time fee, with no cap on the number of days per stay. Additionally, the user fee includes access to parkland and marine reserves. With a stay in the Galapagos averaging seven days, the average daily rate is only \$14.29 per adult tourist, making the fee below average in relation to comparable world class parks.

Currently, the GNPS faces concerns over the fee being too low, rather than too high. In 1993, the entrance fees paid by foreigners amounted to roughly 3% of their vacation cost and 10% of their week-long cruise cost. As of 2006, the same \$100 entrance fee constituted 2% of foreigner’s total vacation costs and about 5% of what they pay for cruises (Epler, 2007).⁷

CONCLUSIONS

See Appendix 2 for discussions of the remaining visitor green fee examples worldwide. No examples of U.S. green tourist fees are present in Tables 1 and 2 because none currently exist. Section 1b below discusses the legal obstacles to non-resident green fees in the United States and the alternatives that have been developed domestically.

⁷ A recent choice experiment performed in 2009 on 252 tourists demonstrated their willingness to pay 2.5 times as much for high level protection against invasive species compared to medium level (Epler, 2007).

1B | DOMESTIC GREEN FEE

DOMESTIC LEGAL CONSIDERATIONS

There are three U.S. constitutional provisions and one U.S. federal statute that restrict U.S. states from implementing visitor-only fees or assessing fees at airports. The three restrictions under the U.S. Constitution are: The Privileges and Immunities Clause, Article IV, Section 2, Clause 1;⁸ the Dormant Commerce Clause, Article I, Section 8, Clause 3;⁹ and; the Equal Protections Clause of the 14th Amendment.¹⁰ In short, these constitutional clauses prevent states from enacting laws that discriminate against foreigners or U.S. non-residents. Assessment options for a green fee are further complicated by a federal statute known as the Anti-Head Tax Act, 49 U.S. Code §40116a,¹¹ which, in brief, makes it illegal for a state or subdivision of a state to assess a fee within an airport or on the sale of airline tickets. For further explanations and histories of these clauses and statutes, please refer to Appendix 3 – Domestic Legal Considerations. This legal information was developed via an initial scan of legal issues affecting a green fee; a more comprehensive legal and policy analysis is needed in order to better understand the legal and policy landscape unique to Hawai'i.

DOMESTIC POLICY ALTERNATIVES

Given the legal challenges of a visitor-only fee, states have explored alternative conservation finance mechanisms such as special taxes and fees, green bonds, carbon pricing programs, and carbon offset programs. A sampling of these domestic alternatives are listed in Table 3 and general descriptions of these approaches and examples are included below. None of the examples provided are directed specifically to non-residents or the visitor industry.

Table 4. Domestic Alternative Conservation Finance Mechanisms

Jurisdiction	Name	Mechanism	Assessed at	Amount	Year
Special Taxes:					
Juneau, AK	Marine Passenger Fee	Fee	Cruise ship port	\$8/ passenger	1999
Denver, CO	Open Space Sales Tax	Sales Tax	Purchases	0.25%	2018
Georgia, USA	Outdoor Stewardship Act	Sales Tax	Purchases of Outdoor Recreation Equipment	75%	2017
San Francisco, CA	SF Healthy	Sales Tax	Restaurants	\$1.89/ employee / hour worked	2008
Green Bonds:					
Rhode Island, USA	Green Economy and Clean Water Bond	Green Bond	Government Issued; debt financed	\$47.3M	2018
Massachusetts, USA	Massachusetts Green Bond	Green Bond	Government Issued; partially debt financed, partially repaid through energy savings.	\$100M	2013
Carbon Pricing:					
Northeast, USA	Regional Greenhouse Gas Initiative (RGGI)	Cap and Trade (ETS)	Power Plants	\$5.62 per ton of carbon dioxide equivalent (CO ₂ e) ¹⁵	2005
California, USA	California Cap and Trade (AB32) ¹²	Cap and Trade (ETS) ¹³	Fossil Fuel Distribution and Large Emitters	\$14.90 per ton of carbon dioxide equivalent (CO ₂ e) ¹⁴	2013
California, USA	California's Compliance Offset Market	Carbon Offset Program	Projects approved by the California Air Resource Board	\$9 - \$12	2013

8 The Privileges and Immunities Clause states that, "The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States" (U.S. Constitution, Article IV, Section 2, Clause 1).

9 The Dormant Commerce Clause grants the U.S. Congress the power, "To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes" (U.S. Constitution, Article I, Section 8, Clause 3). By negative inference, the Dormant Commerce Clause doctrine restricts the states from taking any regulatory action that would discriminate against interstate commerce.

10 The Equal Protections Clause of the 14th Amendment prohibits states from denying "equal protection of the law." Since residency is a type of suspect classification, differential treatment of non-residents from residents in tax law must be rationally related to the state's objective (Michael, 2018; U.S. Constitution, 14th Amendment). While this sounds fairly open, the historical decisions made by the Supreme Court seem wary of differential treatment; see Appendix 2.

11 In general, The Anti-Head Tax prohibits assessing any "tax, fee, head charge, or other charge on—(1) an individual traveling in air commerce; (2) the transportation of an individual traveling in air commerce; (3) the sale of air transportation; or (4) the gross receipts from that air commerce or transportation" (49 U.S.C. § 40116(b)), unless - that tax or fee qualifies as a "reasonable rental charge," "landing fee," or "other service charge" related to the use of the "facilities of an airport owned or operated by that State or subdivision" (49 U.S.C. § 40116(e)).

12 California's Cap and Trade market is a part of the Western Climate Initiative (a cap and trade linkage currently consisting of Québec and California)

13 Cap and Trade (cap) and Emissions Trading Scheme (ETS) are used interchangeably.

14 Average of 2018 quarterly auction prices (CARB, 2019).

15 As of the most recent auction on June 5, 2019 (RGGI, 2019)

SPECIAL SALES TAXES AND FEES

Several states and cities have opted for special sales taxes and fees to generate conservation or other funds. These taxes and fees are applied to residents and nonresidents alike. Otherwise, they could be susceptible to the Commerce and Comity Clauses of the U.S. Constitution, as outlined above. Examples of these special taxes and fees include Juneau's Marine Passenger Fee, the Denver Open Space Sales Tax, the Georgia Outdoor Stewardship Act, and the San Francisco Health Surcharge.

Juneau Marine Passenger Fee

In 1999, the city of Juneau, Alaska imposed a \$5-per passenger entry fee on cruise ship vessels (Marine Passenger Fee), which has since increased to \$8-per passenger. This fee assists in "funding projects that enhance the tourism experience and offset community impacts created by the cruise ship industry" (City and Borough of Juneau, 2019). Juneau has reportedly spent the revenue on services to the ships such as docks, crossing guards, and recently, a seawalk (Downing, 2018). In 2016, the cruise ship industry sued the city under the Tonnage, Commerce, and Supremacy Clauses of the U.S. Constitution, claiming that the city was spending these fees too liberally. Judge H. Russel Holland of the U.S. District Court in Anchorage ruled that under the Tonnage Clause collecting the fees from the vessels is constitutional, but the uses of the funds need to be used for services to the vessel. If those services also benefit the vessel passengers that was fine. But the funds could not be used for services that only benefited the passengers and not the vessel itself (Kalosh, 2018).

Denver Open Space Sales Tax

In January of 2019, the city of Denver established its Open Space Sales Tax. This tax raises the local sales tax rate by 0.25%. This increase does not apply to food purchased for home consumption or sales of prescription drugs. The revenue is dedicated to parks, open spaces, trails, waterways, canals, and investments with emphases on acquiring new conservation lands and effectively managing current ones. Specifically, part of Denver's 5-year plan will create parkland within a 10-minute walking distance of every part of the city (News Desk, 2019). The tax is expected to raise \$45.9M annually and has a restriction built in that no more than 5% of this revenue may be spent on administrative costs. The ballot measure for the Open Space Sales Tax was approved by voters (City and County of Denver, 2018).

Georgia Outdoor Stewardship Act

Similarly, in 2018, The Georgia Conservancy, The Nature Conservancy, Trust for Public Land, Georgia Wildlife Federation, The Conservation Fund, and Park Pride joined forces to build a dedicated conservation funding source for the state of Georgia. This manifested in the Georgia Outdoor Stewardship Act (GOSA). Similar to Denver, this bill was voted into law on the 2018 ballot. The program dedicates 75% of all tax revenue collected on the sale of

outdoor recreation equipment to conservation land (Georgia Conservancy, 2018).

San Francisco Health Surcharge

While not an environmental sales tax, the SF Healthy program provides a helpful framework when considering alternative social or environmental financing mechanisms. In 2008, the San Francisco Health Care Ordinance was approved, which requires businesses with more than 20 employees to apportion money for their workers' health care. Specifically, the set aside rate is \$1.89 per employee per hour worked (Kauffman, 2018). As a result, restaurants began adding a mandatory surcharge on their bills under labels like "Healthy S.F. surcharge." Restaurants have the liberty to pass these costs onto customers rather than fold them into the menu prices. Unfortunately, this freedom carries a risk of corruption, as several restaurants were caught pocketing surcharge revenue marketed for employee healthcare.

As discussed in Chapter 1c, Hawai'i will most likely not develop a conservation tax based on these programs, given that the taxes place additional burden on residents, as well as visitors.

GREEN BONDS

Alternatively, some states have explored green bonds as mechanisms to finance environmental infrastructure. What are green bonds? First a bond is a form of debt where you are the bank (e.g., you loan your money to the government or a company and they pay you back in full, with interest). A green bond is a type of bond that is issued specifically to fund environmental or climate projects.

Also known as blue bonds, impact bonds, and climate bonds, these environmentally-minded financial tools are growing in prevalence. Since the first green bonds were issued by the World Bank in 2007 for \$807M, they have grown to \$167B globally (duPont, Levitt, & Blimes, 2016). These novel bonds were initially viewed by investors as niche products, but now large asset managers like BlackRock are launching green bond funds.¹⁶ The largest issuers of green bonds are development banks, followed by corporate parties,¹⁷ muni bonds (bonds issued by municipal governments), and lastly, small banks.

How do municipalities pay back these bonds and their interest? There are generally two options in regards to credibility and repayment. First, the bond may be issued on "full faith and credit" of the issuer, likely meaning the issuer will tax-finance the bond (Cummins, 2015). This credibility is how the World Bank issues many of their green bonds and means that repayment is not reliant on the successful performance of the project (Retkwa, 2011). Alternatively, the green project funded by the green bond can have a mechanism built into that generates financial returns to repay the bond principal and interest. Examples of green projects with returns are: sustainable commodity production, recreation and ecotourism, tax revenues, credits for

¹⁶ There are several parties involved with the issuance of a green bond: the issuer, the entity that issues the bond and directs the proceeds to the borrower; the borrower, those who present appropriately "green" projects (often the issuer and borrower are the same party, and they will fall into the one of the categories: corporate, municipal, state, federal, or supranational); the underwriters, those who help market and sell the bond to the investors; the investors, those who purchase the bonds; auditing bodies, those who ensure the projects meet the standards set by the principle setting bodies; principle setting bodies, institutes like Climate Bonds Initiative and Green Bonds Principles (duPont, Levitt, & Blimes, 2016).

¹⁷ Specifically, the utility sector was the second largest issuer of green bonds (2017) (Lam, 2019).

ecosystem services, and risk mitigation and avoided costs.¹⁸

Repayment aside, many investors choose to invest in green bonds out of altruism, specifically if bond projects meet their mission statement and investment goals. Moreover, many green bonds are attractive for the tax benefits they provide. Despite this market incentive, interest on green bonds is still too low to be competitive with conventional bonds solely at the financial level.¹⁹

Green bond projects are being used for a variety of conservation initiatives, including conservation easement purchases, direct land purchases, establishment of agricultural operations, ecotourism and recreation areas, and payment for ecosystem services, including mitigation banking such as developing biodiversity offsets. Massachusetts and Rhode Island have pioneered the use of green bonds at the state level. Massachusetts issued a \$100M Green Bond in 2013, and Rhode Island issued a \$47.3M Green Economy and Clean Water Bond in 2018.

Massachusetts Green Bond

Massachusetts was the first U.S. state to issue a green bond. The \$100M bond was issued under the full faith and credit of the state, with 20% of the funds allocated to Land Acquisition, Open Space Protection, & Environmental Remediation. Specifically, these funds leveraged \$750k in USFWS coastal wetland conservation grant funding to acquire 70 acres of Great Marsh. A full 48% of the bond funds were dedicated to Energy Efficiency and Conservation (duPont, Levitt, & Blimes, 2016), which aimed to reduce energy consumption by 25% in over 700 sites across Massachusetts (DAIGNEAU, 2013) and provided a mechanism to repay the investors. Another 28% was allocated to Clean Drinking Water, with a final 4% to River Revitalization and Preservation & Habitat Restoration.

Rhode Island Green Economy and Clean Water Bond

Last year, Rhode Island followed Massachusetts' lead and issued a \$47.3M Green Economy and Clean Water Bond. The state recognized that, "the health of Narragansett Bay and our local waters is central to our environment, way of life, and economy in Rhode Island" (DEM, 2019). On this principle, the state apportioned the bond revenue to various coastal resiliency and recreation projects:

- local recreation - \$5 million
- bikeways - \$5 million
- open spaces - \$2 million
- farmland - \$2 million
- brownfields - \$4 million
- coastal resiliency & public access - \$5 million
- clean water and drinking water - \$7.9 million
- Providence river dredging - \$7 million
- wastewater treatment facility resilience - \$5 million

- dam safety - \$4.4 million

Additionally, the local banks committed to financing projects with direct environmental impact and climate mitigation (DEM, 2019). Rhode Island's green bond does not have a repayment mechanism built in, so the bond will be financed by the state. Critics warned that Rhode Island's debt to income ratio is one of the worst in the country (Stenhouse, 2018).

Green Bonds and Conservation

A bond that funds renewable energy is fairly straightforward in its repayment structure, as energy cost savings can help repay both the initial loan and interest.²⁰ Developing cash flows from conservation and sustainable land use projects can be more complicated. One option is that eco-tourist programs and entrance fees could pay back bonds that funded conservation easements or development rights (duPont, Levitt, & Blimes, 2016). According to economic theory, the only time one should debt finance is when a large amount of capital is needed upfront. In this framework, green bonds fit the bill for climate mitigation, adaptation, and infrastructure projects, which require costly startup capital (Coffman M. , 2019). Alternatively, many conservation programs require steady operational and managerial funds over time, with relatively little startup capital costs. Refer to Appendix 6 for further discussion of green bonds.

As discussed in Chapter 1c, using green bonds to fund conservation in Hawai'i depends on Hawai'i's conservation goals and timelines. To avoid debt-financing, a conservation bond in Hawai'i would benefit from a repayment mechanism, such as a visitor green fee.

CARBON PRICING

In addition to special sales taxes and green bonds, states have also utilized carbon pricing programs to generate millions in revenue. There are two ways to price carbon: through a carbon tax or through a cap and trade program (also known as emissions trading schemes, or ETS). The economics behind these instruments are explained in detail in Appendix 4 – Carbon Pricing.

In short, a carbon tax applies a tax on each ton of carbon or carbon equivalent emitted. Usually this carbon tax is levied on upstream users, or those entities at the beginning of the energy supply chain (coal suppliers, oil refineries, natural gas processing facilities) where fewest users are subject to the tax.²¹

Alternatively, a cap and trade system works such that the government sets a total cap on the tons an industry can emit in a given quarter. The government then either freely allocates permits for a certain level of emissions or auctions them off to the businesses under the cap. These businesses are then free to trade these permits, thus allowing the market to allocate them to those businesses for whom abatement, reduction in emissions, is most expensive. The cap and number of permits reduces overtime. Often, cap

¹⁸ Similarly, green bonds related to freshwater or stormwater are especially viable as freshwater actually has a market value, whereas most ecosystem services do not.

¹⁹ Indirect perceived advantages to green bonds further include: strategic signaling, benefits in down markets and secondary markets, and investor diversification (Lam, 2019).

²⁰ This is the case with Massachusetts' green bond, of which 48% of issued money goes to energy efficiency.

²¹ Alternatively, a carbon tax may be levied midstream, mainly on electric utilities. Theoretically, a carbon tax could be levied downstream (e.g. households or vehicles), but in practice this option poses insurmountable administrative costs and technological challenges (C2ES).

and trade systems allow emitters to satisfy a portion of their obligation using reductions achieved through “offset” projects in sectors outside of the cap, such as through increasing the storage of carbon in natural and working lands.

The most important difference between a tax and a cap and trade is that a carbon tax is price certain, while a cap is quantity certain. Carbon taxes range from US\$1/ton to US\$130/ton of CO₂.²² Cap and trade programs have resulted in per ton costs of carbon in the low teens (Legislative Analyst’s Office, 2017).

Carbon pricing programs are renowned for generating substantial revenue, some generating upwards of \$1 billion in annual state revenue (CARB, 2019). In addition to the financial revenue generated by carbon pricing programs, they have positive climate benefits. The recent IPCC Special Report “Global Warming of 1.5°C” states that, “explicit carbon prices remain a necessary condition of ambitious climate policies” (de Coninck, 2018). Despite these positives, carbon pricing revenue is rarely directed toward natural resources and conservation projects. Carbon pricing revenue generally addresses administrative costs, revenue neutrality, equity concerns, and lastly climate adaptation and clean energy projects, as is discussed below. There are 57 different carbon pricing programs around the world (World Bank Carbon Pricing Dashboard, 2019).²³ Two of those programs are in the United States: the Regional Greenhouse Gas Initiative (RGGI) and California’s Cap and Trade Program. They are both cap and trade programs, rather than carbon tax programs.

Regional Greenhouse Gas Initiative (RGGI)

Established in 2005, RGGI was the first mandatory market-based approach to reduce greenhouse gas emissions in the United States. RGGI is an example of a cap and trade program. The program operates in the northeast with member states including: Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New York, Rhode Island, and Vermont. The program solely focuses on reducing emissions from the power sector, mandating that power plants with over 25 megawatts participate. By 2020, RGGI is expected to have reduced the region’s annual power sector emissions by 45% compared to 2005 levels. RGGI auctions the permits,²⁴ thus generating revenue for participating states. In 2018, auctioned allowances generated over \$200M (RGGI, 2019). While this revenue has not been used directly for conservation projects, much of it has gone to clean energy initiatives (e.g., providing energy-efficiency upgrades to low-income households) (Ho, 2018). Unfortunately, some states have resorted to using the funds to offset government deficits. Nonetheless, the Natural Resource Defense Council summarized the program to have contributed 30,000 job-years, saved consumers \$618 million on energy bills, and produced \$5.7 billion in public health benefits (Morris, 2014).

Unfortunately, RGGI is criticized for failing at its number one job: reducing carbon emissions. As seen by its critics, RGGI raises exceptional amounts of money to fund government programs but does not impose a high enough price on carbon to decrease emissions significantly (Roberts, 2017).

California’s Cap and Trade

California’s Cap and Trade was launched in 2013 as a part of the California Global Warming Solutions Act (AB32). The cap covers 450 California businesses, who comprise nearly 85% of the state’s total emissions (C2ES, 2018). The cap and trade program is part of a hybrid policy, meaning a mix of command-and-control regulation and market incentives (see Appendix 4 – Carbon Pricing). Direct regulations complimentary to the cap and trade program are expected to generate 78% of the total reduction in greenhouse gas (GHG) by 2020 (EPRI, 2013). On the other hand, California’s cap and trade system is only projected to produce the remaining 22% of the targeted emission reductions. After 2020, the cap and trade program is anticipated to achieve a significantly greater share of the reductions needed to achieve the state’s 2030 goal. The cap and trade portion of AB32 remains important due to the revenue it returns to firms and the state. In 2018, of the 347,050,640 auctioned permits, all were sold at an average quarterly price of \$14.91.²⁵ California generates around \$1 billion per year from these auctions (Durning, 2014), demonstrating carbon pricing’s power as a finance tool. This revenue is conditioned to be spent for environmental programs, specifically those that further the purpose of AB32, and especially those that improve air quality. More recently, the state must use 25% of the revenue to improve air quality for disadvantaged communities and victims of environmental injustice. Programs funded by AB32 revenue include: sustainable agriculture, healthy forests, urban green space, waste diversion, clean air, low carbon transportation, and clean energy research (C2ES, 2018).²⁶ Many of these projects are indirectly conservation oriented; however, California’s cap and trade program is not explicitly a form of *conservation* finance. With stronger parallels drawn between ecosystem services and climate mitigation, one could better market the use of such revenue towards conservation initiatives.

As discussed in Chapter 1c, carbon pricing programs generally do not identify conservation as a main funding priority. After taking care of administrative costs, the revenue typically first addresses equity concerns and revenue neutrality either through lump sum transfers to residents or as cuts in distortionary taxes. Next, assuming no raiding by the general fund, additional revenue typically supports climate mitigation, infrastructure projects, and clean energy initiatives, as seen in the expenditures from the above carbon pricing programs (RGGI; California’s Cap and Trade Program). Generally, a small remainder, if any, is allocated directly to conservation. The conservation benefits are tangential from the climate mitigation services natural

22 The established Social Cost of Carbon is around \$80/ton, meaning most of these markets are undervaluing.

23 Those jurisdictions include: Finland, Poland, Sweden, Norway, Latvia, Slovenia, Estonia, European Union, Alberta, Switzerland, New Zealand, British Columbia, New England, Ireland, Iceland, Tokyo, Saitama, Kyoto, California, Australia, Japan, Quebec, Kazakhstan, United Kingdom, Shenzhen, Shanghai, Tianjin, Guangdong, Hubei, Chongqing, France, Mexico, Korea, Portugal, South Africa, and Chile.

24 Opposed to freely allocating permits, which would result in no government revenue.

25 The total revenue is split between the linked parties under the cap (Ontario, Quebec, and California) thus the total revenue (347,050,640 x \$14.91) is greater than the roughly \$1B/year California generates.

26 In FY15/16, revenue was appropriated: 40% to the legislature to pay debt for high speed rail, 25% to the high speed rail, 20% to affordable housing and “sustainable community grants,” 5% to low carbon transportation.

ecosystems provide. This general trend is a policy choice by legislators, not an inherent nature of carbon pricing revenue allocations. A carbon pricing program in Hawai'i could be designed to prioritize conservation funding, such as the recent carbon tax in Colombia does (Monge, 2018).

Given this typical funding triage, conservation folks may find themselves un-attracted to carbon pricing initiatives as a prominent conservation financing path. However, carbon pricing markets are a vital precursor to a functioning carbon offset market, which directly finances conservation.

Carbon Offset Markets

Carbon offsets are a type of payments for ecosystem services (PES), an up and coming market instrument that compensates whoever maintains or restores ecosystem services. PES is an umbrella category for: direct public payments,²⁷ direct private payments,²⁸ tax incentives,²⁹ voluntary offset markets,³⁰ and offset markets benefiting from an established carbon market. An example of the latter (an offset market benefiting from a cap and trade market) is the Compliance Offset Program within California's Cap and Trade Program.

California's Compliance Offset Market

In AB32, the 450 businesses regulated under the cap are allowed to meet up to 8% of their emissions reductions through certified compliance offset programs (CARB, 2019).³¹ Offset programs must apply to be on the market and meet certain criteria that ensure their carbon offsets would not have occurred otherwise, are relatively permanent, and quantifiable etc.³² As of March 2015, the carbon offset market was fairly comparable to the allowance market, with the California allowances pricing from \$12.50 - \$13.00 per ton and the California Compliance Offsets from \$9.00 - \$11.00 per ton. The price differential is due to the invalidation risk associated with an offset credit and their limitations on use. Approved offset project types include: U.S. Forest Projects, Urban Forest Projects, Livestock Projects, Ozone Depleting Substances Projects, Mine Methane Capture Projects, and Rice Cultivation Projects (CARB, 2019).³³

PES systems are beginning to be explored in Hawai'i (Gross & Rodriguez, 2017). As discussed in Chapter 1c, Hawai'i has made strides toward payment for ecosystem services, including Hawai'i Revised Statutes §225P-6 and recent forest carbon offset projects on the Island of Hawai'i and Maui. These developments relate to the statewide

²⁷ Payments made by governments directly to ecosystem service providers. Example: Conservation Reserve Program (U.S.) \$1.5B to farmers annually to protect endangered habitats.

²⁸ Payments made by the private sector directly to ecosystem service providers.

²⁹ Compensations granted by governments that indirectly pay ecosystem service providers (such as tax cuts).

³⁰ An offset market that is neither regulated nor operating within a mandatory carbon pricing market. For example, a company or individual could voluntarily offset their carbon footprint by purchasing forest offsets in a foreign country.

³¹ From 2021- 2025, this limit will decrease to 4% and then increase to 6% for the years 2026-2030. Throughout all these times, at least 50% of offsets must directly benefit Californians (California Carbon, 2017).

³² Offset criteria:

- **“Real”**: offset must represent real emission reductions that have already occurred (not projected to in future)
- **Additional**: offset must represent emission reductions that are in addition to what would have occurred otherwise
- **Permanent**: offset must represent emission reductions that are non-reversible or must be sequestered for 100-years or more
- **Verifiable**: sufficient data quantity and quality must be available to ensure emission reductions can be verified by an independent third party auditor (verifier) against an established protocol
- **Quantifiable**: emission reductions represented by offsets must be reliably measured or estimated, and capable of being quantified
- **Enforceable**: offset ownership is undisputed and enforcement mechanisms exist to ensure that all program rules are followed” (EITA, 2015)

³³ Unfortunately, academics are concerned that California has substantially underestimated the emissions reductions lost to leakage. For example, forest offset programs were originally calculated to incur 20% of exported emissions from logging operations outside the state, but new estimates demonstrate these leakage emissions are closer to 80% (Kane, 2019).

commitment signed by Governor Ige in the summer of 2018 to reach carbon neutrality by 2045 (Office of Governor Ige, 2018). These approaches and their compatibility with California's cap and trade market are discussed further in Chapter 1c, Existing in Hawai'i: Programs and Opportunities.

SUMMARY: DOMESTIC POLICY ALTERNATIVES

In summary, no mandatory green visitor fee systems exist in the United States. Prominent examples of alternative green financing mechanisms that have been utilized in the U.S. include: special taxes and fees, green bonds, carbon pricing, and offset markets (PES). Special sales taxes apply a traditional financing approach and raise taxes to fund the environment; these taxes do not differentiate based on residency, demographic, etc. Green bonds are optimal for financing large-scale projects with high upfront capital costs; however, they require repayment. A green bond is a form of debt financing that is either tax financed by the government or repaid through returns from the project. An external revenue source, such as a green fee, could be used to secure the bond. Carbon pricing is being explored as a promising increased source of revenue to combat climate change. The revenues from carbon taxes have traditionally been used to offset equity concerns and fund climate mitigation and clean energy projects, rather than conservation. However, Hawai'i could pursue a different allocation structure for carbon pricing revenue. Moreover, carbon markets pave the way for carbon offset markets, a type of payment for ecosystem services (PES), which can directly fund local conservation efforts.

1C | EXISTING POLICY APPROACHES IN HAWAI‘I: PROGRAMS & OPPORTUNITIES

Currently, Hawai‘i has two financing schemes in operation that are directly relevant to a green fee system. These include the Transient Accommodation Tax (TAT) and the “Barrel Tax.” Additionally, recent attempts have been made towards a large-scale carbon pricing system for the state. Examples of smaller-scale financing schemes include the Legacy Land Conservation Fund, The Nature Conservancy’s Kona Hema Forest Carbon Offset Project (in development), and DLNR-DOFAW’s forest carbon projects (in development).

A popular assumption is that the two large-scale existing schemes, the TAT and the Barrel Tax, were established with the intent of being “green” programs (i.e., primarily dedicated to funding the environment), and that they have strayed substantially from their commitment to do so. As historical analysis demonstrates, that interpretation is generally true for the Barrel Tax and less applicable to the TAT. Both programs could be remodeled to more explicitly fund conservation and natural resource management.

Table 5. Existing Policy Approaches in Hawai‘i:

Program	Amount	Year Established	Assessment Location	Percentage of Green Revenue Allocation	Total Annual Revenue (2018)	Annual Revenue Allocated to the Environment (2018)
Transient Accommodation Tax	10.25% on the gross rental proceeds from a transient accommodation	1986	Accommodations	1%	\$554.9M	\$4.5M
Environmental Response, Energy, And Food Security Tax (“Barrel Tax”)	\$1.05/ barrel of petroleum product; ³⁴ and; \$0.19 / one million British thermal units of fossil fuel	1993 ³⁵	Paid by distributor selling to retail dealer	43%	\$27M	\$11.6M
The State Conveyance Tax	Varies from 10¢ per \$100 to \$1.25 per \$100 of property value	2005 ³⁶	Transaction of real estate	10% or not to exceed \$6.8M	\$100.6M	\$6.8M
Proposed Future Programs:						
Carbon Tax (SB1463)	\$6.25/ton of CO ₂ e	Bill died in 2019 session	Fossil fuel emitters	100% ³⁷	\$11.6M	\$11.6M
Carbon Tax (HB1287)	\$20/ton of CO ₂ e increasing to \$55/ton of CO ₂ e	Bill died in 2019 session	Fossil fuel emitters	50%	N/A	N/A
Kona Hema Forest Carbon Offset	\$9 - \$12/carbon offset credit	2019	Voluntary carbon markets	N/A	N/A	N/A
Kahikinui/Nakula Forest Carbon Project	\$9 - \$12/carbon offset credit	2019	Voluntary carbon markets	N/A	N/A	N/A

³⁴ Excluding aviation fuel and fuel sold to refineries

³⁵ From 1993 – 2010, the tax was \$0.05/barrel

³⁶ The year the Legacy Lands Act was implemented

³⁷ However, SB1463 would have provided no net gain in environmental revenue because it was proposed to replace the Barrel Tax.

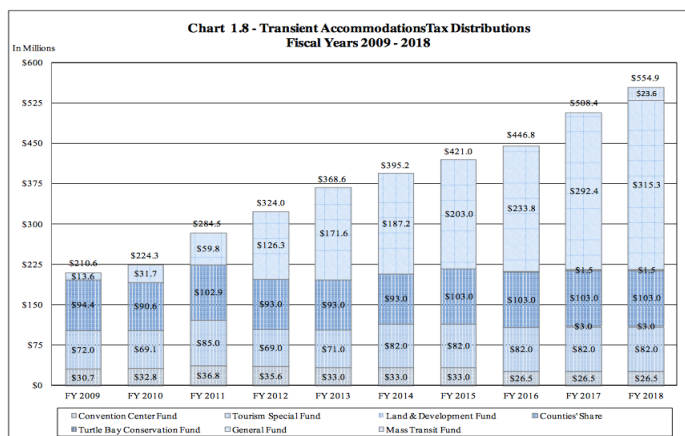
TRANSIENT ACCOMMODATION TAX

The Transient Accommodation Tax (TAT) is a 10.25% tax imposed on the gross rental proceeds from a transient accommodation in the State of Hawai'i, where a transient accommodation is defined as a room, apartment, house, condominium, beach house, hotel room, suite, or similar living accommodation rented to a transient person for less than 180 consecutive days in exchange for payment in cash, goods, or services (Department of Taxation, 2018). In 2018, the TAT generated \$554.9 million, directed toward the following purposes (Department of Taxation, 2018):

- \$315.3 million allocated to the state general fund
- \$103 million divided among the four island counties;
- \$82 million to support HTA's management of tourism for the State of Hawai'i;
- \$26.5 million to support the Hawai'i Convention Center's operations and obligations;
- \$23.6 million to support the Mass Transit Fund
- \$3 million to support the State Department of Land and Natural Resources; and
- \$1.5 million to support the Turtle Bay Conservation Easement Fund (Governor of Hawai'i, 2018).

Each year less than 1% of that revenue is allocated directly to the environment. Moreover, Figure 2 demonstrates how the proportion of TAT revenue allocated to the general fund has increased overtime, while the proportions of TAT revenue allocated to other users have stayed relatively stagnant.

Figure 2. TAT Revenue Allocation Over Time (Department of Taxation, 2018)



In 1986, the Transient Accommodation Tax was passed at a rate of 5% with no earmarking, despite the visitor industry only agreeing to champion a 2% rate of which funds would be marked towards the construction of a convention center and tourism promotion (Kalapa, 1997).³⁸ According to the Tax Foundation of Hawai'i, the TAT was never designed with the intent to fund the environment (rather, it was intended to fund the convention center and tourism promotion).³⁹ Perhaps for this reason, there is a long history of failed attempts to reallocate the TAT towards conservation. The history and politics of these bills are discussed in depth in Appendix 5. In short, several bills over the past years have attempted to increase the portion of the TAT revenue allocated to DLNR's special funds. In some measures, the importance of funding the environment was undermined by the battle of revenue ratios between the counties and the state. For example, as seen by the testimonies of SB534 Relating to the TAT, the measure did not die due to its proposal to increase the percentage of TAT revenue to the State Parks Special Fund and Special Land and Development Fund; the measure appeared to die because counties were opposed to the proposal to remove the counties' cap on TAT shares, but restrict their use of the increased funds exclusively to marketing and promotion of tourism related activities. In other cases, such as SB950, despite individuals supporting the measure, reallocating TAT funds to the environment was specifically opposed by HTA and The Tax Foundation of Hawai'i. Those in opposition pressured the state to use general funds for the environment, arguing such allocation benefits residents not just visitors.

More recently, in 2017, SB703 attempted to increase DLNR special fund allocations of the TAT in accordance with visitor arrival numbers.⁴⁰ SB703 was carried into the 2018 legislative session, where it became SB2446, received a public hearing, and eventually died. The Department of Budget and Finance opposed the measure; rather than automatic transfers, they strongly believed funding should be authorized by the legislature upon due consideration of program requirements. DLNR's director Suzanne Case supported the intent of the measure, but voiced concerns around the predictability of funds based on variable visitor arrivals. For a longer discussion of the history of attempted TAT amendments, see Appendix 5.

FUEL TAXES

Both states and counties have fuel taxes by category of fuel. For example, the state imposes a \$0.16 state tax on gasoline and diesel oil, with Kauai County requiring an additional \$0.17 per gallon, Maui County an extra \$0.18 per gallon, Hawai'i County \$0.088 extra per gallon, and Honolulu City and County an additional \$0.165 per gallon. There are fuel taxes for liquefied petroleum gas, ethanol, methanol, biodiesel, naphtha, Compressed Natural Gas,

³⁸ Initial legislative bills and amendments proposed to increase the General Excise Tax (GET), a 4% tax on the gross income of all goods and services, to a 9% GET specifically for transient accommodations (H.B. No. 2805-86 H.D. 1, 1986). The GET pyramids the tax burden for businesses because the amount of the tax is the product of the gross receipt plus the tax amount "passed on" to the customer. Thus, the House Finance Committee, Hawaii Hotel Association, and Ways and Means Committee, among other testifiers, preferred that a separate tax be established that is applicable only to the cost of the room and not inclusive of the charge passed onto the consumer (Testimony from the House Finance Committee on HB 2805, HD 1, 1986).

³⁹ Testimonies on H.B. 2805-86 H.D. 1 from the Hawaii Hotel Association and Hawaii Visitors Bureau confirm this narrative.

⁴⁰ SB703 proposed that if total number of visitors exceeds 9 million or if total number of visitors to any county exceed six million, then 15% of the HTA budget, including any TAT revenue shall be given to natural resource and public infrastructure management. Similarly, an additional 5% of HTA's budget multiplied by the greater of the following would have applied: 1) the number of increments of 500,000 visitor arrivals in excess of 9.0 million in the State; or 2) the number of increments of 125,000 visitor arrivals in excess of 6.0 million visitor arrivals in any county. The measure lastly capped the maximum amount transferred out of HTA's budget at 45% (S.B.703, 2017) (Testimony of George Szigeti, CEO of HTA, 2017).

Liquefied Natural Gas, Petroleum Products, and Fossil Fuels (Department of Taxation State of Hawaii, 2016). The latter two fuels fall under the colloquial name of “Barrel Tax” and are discussed below. The total tax revenue from fuel-based taxes was \$201.8M in FY17/18.⁴¹

ENVIRONMENTAL RESPONSE, ENERGY, AND FOOD SECURITY TAX (“BARREL TAX”)

In 1993, the Environmental Response, Energy, and Food Security Tax was established, taxing \$0.05 per barrel of petroleum. In 2013, this tax was increased by a dollar, to \$1.05 per barrel of petroleum product – excluding, aviation fuel and fuel sold to refineries. In 2015, the tax expanded to include fossil fuels, such that each unit of fossil fuel, measured in millions of British thermal units (MMBtu), sold by a distributor was taxed at a rate of \$0.19 per MMBtu.⁴² Colloquially referred to as the “barrel tax,” the environmental response tax’s legal name is the “Environmental Response, Energy, and Food Security Tax” speaking directly to its originally-intended uses (Department of Taxation State of Hawaii, 2016). Despite this, only \$0.45 for each taxed barrel is distributed to environmental special funds. Those funds include: Environmental Response Revolving Fund,⁴³ Energy Security Special Fund,⁴⁴ Energy Systems Development Special Fund,⁴⁵ and Agricultural Development & Food Security Fund.⁴⁶ The remaining majority, \$0.60 per taxed barrel, is apportioned to the state general fund. The revenue from the Barrel Tax averages approximately \$27M a year (Department of Taxation State of Hawaii, 2016). In 2013, Act 73 further cut the environmental special funds’ portion to \$0.35 of the \$1.05, increasing general fund revenue to \$0.70 per barrel taxed (Coffman & Wee, 2014). SB2196 attempted to dramatically increase the allocated amounts to the special funds but succeeded in only restoring them to pre-2013 levels in addition to extending the law through 2030. DBEDT comments that the Environmental Response, Energy, and Food Security Fund has been an important source of funding for their clean energy initiatives that relate to the state goal of 100% RPS by 2045 (Statement of Mike McCartney Director of DBEDT, 2019). Please see Table 6 in Appendix 5 for a visual history of Hawai‘i’s barrel tax.

HAWAI‘I GREEN ENERGY MARKET SECURITIZATION “GEMS” BOND

Hawai‘i has begun to explore green bonds as a green financing tool. In 2014, the Hawai‘i State Department of

Business, Economic Development, and Tourism (DBEDT) issued a green Asset Backed Security (ABS) to expand solar and clean energy installation under a program known as GEMS (Green Energy Market Securitization). Bonds issued by governments are often known as securities. DBEDT’s green bond is worth \$150M, rated AAA, and broken into two tranches: a \$50M 8 year tenor with a 1.467% coupon and a \$100M 17-year tenor with a 3.245% coupon.⁴⁷

The “asset backed” part of asset backed security means the bond is collateralized. This means the lender/investor has collateral, an asset owned by the borrower that works as security for the debt, should the borrower/issuer default on their repayment. In this case, Hawai‘i’s DBEDT bond is backed by a Green Infrastructure Fee applied to electricity bills of state utility customers,⁴⁸ much like a green visitor fee could provide a repayment method for a green bond. This monthly fee totals \$1.29. The state’s non-impairment pledge and the security of the Green Infrastructure Fee allowed the bond to earn the highest possible credit rating (Aaa) (Shimogawa, 2014) from Moody’s Investors Service for both tranches of the bond (Moody’s, 2014). Moody’s rating rationale was based on:

1. “the strength of the State of Hawai‘i’s legislation (Act 211), including the state’s non-impairment pledge
2. the irrevocable regulatory financing order issued by PUC authorizing the creation of the green infrastructure property
3. the remote likelihood of a successful legislative challenge to the securitization charge
4. the size, stability, and diversity of the ratepayer base in Hawai‘i’s service area, from whom the charges will be collected
5. credit enhancement consisting of a statutory uncapped true-up mechanism that mandatorily adjusts the securitization charges to ensure sufficient collections to allow for timely payments on the bonds, and a reserve subaccount fully funded at closing with 0.50% of the initial principal balance of the bonds
6. Moody’s assessment of the ability and experience of the servicers” (Moody’s, 2014).

This municipal bond (or muni bond)⁴⁹ was invested in by a mix of 25 investors including, traditional muni bond

⁴¹ Of this revenue, \$83.5 million was distributed to the state highway fund, \$86.9 million to the counties’ highway funds, \$1.7 million to the state boating fund, and \$2.6 million to the airport fund. The remaining \$27 million from the Barrel Taxes was distributed to the environmental response funds. Taxable fuel consumption increased from 887.4 million gallons in FY17 to 920.5 million gallons in FY18. Of this, gasoline was the most consumed taxable fuel, with 466 million gallons consumed in FY18. The second largest consumption of taxable fuel was aviation fuel (Department of Taxation, 2018). See page 16 of the State Tax Report FY17/18 for a detailed schedule of fuel tax rates by county.

⁴² Excluding petroleum products (Department of Taxation State of Hawaii, 2016).

⁴³ Monies allotted to the **Environmental Response Revolving Fund** must be expended on removal, detection, remediation of oil, pollutants, or contaminants.

⁴⁴ Monies allotted to the **Energy Security Special Fund** are expended on clean energy initiatives.

⁴⁵ Monies allotted to the **Energy Systems Development Special Fund** are expended on the development of an integrated approach to and management of renewable energy and energy efficient technologies that will reduce Hawai‘i’s dependence on fossil fuels and imported energy sources.

⁴⁶ Monies allotted to the **Agricultural Development and Food Security Fund** are used to address Hawai‘i’s over reliance on imported food and energy and the vulnerability that this creates in energy and food security, as well as negative impacts on biosecurity and our economy.

⁴⁷ Goldman Sachs and Citigroup were bookrunners for this ABS, meaning they were the main underwriters and lead managers of the security issuance.

⁴⁸ Note, there is no net increase in fees for customers because this green infrastructure fee replaced a Public Benefits Fee, which was removed the same year.

⁴⁹ A municipal bond is issued by a local government or one of their agencies (as in the case here, DBEDT is an agency within the local state of Hawai‘i government)

investors, socially responsible investors, and local retail⁵⁰ investors.⁵¹ The interest earned on the bond is exempt from state taxes, but not federal ones (Shimogawa, 2014).

GEMS specifically funds upfront costs of installing PV panels and other clean energy infrastructure for residents who could not otherwise participate in Hawai'i's clean energy transformation due to the high startup costs and delayed returns. Under GEMS, consumers can borrow in order to make clean energy investments that will show savings in their electric bills on day one (Hawaii State Energy Office, 2015).

CARBON PRICING ATTEMPTS IN HAWAI'I

In 2017, the Tax Foundation of Hawai'i listed a carbon tax as one of the best financial instruments to increase state revenue (Tax Foundation of Hawaii, 2017).⁵² A proposal from the Brookings Institution estimates that a carbon tax could generate an extra \$365 million annually for the state (Brookings Institute, 2016). The Brookings analysis does not appear to incorporate costs of revenue neutrality.⁵³ The funding designated by this year's legislature to investigate carbon pricing should help place a more robust estimate on revenue from such a tax.

Despite the global momentum behind carbon pricing and the Tax Foundation's explicit recommendation for a carbon tax, bills proposing carbon pricing failed quickly in the most recent 2019 legislative session. In fact, there were six separate bills related to carbon pricing, many of which did not receive hearings:

- HB1169: a short-term bill relating to the barrel tax
- HB1287: proposing a carbon tax on distributors for every ton of carbon dioxide they emit, progressing from \$20/ton in 2020 to \$55/ton in 2034
- HB1459: proposing to replace the "Barrel Tax" with a carbon emissions tax
- SB1463 SD2: similarly, proposing to replace the "Barrel Tax" with a carbon emissions tax
- HB1579: proposing a carbon tax of \$15 per ton of carbon dioxide emitted from the use of fossil fuel
- HB1584 HD2 SD1: proposing to appropriate funds to the Office of Planning to conduct a comprehensive study of a statewide carbon tax

Three of the above carbon pricing proposals, SB1463, HB1287, and HB1579, are discussed in detail in Appendix 5, Existing Policy Approaches in Hawai'i. As mentioned in Chapter 1b, revenues from other carbon pricing programs in the U.S. have not substantially supported conservation needs. Based on carbon pricing proposals at the 2019 State of Hawai'i legislature, one could expect the same of a carbon pricing program in Hawai'i. For example,

⁵⁰ Retail investors are individuals, rather than institutions, who purchase securities for their own personal financing.

⁵¹ Community based investment, especially through retail investors, is considered an important aspect in renewable energy finance development.

⁵² The Tax Foundation further states that, "Hawaii would be the perfect state to exhibit "national leadership" in this area. *Which is another way of saying that if this tax is enacted in Hawaii, the Department of Taxation would have no clue how to administer or enforce it; it would have to start from ground zero. There would be no assurance whatsoever that the \$360 million would magically appear in the State's coffers. And, no one would know or be able to inform the populace about what secondary economic effects could be expected, such as a major jump in electric rates given that most electricity in Hawaii is produced by burning bunker fuel*" (Tax Foundation of Hawaii, 2017).

⁵³ The \$365M is based on 2013 emissions and a \$20/ton value.

HB1287 proposed a carbon pricing program that would have expended half of the revenue addressing revenue neutrality and returning revenue to taxpayers; the remaining 50% would have been split between the Environmental Response Revolving Fund and Energy Security Special Fund, neither of which expend funds directly on conservation. SB1463 alternatively, would not have generated any new revenue for conservation or for the state.

THE KONA HEMA FOREST CARBON PROJECT

Two recent studies by The Nature Conservancy (TNC) and partners found that natural climate solutions (i.e., conservation, restoration, and improved management of forests, agricultural lands and wetlands) can provide carbon storage and avoid greenhouse gas emissions equivalent to 21% of current U.S. annual emissions and 37% of cost-effective mitigation needed through 2030 toward holding global warming below 2°C (Fargione & Basset, 2018) (Griscom, Adams, & et al., 2017). Motivated by this research, TNC is implementing forest management practices at its Kona Hema Preserve on Hawai'i Island that will improve forest health and water recharge, sequester carbon, and produce marketable carbon emission offset credits. The project seeks to demonstrate the carbon sequestration capacity and economic opportunity from native forest management and restoration. TNC estimates that Kona Hema could provide 130,000 carbon offset credits (1 credit = 1 tonne of carbon) over a 20-year period.

Offset projects like the one at the Kona Hema could be scaled. The process for becoming registered to sell credits on offset markets requires an approved Offset Project Registry (OPR) and a third party verifier (American Carbon Registry, 2019). While carbon offset projects provide a promising opportunity to generate revenue as a result and in support of natural resource management, the timeline for bringing large scale carbon offset projects in Hawai'i to market will not likely address the urgent need for conservation revenue in the short term.

DLNR-DOFAW FOREST CARBON PROJECTS

The Division of Forestry and Wildlife, a division of the Department of Land and Natural Resources (DLNR), manages two forest carbon projects similar to the Kona Hema Forest Carbon Project. The Pu'u Mali Forest Carbon Project on the island of Hawai'i and the Kahikinui/Nakula Forest Carbon Project on Maui are both being developed with the intent to provide carbon offsets to voluntary markets (Sprecher, 2019). Restoring these forests can enhance the natural benefits they provide, including climate change mitigation through carbon dioxide fixation and reef protection through reduced erosion and run-off. DLNR-DOFAW intends to register the Kahikinui/Nakula carbon project with the Verified Carbon Standard (VCS), the world's most largely used voluntary GHG program (VERRA, 2019). To do so, DLNR-DOFAW has contracted a third party verifier to begin understanding the costs and potential

revenue associated with this process. The initial estimate for registering the 4,700 acre area is \$100K-150K. The initial calculation for returns estimates 100,000 credits will become available through the restoration project. DLNR-DOFAW anticipates that the registration process will take less than a year (Sprecher, 2019).

LEGACY LAND CONSERVATION FUND

In 1973, the state of Hawai'i established the "Land Conservation Fund" through Act 77 with the intention to protect land from development (Office of the Auditor, 2019) (Sunset Ranch, 2009). This fund sat idle until Governor Linda Lingle signed the Legacy Lands Act into law in 2005, which established The Legacy Land Conservation Fund (LLCF), a "permanent adequate" funding source for land conservation (DLNR, 2018). The fund generates revenue by acquiring 10% of all state conveyance taxes. Conveyance taxes are imposed on the transactions of any commercial and residential real estate (Sunset Ranch, 2009). The tax raises enough to fund about \$5M in grants each year. The nine-person advisory committee, known as the Legacy Land Conservation Commission, advises the Board of Land and Natural Resources on which projects to fund with the revenue. The nine advisors have limited terms and are nominated by the Governor and approved by the Senate (Division of Forestry and Wildlife, 2019). Projects recently funded include: MA'O Organic Farms – Palikea, Amy B.H. Greenwell Ethnobotanical Garden, Turtle Bay Makai-Kahuku Kawela Forever, Ala Kahakai Trail Association, Upper Kūka'iau Ranch, Maunaloa Fishpond Heritage Center, and many more.

Despite these achievements, DLNR has received considerably poor press after an auditing agency exposed mismanagement.⁵⁴ In short, DLNR mistakenly paid \$658,000 to the government for state fees that they are statutorily exempt from, missed fiscal deadlines which damaged grant project impacts, failed to report money transferred out of the LLCF into a DLNR trust account, and granted DOFAW funding from the LLCF without adhering to the one year standardized public application process, among other issues (Hawaii State Auditor, 2019). DLNR's current Director, Suzanne Case, attributes the issues in the auditor's report to a time period where leadership was in transition (Perez, 2019). The auditors concurred that DLNR did not have a transition plan in place when the former Program Manager resigned, resulting in most of these problems (Hawaii State Auditor, 2019). The auditor further finds that DLNR never prepared a Resource Land Acquisition Plan, or a long-term plan, to guide the program in a purposeful and transparent direction. The program was further criticized because, of the 58 projects awarded (valuing \$47M), only about half reached completion ("e.g. purchased and conserved") (Hawaii State Auditor, 2019).

Thought leaders who shared their insight for this research recognize the integrity of the many individuals managing DLNR; however, this history has hurt the cause to direct more funds to conservation. This history illustrates the need for a transparent management structure for a green tourism fund. This additionally demonstrates the desirability of a public-private governance design and clear project criteria. Public-private management structure is discussed in

Chapter 2 - Operations, Governance, and Impact.

CONCLUSION: EXISTING POLICY APPROACHES IN HAWAII: PROGRAMS AND OPPORTUNITIES

In conclusion, Hawai'i has experimented with similar financing tools as those seen across the country: special taxes, green bonds, carbon pricing programs, and carbon offset sites. Even with this progress, Hawai'i is still underinvesting in its natural resources by 40%. This shortcoming can in part be attributed to the fact that these mechanisms are not used in their full capacity to fund conservation. However, given Hawai'i's unique vulnerabilities to climate change and rising human pressures from visitors, the islands require further innovative conservation financing tools, such as a green fee, to sufficiently manage their natural assets. Opportunities to use current mechanisms to better fund the environment are briefly discussed below. Operational options for a visitor green fee in Hawai'i, given the legal, economic, and political parameters that have been discussed, are outlined in Chapter 2.



Kalalau Trail, Kaua'i © Luana Luna

“SPECIAL TAXES:”

Less than half (43%) of the “Barrel Tax” supports environmental programs, despite being designed with the intention of funding environmental response, energy, and food security programs as indicated in the legal name of the tax. Similarly, less than 1% of the Transient Accommodation Tax (TAT) goes directly to the environment. Increasing the conservation revenue from these sources would lessen the conservation budget gap.

GREEN BONDS:

Bonds provide opportunity to scale impact in expedited time frames. Upfront capital provided by a green bond could fund large-scale conservation projects in time for the statewide Aloha + 2030 sustainable development timeline and deliver immediate and visible rewards to residents and visitors. In order to avoid debt financing the bond(s), a green fee coupled with this green bond could be utilized to repay interest and principal on the bond. A more comprehensive understanding of the cost of the 2030 Aloha+ Targets and

⁵⁴ A summary of the auditor's report [here](#).

the conservation budget deficit could demonstrate whether or not large upfront capital is needed to meet conservation needs and timelines.

CARBON AND CARBON OFFSET MARKETS:

The estimated annual conservation budget deficit in Hawai'i is \$360M; coincidentally, the estimated annual revenue generated by a \$20 carbon tax in Hawai'i is \$365M (Brookings Institute, 2016). While it may appear carbon pricing programs could provide a substantial funding source for conservation in Hawai'i, example carbon pricing programs discussed in Section 1b demonstrate that is generally not the case. While powerful climate finance tools, carbon pricing programs (cap and trade and carbon taxes) have not been used as large-scale conservation finance instruments. As seen by California's cap and trade program and RGGI, carbon pricing revenues are primarily used to maintain revenue neutrality and offset concerns of inequity. If funds remain, they have been largely recycled into clean energy initiatives (e.g. cost-effective energy upgrades for low-income families) and climate related infrastructure investments (e.g. low-carbon public transportation), rather than conservation projects (e.g. invasive species, watershed protection etc.).

Climate adaption/mitigation and conservation are closely linked. Investment in Hawai'i's natural resources provides climate adaptation and mitigation services; correspondingly, investment in climate adaption and mitigation reduces damage and deterioration of ecosystems and their economic services. Thus, climate-related financial tools are mechanisms to leverage the investments in conservation, and vice versa. However, if a carbon tax or cap and trade program in Hawai'i is modeled after other domestic programs, closing the conservation budget gap would likely not be the main funding priority.

CARBON OFFSETS:

Carbon pricing programs benefit conservation by providing a regulated market to sell carbon offsets. California's Compliance Offset Market is an example of a regulated offset market, for which programs like The Kona Hema Forest Carbon Project could register to sell offset credits. Carbon offset programs are a type of green finance that brings funds into Hawai'i from outside Hawai'i. For example, the 450 businesses under the California cap and trade program would be potential buyers of offset credits developed from registered programs in Hawai'i. However, demand for regulated carbon offset credits is limited. For example, California's cap and trade program only allows 8% of total compliance obligation to be attributed to offsets. After 2020 that limit is lowered to 4%. Additionally, the process to register as an offset program is time-intensive and requires funding for dedicated land use, start up costs, third party verification, and monitoring. Given Hawai'i's urgent need for conservation funds, carbon offsets alone likely will not be a sufficient green finance mechanism for the state.

STATE GENERAL FUND:

The State of Hawai'i consistently ranks between 45th and 48th in the country for percentage of state funds spent on natural resource management (Conservation International,

2016). Given the economic and cultural value of Hawai'i's natural environment, the state could re-evaluate these funding priorities. However, increasing general fund allocations to the environment would either require raising taxes on residents or reducing current funding for other likely vital public services.

Even if Hawai'i optimized the above finance mechanisms to best fund conservation, it is unlikely that doing so would fully balance the conservation budget. Additionally, most of these mechanism do not engage the nearly 10 million annual visitors who impact the islands and the wellbeing of the 1.4 million year-round residents. Chapter 2a explores available operational pathways to capture revenue from visitors to fund conservation in Hawai'i.

CHAPTER 2: OPERATIONS, GOVERNANCE, & IMPACT

2A | OPERATIONS: CAPTURING AND MANAGING A GREEN FEE

This section of the report focuses on the governance, operations, and management of a potential green fee system. Information in this section draws from the review of existing green fee systems in other jurisdictions, as well as analysis of the existing policy landscape in Hawai'i.

OPPORTUNITIES TO GENERATE MANDATORY CONSERVATION REVENUE FROM VISITORS

A recent analysis determined that a conservation contribution of \$38.50 per visitor would be sufficient to cover Hawai'i's estimated annual conservation finance budget deficit of \$358M (Fitzpatrick, 2018). Alternatively, a \$25 fee could cover nearly two-thirds of the conservation budget deficit.⁵⁵ Opportunities to generate this mandatory conservation revenue from visitors are broken into two categories: "options for establishing a mandatory green fee" and "mandatory alternatives to establishing a green fee." The primer includes green fee assessment at accommodations, rental car agencies, or an electronic platform. The latter includes greening an already established visitor tax, the Transient Accommodation Tax (TAT) or establishing a visitor recreation permit/license.

OPTIONS FOR ESTABLISHING A MANDATORY GREEN FEE

Current legal understanding of the Commerce and Comity Clauses of the U.S. Constitution restrict Hawai'i from assessing a green fee or tax on non-residents. Current legal understanding of the Anti-Head Tax prevents Hawai'i from assessing a green fee at airports or on the sale of airfare. Therefore, locations for assessing a mandatory green fee that captures the majority of revenue from visitors, include: accommodations (hotels; short-term vacation rentals), rental car agencies, or an electronic platform. Each of these options require additional legal research.

⁵⁵ Estimate does not account for program administrative costs.

Accommodations:

A visitor green fee assessed at accommodations would look similar to the Transient Accommodation Tax (TAT), except it would presumably be a fee rather than a tax. Further legal investigation is warranted to clarify the different legal benefits and boundaries of a tax versus a fee. Because the TAT already exists at the hotel level, hotels are likely to feel extra burdened by any additional fees. In addition to the 10.25% Transient Accommodation Tax (TAT), hotels are required to assess the General Excise Tax (GET). Unlike a sales tax, which is paid by costumers, the 4.166% surcharge is paid by businesses on their gross income. Thus, hotels are already adding nearly 15% of their guests' bills as fees.

If one assumes the typical stay duration for a couple is 10 days with an economy room costing \$100/night, then a green fee of \$38.50 per visitor would be equivalent to an additional 7.7% surcharge to their pre-tax accommodation costs. For a luxury hotel room that costs \$400/night, assuming the same 10-day vacation length, two \$38.50 green fees for the couple would represent less than 2% of their pre-tax room costs.

Short-term vacation rental laws are currently shaping the opportunities to utilize short-term rental platforms as a location for fee assessment. Additionally, depending on state and county politics, short term rental policies could change the revenue pool for the TAT. One study estimated that including alternative accommodations in the TAT and GET revenue base could increase state revenue by \$46M (Lovell, 2019). As state and county politics on short-term vacation rentals continue to evolve, so will an understanding of their role in a green visitor fee.

Further legal research is required to understand the extent to which the expenditure of fee revenue collected at accommodations must benefit those who pay the fee. Further legal research may uncover additional legal barriers that remain currently unknown to the researchers of this report.

It is unclear how politically feasible a green fee assessed at transient accommodations would be. Historically, similar measures have not been successful. In 2017, HB1453 attempted to impose a \$20 tax on each guest of transient accommodations to fund conservation efforts.⁵⁶ The bill proposed that the estimated \$103M of revenue from the

new conservation tax be allocated to the Special Land and Development Fund, provided that those funds be expended in accordance with the Hawai'i Tourism Authority's strategic plan. HB1453 died in the House Committee on Tourism and House Committee on Finance shortly after introduction.

Rental Car Agencies:

While the hotels already bear the cost of the TAT, rental car agencies share a similar burden of fees to assess. Mandatory, industry-wide fees⁵⁷ required by the state include:

- Hawai'i Motor Vehicle Surcharge Tax: \$5/day
- Hawai'i Rental Vehicle Customer Facility Charge: \$4.50/day
- Airport Concessionaire/ Recovery Fee: 11.11%
- Honolulu County Tax: 0.564%
- Vehicle License Fee: \$0.35 - \$1.45/day
- General Excise Tax (GET): 4.166%

Hawai'i is not alone in its rental car fees; over 40 states across the country assess fees on short-term car rentals (Hiltz & Martel, 2015).⁵⁸ In Hawai'i, a four-person economy car costs about \$500 (excluding fees) for 10 days. After adding the fees listed above, the price increases to around \$680. Therefore, 26% of the cost to rent a car is comprised of fees. If the green fee were to be assessed at car rental agencies, a couple would pay an additional \$77, equivalent to 15% of the pre-fees cost, a considerably larger percent than assessing at a hotel. This would additionally increase the fee portion of the car rental cost to 34% of the total cost.⁵⁹

Turo, the "Airbnb" of car rentals similarly lessens the tax base for green fee assessment. At this point it remains unclear whether Turo and alternative car rental platforms could be required to act as green fee collectors.

As with accommodations, further legal research is required to demonstrate the extent to which funds acquired from a rental car fee, or tax, could fund conservation, and the extent to which a clear nexus would have to be demonstrated. Further legal research may uncover additional legal barriers than those known to the writers of this report.

⁵⁶ HB1453 was introduced by representatives Decoite, Choy, Creagan, Evans, Har, Ito, Lopresti, Souki, Woodson, Yamashita, Gates, Nakamura.

⁵⁷ **Hawai'i Motor Vehicle Surcharge Tax:** this surcharge was developed with the intention to generate revenue for the state of Hawai'i general fund. This January, 2019 the fee was increased from \$3/day to \$5/day; however, for those with a Hawaiian driver's license, the fee remains \$3/day (Hawaii Car Rentals, 2019).

Hawai'i Rental Vehicle Customer Facility Charge: this fee is deposited into special funds for operations and improvements of existing rental motor vehicle customer facilities (Hawaii Car Rentals, 2019).

Airport Concessionaire: if customers rent from an agency on airport grounds, this tax is assessed to both the Base Rate and Vehicle License Fee at the Honolulu Airport, but only to the Base Rate at the other islands' airports (Hawaii Car Rentals, 2019).

Vehicle License Fee (or Vehicle Registration Fee / Weight Tax): all locations are required by the state to charge this registration fee (Hawaii Car Rentals, 2019).

Honolulu County Tax: this country surcharge is specific to Oahu.

GET: the majority of businesses in Hawai'i that sell goods or provide services are required to pay the state general excise tax on their gross income. Unlike a sales tax, which is paid by the consumers of the good or service, the GET is paid by the provider of the good/service. The GET is not technically a sales tax; the state of Hawai'i does not have a sales tax in addition to the GET. In the City and County of Honolulu the GET is 4.5%, slightly higher than the statewide 4.166% (Department of Taxation, 2018).

⁵⁸ None of these fees appear to fund the environment.

⁵⁹ A Note on Elasticities: an elasticity is a measurement of proportional change in one economic variable compared to another. In general, economists have tools available to estimate the impact of a price shift, such as a green fee, on visitor arrivals. UHERO's Carl Bonham finds that these elasticities can vary with the location of price changes. For example, an increase price on airfare can have a different elasticity than an increase price of hotel rooms (Bonham, 2013). This could have potential impact on the decision of where to assess a fee. Further pursuit of a green fee in Hawai'i could warrant a targeted analysis of visitor demand elasticity.

Electronic Assessment:

Electronic assessment platforms provide opportunities for innovative technological options for capturing visitor revenue and educating visitors in the process. As these systems are evolving, this area will warrant additional investigation.

As discussed in Chapter 1a, Aotearoa (New Zealand) launched an Electronic Travel Authority in July 2019. While this platform was predominantly developed and funded by the country's immigration department, the electronic system also is used to collect New Zealand's new environmental tourism levy (US\$24). Palau similarly launched a Pristine Paradise Palau app that pairs with their Pristine Paradise Environmental Fee to educate visitors on environmental issues and respectable tourist practices. Because the PPEF is assessed on airline tickets, Palau's app is not used as an assessment tool, but it provides inspiration for the additional benefits a green visitor app could include.

Operating as both an app and a web browser, a green visitor electronic platform in Hawai'i could be easily accessible on most visitors' smart phones. For those without smart phones, kiosks or ipads in relevant locations could provide an alternative opportunity for payment and free visitor information, perhaps as a part of the room, vehicle, or port of entry check-in process.

At this point, it is unclear how an electronic assessment tool would operate in a mandatory green fee scenario. Similarly, it is unclear what agency in Hawai'i would be able to pursue this option, or if an agency would need to be created.

Before an electronic assessment tool is put into operation, an agency must be identified to impose this fee and collect the money. Further legal investigation of how technological payment platforms interact with relevant laws and policies is warranted.

An electronic platform could have several positive benefits. A mobile app with location tracking enabled, could send safety information and environmental education specific to the locations that visitors enter. This app would further provide a platform to demonstrate transparency and show the specific ways that the green fee revenue is benefitting the visitor and the environment. For example, as visitors drive past the Ko'olau forest the geo-fencing⁶⁰ functionality of a mobile app could send them an alert informing them that 20% of their green fee was used last year to protect high priority watersheds. This app could provide various benefits including pre-paid parking, rush-hour information, visitor site information etc. An informative app operating in a voluntary green fee scenario, could be well worth the \$38.50 fee. Additionally, this app could provide a mechanism to collect data that would benefit various departments and state agencies.

MANDATORY ALTERNATIVES TO ESTABLISHING A GREEN FEE

Given the legal and political parameters of establishing a new visitor green fee, Hawai'i could explore amending existing policies and program to capture mandatory conservation revenue from visitors. Those options include: "greening" the Transient Accommodation Tax (TAT) funds or establishing a visitor recreation permit/license. The latter requires significant legal and policy research to understand its feasibility as an option.

Greening the TAT

Given the legal and political challenges of establishing a new green tourism fee, Hawai'i could redirect funds from a tax that already captures visitor revenue, the Transient Accommodation Tax (TAT). There are two options in regard to "greening" the TAT to be a source of conservation finance: re-allocating and conditioning. There is a long history of failed attempts to reallocate TAT funding towards the environment; however, there have been no measures to condition current funding to a set of environmental criteria. This remains a possibility, as do further attempts to reallocate that are more thoughtful of the county-state dynamics and more co-generative with the visitor industry. For a history of attempts to reallocate TAT revenue towards the environment, see Appendix 5.

Electronic Recreation Permit

Another option is to explore the concept of a broad visitor recreation permit or license that must be purchased by visitors in order to gain entry and access to parklands, beaches, trails, and other natural areas. An electronic recreation permit could utilize innovative technological advances as discussed in the above electronic assessment section to send real-time, location-relevant safety information and educational material. It additionally, could be used as a mechanism to collect state data.

Some of Hawai'i's fee licensing systems differentiate between residents and nonresidents. For example, the Hawai'i Game Mammal Hunting License fee is \$20 for residents under 65 years and \$105 for nonresidents. This pricing differential is common for hunting and fishing licenses in many states. Additionally, some of Hawai'i's licenses have fee waivers for certain age and disease groups.⁶¹ States have the power to create fee-waivers for certain categories of users. Existing fee-waivers for fishing and hunting licenses in various states include: senior citizens, children, disabled persons, active military, low-income persons, veterans, and members of federally recognized tribes. For example, Hawai'i's hunting license provides fee waivers for seniors and residents of Kalaupapa, Molokai with Hansen's disease (Conservation International, 2016).⁶²

At this point, there are substantial legal and operational questions that remain unanswered about how this option

⁶⁰ **Geofencing** utilizes GPS technology to establish geographic boundaries, which then enable software responses when a mobile device enters or exists an established boundary.

⁶¹ Such fee differentiations could not apply to commercial licenses because of U.S. citizens' equal rights to conduct business on equal footing as citizens in all of the U.S. states.

⁶² There is an important difference between waivers and exemptions. With an exemption, users are not required to acquire a license; with a waiver, users must attain a license but are not required to pay the fee. Waivers may be a more beneficial approach to providing special treatment to certain user categories because full exemptions reduce data on those categories of users.

could work. Generally, accesses to activities or resources must be illegal before a jurisdiction can create a mandatory permit for those activities or resources. Legal analysis must explore which activities and resources the Hawai'i State Constitution protects public access to, and to what extent that protection is extended to non-residents. Additionally, it is unclear which government agencies would be capable of issuing a permit or license like this. Further legal research is required to understand to what extent fees collected from permits and licenses must benefit those individuals paying the fee.

OPPORTUNITIES TO GENERATE VOLUNTARY CONSERVATION REVENUE FROM VISITORS

Political and legal obstacles to a mandatory program could warrant consideration of a voluntary method to capture visitor revenue. Appendix 7 provides a brief review of Willingness to Pay (WTP) surveys performed in Hawai'i or in related locations; these analyses demonstrate correlation between a higher willingness to pay and a higher education and income demographic. If a voluntary approach is pursued, performance of a targeted WTP analysis could better inform expected visitor response and program revenue.

Generally, voluntary programs are associated with high marketing costs and relatively low returns. Additionally, stakeholders have voiced concerns over the unpredictability of revenue from a voluntary green fee program. These assumptions cannot be confirmed, as an analysis of voluntary programs was not included in this research. However, it is not guaranteed that a mandatory green fee program is more predictable than a voluntary program. Every year, the Legislature has the opportunity to amend previously passed laws, such as those amendments that slowly apportioned Barrel Tax revenue away from the environment. A mandatory green fee law may be subject to the kind of changes made to the Barrel Tax. Neither approach is entirely bullet-proof in terms of providing reliable funding streams into the future. Additionally, a mandatory program is not guaranteed to have lower initial marketing costs than a voluntary program; the investment costs required to pass a mandatory green fee through the Legislature could be substantial.

The operational options outlined in Chapter 2a could be pursued in a voluntary format. Additionally, there is a host of voluntary green finance mechanisms to explore, such as opportunities for visitors to offset their carbon footprints and donate to payment for ecosystem services sites. However, it is unlikely that a voluntary program would capture revenue from as many visitors as a mandatory program could.

Operational Cost Estimates

Once an assessment mechanism is established, the fund will present certain operational demands. There are four basic operational cost components to a green tourism fund system: staff, office space, accounting, and marketing. A green fee fund would require staff to carry out and document financial transactions, manage applications and recipient evaluations, and report out, among other tasks. It is anticipated that three to four full time staff would be needed to manage the fund. For example, the Waikiki Business Improvement District Association has four staff. Similarly, DLNR's Legacy Land Conservation Fund spent

\$209,199 on staff salaries in FY19 (around the cost of three full-time salaries). Given that green fee fund staff would be managing a significantly larger revenue source than either of these programs, more staffing or higher compensation is anticipated. Both of these programs are discussed in detail in Chapter 2b. Green tourism fund staff would require a physical working space. That office space could be provided by a public or private umbrella organization with capacity to host the program (for example, Hawai'i Green Growth is hosted by The Nature Conservancy Hawai'i). Where an office physically sits is a political and symbolic decision that must be worked out as a part of a formal public-private partnership. A deeper discussion of public-private management structure of a green tourism fund is discussed in Chapter 2b.

Depending on the location of assessment, accounting and transaction costs would vary. In a scenario where accommodations or car rental agencies collect the fee for the government, those collectors may bear the upfront assessment and accounting costs. As proposed in the Molokini User Fee bill, the green tourism fund could return some of the revenue to those assessors to compensate the increased accounting costs. Alternatively, an electronic platform would likely have higher start-up costs, but potentially lower assessment costs in the long run. In terms of electronic development costs, Palau's Pristine Paradise App cost a little over \$4,000 to develop (Pojas, 2019). Palau's app, however, is an educational tool, not an assessment tool. Aotearoa alternatively reports \$1M in costs for their Electronic Travel Authority; however, their electronic platform was built to leverage the nation's border security efforts and is assumed to be very advanced. Thus, an electronic platform can vary greatly in costs depending on the purpose and stringency of its intended use.

Additional green fee program operating costs could include marketing. Marketing is not required in a mandatory scenario; however, getting a mandatory fee passed through the Legislature would likely require time and funding for outreach and stakeholder engagement. Marketing for a mandatory scenario could also be used to demonstrate the transparency of the program and show visitors and residents the immediate and visible improvements from green fee revenue. Some marketing capacity is going to be required to demonstrate that the green fee is not a money grab, but rather an impactful revenue source that directly improves the visitor experience and local quality of life.

2B | MANAGEMENT AND ACCOUNTABILITY FOR A HAWAI' GREEN FUND

PUBLIC-PRIVATE PARTNERSHIP

The management structure of a green tourism fund must be developed to maintain the fund's fidelity towards conservation and sustainable tourism. A public-private partnership is one structural design to protect the fund from mismanagement and appropriation. The World Bank cautions that there is no set definition of a public-private partnership (The World Bank, 2018). A public-private partnership is usually a long-term contractual agreement

between a government agency (or agencies) and private sector company (or companies) that allows the private party to bare greater risk in the delivery of a public service or asset (PPP Knowledge Lab, 2017). As depicted in Section 1c, substantial portions of the TAT and Barrel Tax have been appropriated toward the general fund, which in general is difficult to return to dedicated purposes such as the environment. Moreover, government funds, like the Legacy Land Conservation Fund, have been subjected to mismanagement, decreasing trust in special funds, as highlighted in the testimonies of this year's failed Molokini User Fee bill (HB447).

In general, a public-private partnership serves to improve public services by coupling the efficiency of the private sector with the scope of government responsibility and operations (Rodriguez, 2019) (Rocca, 2017). For example, several public hospitals on Maui were recently turned over to a public-private partnership. This partnership allows new management to improve the bottom line but gives the government certain oversight rights (Chao, 2015). When applying a public-private structure to a green tourism fund, the private sector allows for a more entrepreneurial, effective management approach, while the government can champion the initiative, increase bandwidth, and provide a balance between innovation and durability.

A public-private partnership does not guarantee immunity from re-allocation or mismanagement. However the extent to which the structure will manage these issues depends on how the partnership is defined: who holds the money and what defines how the money can be spent. For example, if the money is held by the public side of the partnership and the definition/criteria of how the money can be spent is defined by law, this can be changed by the Legislature.

The Cancun Environmental Sanitation Fee's Council and Palau's PAN Fund provide examples of public-private partnerships for green fee funds. Locally, the Waikiki Business Improvement District Association and the Waikiki Beach Special Improvement District Association provide examples for a management framework.

Cancun

Cancun's Environmental Sanitation Fee Program can provide further insight into the importance of a private council. The Mexican government has a reputation for corruption, especially amongst visitors. There is little trust that government fees fund what they are advertised to (Ferryera, 2019). The Cancun Environmental Sanitation Fee Program was launched only this April 2019, and no formal visitor perception survey has been performed. However, in anticipation of poor perception, the leaders behind the fee are building campaigns to demonstrate the transparency of the fund. A key component to advertise in this campaign is the private-civic council which oversees the fund. According to Vicente Ferreyra, a sustainable tourism consultant that lives in Riviera Maya and organizer of the annual Sustainable & Social Tourism Summit in Cancun, the council is comprised of five members including the President of the Hotel Association, academics from the local university, a local NGO manager, and a legal expert on legislation. This

balance of private management over a government fund provides security for the hotel industry who markets the use of the fee to their visitors (Ferryera, 2019).

Palau

As explained in Chapter 1a, Palau's fund management is structured in part as a public-private partnership. The majority of each \$100 fee is allocated directly to the national treasury. A remaining \$30 per fee is earmarked as "Green Fee" and allocated by the PAN Fund office to the different PAN sites. This PAN Fund is technically a non-profit: *"the Protected Areas Network Fund (PAN Fund) is a registered non-profit corporation governed by a nine-member Board of Directors appointed by the initial four-member incorporators; namely The Nature Conservancy (TNC), Conservation International (CI), the Ministry of Natural Resources, Environment and Tourism (MNRET) and the Ministry of Finance (MOF) with advice and consent of the Senate of the Olbiil Era Kelulau (OEK-Palau National Congress). The purpose of PAN Fund is to serve as a financial trustee corporation for the environmental impact fee or "green fee" and for all monies received for the PAN, to support and finance PAN projects and programs thus administering, managing, fundraising, investing, monitoring and disbursing PAN monies for the financial sustainability of the PAN in Palau for conservation of ecological biodiversity and sustainable management and use of its natural resources"* (Palau PAN Fund, 2016) As discussed in Section 1a, The PAN Fund's non-profit nature is questioned by some. A consultant in Palau suggests that there are issues with the PAN Fund that might be addressed if there was more transparency and private sector involvement. For example, the government has still not promulgated new PAN regulations to reflect the change in the Ministry and the PAN Fund law that was passed over a decade ago (Holm, 2019).

EQUIVALENT MECHANISMS IN HAWAI'I

The Waikiki Business Improvement District Association provides an example of a public-private partnership utilizing the best of both sectors to improve Waikiki neighborhoods.

Waikiki Business Improvement District Association

Established in 2000, The Waikiki Business Improvement District Association (WBIDA) is a local example of a public-private partnership that addresses environmental issues as part of its scope and mandate. A collaboration of business, government, and community, the association brings to life its vision of "a clean, safe, vibrant resort destination area reflective of its Hawai'i heritage that is attractive and welcoming to both visitors and residents, and contributes to the economic prosperity of Oahu and the State of Hawai'i (Waikiki Business Improvement District Association, 2002). Improvement projects include the Mālama Waikiki Crew of streetscape maintenance and the Aloha Ambassadors hospitality service consisting of locals who welcome visitors, provide information, and spread aloha. Founded in 2000 as a 501(c)(3) nonprofit corporation, the association is dedicated to making Waikiki a premier place in which to

invest, work, and visit.⁶³

Any commercial, nonresidential property in the Waikiki Special District is assessed a service fee. Depending on the property's assessment value, the owner is responsible for paying a service fee for the neighborhood improvement benefits.⁶⁴

A state-wide legal framework sets up the structure that enables this public-private non-profit partnership. In 1999, HRS 46-80 was passed into state law; HRS Section 46-80.5 enables councils to create improvement districts, levy, assess, and collect assessments, and finance supplemental services and improvements, including the issuance of bonds (City and County of Honolulu).⁶⁵ In June of 2000 Ordinance No. 00-40 authorized the establishment of the Waikiki Business Improvements District No. 1, making it the first special improvement district in the state (Waikiki Business Improvement District Association, 2002). These city and county ordinances required that an association be established to carry out the activities described in the special district plan, and that this association be established as a non-profit. Hawai'i Nonprofit Corporation Act additionally mandates that certain public representatives and officers shall be incorporators of the association. Therefore, the WBIDA is a non-profit public-private partnership.

WAIKIKI BEACH SPECIAL IMPROVEMENT DISTRICT ASSOCIATION

The Waikiki Beach Special Improvement District Association (WBSIDA) and the Waikiki Business Improvement District Association (WBIDA) are two separate organizations each with their own Board of Directors. WBSIDA provides hospitality and custodial services to the public areas within the Waikiki District, while WBIDA focuses on the management and sustainability of Waikiki Beach (Waikiki Business Improvement District Association, 2002).

Established in 2015 via a city ordinance, the special improvement district comprises over 6,000 parcels of land.

⁶³ **Public management includes:** Honolulu City Council, Office of Mayor Kirk Caldwell, City & County of Honolulu Department of Budget and Fiscal Services, City & County of Honolulu Department of Facility Maintenance, Honolulu Police Department, and Waikiki Neighborhood Board. **Private management includes:** Luxury Row, Royal Hawaiian Center, TS Restaurants (Duke's and Hula Grill), Aston Waikiki Beach Hotel, Waikiki Shopping Plaza/Waikiki Business Plaza, Waikiki Beach Marriot Resort & Spa, Highgate, Hilton Hawaii, Kyo-ya Management Company Ltd., Quicksilver, ABC Stores, DFS Group LP, Queen Emma Land Company, Sheraton Princess Kaiulani, Honolulu Cookie Company, Hyatt Regency Waikiki Beach Resort & Spa, Outrigger Enterprise Group, and Halekulani Corporation.

⁶⁴ FY2019 rates:

- Precinct 1: Kalakaua/Kuhio Corridor [WKP100] (\$0.4000/\$1,000 assessed value)
- Precinct 2: Kalakaua Makai [WKP033] (\$0.1333/\$1,000 assessed value)
- Precinct 3: Greater Waikiki [WKP025] (\$0.1000/\$1,000 assessed value)

⁶⁵ Bonds have not and are not intended to be used as a finance instrument for the WBIDA.

⁶⁶ Reasons for oppositions cited in the testimonies may be summarized as:

1. Special funds have a strong history of mismanagement.
2. Citation of Section 37-52.3, HRS, which requires a special fund to meet the following criteria:
 - a. serve a need as demonstrated by the purpose, scope of work and an explanation why the program cannot be implemented successfully under the general fund appropriation process;
 - b. reflect a clear nexus between the benefits sought and charges made upon the users or beneficiaries or a clear link between the program and the sources of revenue;
 - c. provide an appropriate means of financing for the program or activity; and
 - d. demonstrate the capacity to be financially self-sustaining.

As it pertains to HR447, testimonies called upon d), not self sustaining, due to the uncertainty of revenue generated from the new user fee.

3. Business owners felt targeted: Molokini Commercial Permit holders already pay many fees: 3% gross receipts go to DLNR and 4% to GET. A \$5 special fund user fee on a \$100 ticket (5%) would increase their portion of revenue going to taxes and fees to 12%.
4. The bill was premature and not comprehensive. Specifically, it did not address a much needed long term mooring management plan for Maui as a whole. Moreover, a consortium of companies is currently developing a long-term management plan. Lastly, the majority of testimonies commented that \$1,360,000 was a highly inflated request. Molokini does not need 5 full time management staff given that visitors are only on the crater a few hours each day.

Property owners within the district pay taxes based on the assessed value of their property. The WBSIDA serves as a "public-private partnership funding mechanisms" to manage those revenues. WBSIDA estimates total revenues for FY18-19 to be \$916,238 (WBSIDA, 2018). The City and County administers the tax assessment as part of the semi-annual property tax assessment. This comes through as an additional line item on the assessment for Waikiki district commercial properties only. The funds are transferred to the WBSIDA twice a year and the WBSIDA Board reviews and votes on projects to expend funds on. The establishing ordinance for the WBSIDA only specifies the district boundaries; the district management plan outlines projects that may be pursued. All projects require additional approval by the WBSIDA board on an annual basis (WBSIDA, 2019).

HB447 Molokini User Fee

On January 22nd, 2019 Representatives Yamane, McKelvey, Cullen, Wildberger, Decoite, Woodson, and Lowen sponsored HB447, "Relating to Aquatic Resources." Section 1 of the bill proposed an un-specified Molokini user fee that would be assessed by any commercial operator who conducts dive tours, charters, or other activities within the Molokini shoal. There was no proposed amount for the fee, but Section 1 would permit each operator to retain \$1/user fee to compensate for the administrative costs of collecting the fee. The funds collected through this fee would have been deposited into the Molokini Special Fund within the state treasury. Sections 2 and 3 of the bill additionally requested \$1,360,000 from the general fund (via DLNR) for the upcoming fiscal year; this funding would have supported salaries for eight full time employees to manage Molokini resources and for new moorings. The bill was deferred 3 days later, after roughly 107 of the 110 testimonies, strongly opposed it.⁶⁶ The majority of testimonies cited a strong history of mismanagement of special funds as a key source of opposition. Importantly, residents are not the only ones who distrust government special funds. Hawai'i Wildlife Fund organized a Willingness to Pay survey with passengers onboard tour vessels to Molokini. Participants

largely supported a fee; however, those surveyed participants did not want those funds managed by the government. They preferred a non-profit to manage them (Testimony of Bernard, Hannah, 2019). Even DLNR Board Chair, Peter Young, concurred DLNR should not be the entity that manages such a fund.

2C | FUNDING CRITERIA, MEASURABILITY, AND GOVERNANCE

In addition to developing the legal and management structure, for funding to be protected for conservation uses, criteria must be established to determine what projects and programs the green fee revenue can fund. One option is to use the existing Aloha+ Challenge sustainability targets and associated state dashboard to guide the green tourism fund design and prioritization. The Aloha+ Targets establish clear statewide priorities, which individual projects can be evaluated against (i.e., will a project contribute to achieving the target). The Aloha+ state dashboard offers a coherent, open data platform to measure impact of funded projects.

PROJECT CRITERIA AND MEASURING IMPACT

The Aloha+ Dashboard is an electronic, real-time metric system used to track progress towards the Aloha+ Challenge Targets. Residing on the Hawai'i government website, this dashboard was developed in 2017 by the non-profit collaborative, Hawai'i Green Growth, which has also established Hawai'i as a UN Local 2030 Hub for achieving the global Sustainable Development Goals. The green tourism fund could focus solely on funding projects that aid the State in meeting the Natural Resource Management Aloha+ Challenge Targets. Additionally, the Aloha+ Dashboard platform could provide an open, transparent system for measuring the impact of funded project. This would save both time and money launching and administering the funding.

While the Aloha+ Dashboard provides a sound template for a metric system and criteria rubric, it is just one framework option. Since the Aloha+ Dashboard relies on a government website and is a government initiative, it is vulnerable to modification through changes in political priorities and legislative activity. The Dashboard provides an open data platform, rather than a standardized data metric. Tracking and demonstrating the impact of green tourism fund expenditures would likely require additional data tracking and site capability. Lastly, the Aloha+ Challenge intentionally avoids financial capacity as a metric for progress; resultantly, there is little understanding as to what it would cost to achieve the Aloha + Targets. A cost analysis of the Aloha+ Targets, specifically the Natural Resources Management Target, would be an ideal precursor to establishing a green fee fund. A deeper economic understanding of the cost to achieve Aloha+ would make for a more robust 10-year plan for the use of funds.

Aloha + Challenge

Launched in 2014 as a local, intersectional collaborative and later folded under the auspice of the United Nations Sustainable Development Goals, the Aloha + Challenge is a statewide leadership commitment to a more sustainable,

resilient, and prosperous Hawai'i through six sustainability targets by 2030:

- 1) **Clean Energy:** 70% clean energy by 2030, 40% of which is from renewables and 30% from efficiency; associated goal of 100% renewable energy by 2045;
- 2) **Local Food:** double local food production so that 20-30% of food consumed is grown locally;
- 3) **Natural Resource Management: increase freshwater security, watershed protection, community based marine management, native species restoration, and invasive species control**
- 4) **Solid Waste Reduction:** a 70% decrease in the solid waste stream prior to disposal
- 5) **Smart Sustainable Communities:** increasing resiliency, affordability, and livability in the built environment
- 6) **Green Workforce & Education:** reducing unemployment through green jobs and accessibly 'āina based education (United Nations, 2016)

As it relates to the green fee, one proposal is that the third Aloha + Target, Natural Resource Management, could be the yardstick for increasing conservation capacity. Covering freshwater, marine, and terrestrial resources, this Aloha+ Target includes seven sub-targets:

3a. **Recharge:** 30+ million gallons per day by 2030

3b. **Reuse:** 30+ million gallons per day by 2030

3c. **Conserve:** 40+ million gallons per day by 2030

3d. **Watersheds:** 30% of priority watersheds protected by 2030

3e. **Marine Areas:** 30% of marine waters under effective marine management

3f. **Biosecurity:** implement Hawai'i's Biosecurity Plan by 2030

3g. **Native Species:** increase % of Hawai'i's native species under management

Recharge: Mechanisms for recharge include increasing upland forest cover and green space. Recharge rates are notoriously hard to quantify and model. Hydrologists and economists are currently developing metrics and models to sufficiently monitor and implement this target (Aloha + Dashboard, 2019).

Reuse: Currently, 16.4% of wastewater treated at wastewater treatment plants is being reused. The vast majority is dumped into the ocean. With the cost to treat and reuse wastewater being more than twice the cost to produce potable water, increasing reused water supplies is an economic goal. To achieve this target, the various thresholds of treatment need to match their destination uses and barriers to recapture must be reduced (Aloha + Dashboard, 2019).

Conserve: Within the goal to conserve 40+ million gallons per day (mgd) by 2030, agriculture water use efficiency is sought to be improved by 15% by 2030. Further conservation goals can be met through cost effective

savings of residential water use (Aloha + Dashboard, 2019).

Watersheds: In 2011, only 10% of priority watersheds were under protection. As of 2018, almost 20% had reached high level protection. Protection includes: fencing upland forests from hooved and non-native animals, removing invasive plants, who are estimated to have reduced groundwater recharge by 85 million gallons per day (130 Olympic sized swimming pools per day), increasing hunting of invasive species, and increasing forest fire management capacity (Aloha + Dashboard, 2019).

Marine Areas: As of January 2018, 6% of Hawai'i's waters were under effective management. Meanwhile the International Union for the Conservation of Nature's World Parks Congress Report scientists recommend a minimum 30% of the world's oceans be designated as marine parks.⁶⁷ In response, Governor Ige announced the bold 2016 IUCN Legacy Commitment to effectively manage 30% of Hawai'i's nearshore waters by 2030. In order to achieve this a combination of policies and management styles must be utilized, including: community-based management, increased monitoring of current laws, new laws encouraging sustainable fishing practices, time and area closures, and effective enforcement (Aloha + Dashboard, 2019).

Hawai'i's Biosecurity Plan: Hawai'i's Biosecurity Plan includes 150 action items for invasive species control. As of mid-2018, 50% of these action items have been implemented. Damage from Miconia, one of Hawai'i's most notorious invasive species, are estimated at \$672 million annually. Invasive species harm Hawai'i's coral reefs, native plants, freshwater capacities, agricultural productivity, and cultural resources. A few examples of the multifaceted biosecurity plan are: legislative actions and increased pre- and post-border security (Aloha + Dashboard, 2019).

Native Species: Of Hawai'i's federally listed endangered native species, only 5.5% are managed. This low percentage is due to the funding nature of the federal government, which only funds species management after the species has reached a certain threatened threshold. Thus, it is necessary to increase funding for non-federally listed native species, both common and endangered (State of Hawaii , 2019).

Lastly, the 50+ public sector, nonprofit, and private-sector partners of the Aloha + Challenge⁶⁸ could be drawn from as potential members for a green fee fund council.

⁶⁷ Approximately 3.4% of marine waters globally are under protection (TARGET: Increase Marine Management in Hawai'i, 2019).

⁶⁸ Aloha + Government Partners: 1. State of Hawai'i 2. City & County of Honolulu 3. County of Hawai'i 4. County of Kaua'i 5. County of Maui 6. Hawai'i Department of Agriculture 7. Hawai'i Department of Health 8. Hawai'i Department of Labor & Industrial Relations 9. Hawai'i Department of Land & Natural Resources 10. Hawai'i Environmental Council 11. Hawai'i Invasive Species Council (HISC) 12. Hawai'i Office of Planning (OP) 13. Hawai'i State Legislature 14. NOAA Pacific Services Center 15. NOAA Papahānaumokuākea Marine National Monument (PMNM) 16. Office of Hawaiian Affairs (OHA) 17. State Energy Office 18. University of Hawai'i (UH) 19. UH Sea Grant 20. US Department of State 21. US National Invasive Species Council (NISC) Aloha + Non-Government & Community Organizations: 22. Hawai'i Green Growth (HGG) - Coordinator 23. Agricultural Leadership Foundation of Hawai'i 24. Blue Planet Foundation 25. Coordinating Group on Alien Pest Species 26. Enterprise Honolulu 27. Global Island Partnership (GLISPA) 28. Harold K.L. Castle Foundation 29. Hau'oli Mau Loa Foundation 30. Hawai'i Conservation Alliance 31. Hawai'i Community Foundation 32. Hawai'i Energy Policy Forum 33. Hawai'i Presidential Center 34. Hawai'i Fish Trust, Conservation International 35. Kamehameha Schools 36. Kanu Hawai'i 37. Kaua'i Action & Planning Alliance 38. Kōkua Hawai'i Foundation 39. Kupu Hawai'i 40. Mālama Hawai'i 41. Mālama Learning Center 42. Mālama Maunaloa 43. National Tropical Botanical Garden 44. Pacific Islands Climate Change Cooperative 45. Polynesian Voyaging Society 46. Sierra Club Hawai'i 47. Slow Food Hawai'i 48. Sustain Hawai'i 49. Tri-Isle Resource Conservation & Development 50. The Nature Conservancy of Hawai'i 51. World Conservation Congress 2016 - Hawai'i Committee Business 52. Accord 3.0 Consultants 53. Hawaiian Electric Company 54. Kyo-ya/Starwood Hotels 55. Sustainability Partners, Inc. 56. Susty Pacific, LLC 57. Town Restaurant 58. Pineapple Tweed Public Relations & Marketing

APPENDIX 1 | CONSERVATION BUDGET DEFICIT REPORT

Conservation International performed a rapid assessment of current conservation funds versus current conservation needs in Hawai'i to approximate the state's conservation budget deficit (Fitzpatrick, 2018). The accountant disaggregated "conservation" into terrestrial, freshwater and marine, and marine categories. This working definition of conservation broadly crosswalks with the Aloha+ Natural Resource Management Target (NRM), which encompasses specific sub-goals to increase: freshwater security, watershed protection, community-based marine management, native species restoration, and invasive species control (State of Hawaii, 2019).

Quantifying Current Conservation Funds: Federal, state, county, private, and philanthropic funding for each conservation category (terrestrial, freshwater and marine, marine) were summed to calculate total funding for "conservation" in Hawai'i. These funding results were aggregated from annual operational budgets for FY 2003 to FY 2018, Aloha + Challenge budget monitoring, key informant interviews, and secondary data sets on natural resource management funding flows by Dr. Kimberley Burnett at UHERO (Fitzpatrick, 2018).

Quantifying Conservation Funding Needs: Estimating the cost of protecting biodiversity and ecosystems at a state scale is very challenging. In the absence of an 'agreed-upon methodology' nor a reference scenario against which the conservation requirement is measured, a more comprehensive conservation deficit model would seek to stipulate how much biodiversity – i.e how many distinct ecosystems and species – should the state be protecting. The data for conservation needs were compiled from the assessment of executive budgets versus actual state appropriation of funds allocated per acre, the collation of existing estimates, i.e Rain Follows the Forest; 30 by 30 Watershed Plan, 30 by 30 Near Shore Plan; 2017-2027 Biosecurity Plan and comparable estimates accrued from comparable geographies with premier marine protected areas (MPAs) and terrestrial conservation programming efforts, namely Palua, New Zealand, and Ecuador. For community based organizations, conservative estimates are deduced from UHERO's 2016 analysis of 17 natural resource management organizations' annual budget with an assumed 40% deficit- informed by key informant interviews with agency level experts (Fitzpatrick, 2018).

Working spreadsheets available upon request.

APPENDIX 2 | ADDITIONAL VISITOR GREEN FEE PROGRAMS

The following are descriptions of the remaining green fee programs represented in Table 1, which were not discussed in the main text.

BRITISH VIRGIN ISLANDS

On September 1, 2017, the British Virgin Islands (BVI) implemented a \$10 Environmental and Tourism Levy to fund activities in accordance with the Environmental Protection and Tourism Improvement Fund Act of 2017. These funds can be used to minimize impacts from climate change and maintain tourism sites (British Virgin Islands Tourism, 2019).

Exemptions from the fee include: (1) Residents & Belongers, (2) non-residents two years or under, (3) Officers of the Eastern Caribbean Supreme Court, (4) Guests of the Government, (5) Official representatives of Governments of any country/territory, (6) Persons granted diplomatic privileges, and (7) Persons exempted by the Minister.

This fee was instituted on top of BVI's \$20 departure tax, which is included in the airline ticket (Myers, 2017). Unlike the departure tax, the Environmental and Tourism Levy is paid upon arrival at ports of entry, and is required of both air arrivals and cruise ship passengers (British Virgin Islands Tourism, 2019).

MALDIVES

The Maldivian economy is exceptionally sensitive to tourism shocks. Tourism's share in the Maldivian economy is twice what it is in Hawai'i, accounting for 38% of the nation's GDP (McAleer, Shareef, & da Veiga, 2005). The small nation chronically suffers from budget deficits, and has been criticized for enacting a new tax nearly every year to solve its deficit (Maldives Times, 2017).

In 2015, the country implemented a Green Tax. This \$6 tax is assessed per day at resorts and hotels. Over the past few years, guesthouses have been exempt from this fee, subject to this fee, and subject to a smaller fee of \$3 to reflect the lower value nature of the guesthouse accommodation. The debate over how to include guesthouses in the tax structure continues to be contentious. According to Maldives Island Revenue Authority, the progressive green tax structure (\$6; \$3) has been in place since October, 2016 and continues to be for the 2019 year.

At this point, it remains unclear to what extent the Green Tax is used to fund green programs.

BHUTAN

The small landlocked Kingdom of Bhutan in Southeast Asia charges visitors \$200 - \$250 per day, depending on the season. This daily fee includes all accommodations, meals, licensed Bhutanese tour guides, internal transportation, internal taxes, and camping equipment. Of this daily experience fee, \$65 accounts for the Sustainable Tourism Royalty. The revenue from the Sustainable Tourism portion of the tourist tariff funds free education and health care, poverty alleviation projects, and infrastructure maintenance and development, all aligning with Bhutan's broad mission and metric of gross domestic happiness (Khamrang, 2013).

Since the 70's Bhutan has embraced a high value - low volume sustainable tourism growth model (Rinzin, Vermeulen, & Glasbergen, 2007). Prior to 1997, a US\$200 per day was charged to the "cultural tourist" and \$120 for the trekking tourist. Since 1997 the tourist tariff has been fixed regardless of the type of traveler, but varies with seasonality.

While not strictly an environmental fee, this tourism-based finance system provides a valuable framework and exemplar transparency.

RIVIERA MAYA, MEXICO

On October 1, 2017 the region of Riviera Maya established an Eco Tax "to help maintain the beaches and ecosystems in Riviera Maya" (Rosen, 2017). This small fee was progressively eased in, starting as 10mp per room per night for the first three months before ramping up to 20 mp per room per night on January 1, 2018. These nightly hotel fees are assessed by hotels and deposited into an environmental trust fund.

The Riviera Maya is to Cancun what the Jersey Shore is to Atlantic City (Walton, 2016). The separate jurisdictions have different green fee mechanisms and are hence discussed separately.

CANCUN AND PUERTO MORELOS, MEXICO

On January 1 and March 1 of this year, Puerto Morelos and Cancun/Benito Juarez, respectively, instituted “Environmental Sanitation Fees.” The fees are assessed at all hotels and resorts in these two cities. The fee structure is \$1.27 per suite night and \$2.54 per villa night. The revenues are used for beach cleaning, water treatment, waste collection, LED lighting, reef conservation, wetland management, reforestation programs, other sustainability programs (Royal Resorts, 2019). The implementation of these pair fee systems was due to concern that visitor numbers were outpacing the development of public services, especially pertaining to water and waste treatment.

Cancun’s Environmental Sanitation Fee Program was launched April 2019, and no formal visitor perception survey has been performed yet. However, in anticipation of poor perception, the leaders behind the fee are building campaigns to demonstrate the transparency of project funding to visitors who pay the fee. In light of the concerns surrounding transparency, a civic council was formed to oversee the fund. The council is comprised of five members including the President of the Hotel Association, academics from the local university, a local NGO manager, and a legal expert on legislation. This balance of private management over a government fund provides security for the hotel industry who markets the use of the fee to their visitors (Ferryera, 2019).

BALI, INDONESIA

The small island of Bali, Indonesia’s most visited island, hosted 5.7 million visitors in 2017. These visitor arrival numbers have increased fivefold since 2001, placing substantial strain on the environment (Coca, 2019). For example, more than 1,700 acres of land are developed each year on the island.

At the beginning of this year, the Balinese government announced its draft bylaw to impose a US\$10 levy on international visitors to fund cultural and environmental projects. Bali has suffered from mass plastic pollution, such that only an estimated 60% of trash is properly disposed of in landfills. In addition to the anticipated tourism levy, Gubernatorial Regulation No. 97/2018 banned single-use plastics. This bylaw is only a piece of the island’s sustainability puzzle. The estimated USD\$67 million in green fee revenue (Koster, 2018) is proposed to fund the initiatives needed to forge a path towards environmental and economic sustainability, such as waste infrastructure. The fund will operate under the Bali Conservation Fund framework (Dewantama, 2019).

The Balinese green fee does not yet have an official name, nor have the details of assessment been publicly revealed. Back in 2013, the Governor of Bali attempted to issue a government regulation for the Bali Nature and Culture Heritage Conservation Program, which would have provided a legal basis for a US\$10 “landing fee” from foreign visitors. However, it was not implemented for two reasons: unclear management and national legal obstacles⁶⁹ (Dewantama, 2019). In 2014, with the support of various organizations including Conservation International and Palau’s PAN Fund, the island of Bali conducted the Bali Conservation Fund Workshop and developed a BCF roadmap by 2015. This work-shopping eventually birthed the Bali Nature and Culture Conservation Foundation (BNCCF), which has mainly been funded by Bali MPA Network Program, Karangasem MPA Development, and Badung MPA Development. Since coming to office in October, 2018, the new governor of Bali is working to issue the Bali Regulation that will allow the legal foundation to pursue the fee, which has been a goal for six years (Dewantama, 2019).

EL NIDO, PHILIPPINES

The municipality of El Nido in the Philippines requires an Eco-Tourism Development Fee (ETDF) of US\$3.86 (valid for 10 days) or US\$9.65 (more than 10 days). This entrance fee is collected by the visitors’ booking office or tour guide and then transferred to the municipality. The ETDF is one of the older green tourist finance mechanisms, having been established in 2008 (El Nido Paradise, 2015). Unfortunately, the fee is not substantial enough to offset the impact of tourism on the region’s environment. The fee collects an estimated 3million PHP, while an estimated 10million PHP is needed.

Of that 3 million PHP:

⁶⁹ Specifically, violating National Act Number 28

- 50% is allocated to environment and tourism related projects
- 10% barangay eco-tourism projects
- 10% Protected Area Management Board
- 10% general fund of Municipal Government
- 20% implementation costs

MENTAWAIS SURFER TAX

The Mentawai islands in Indonesia host some of the most premier surf spots in the world. Despite the influx of tourists, surf tourism does not contribute much to the islands' economy. "We only get the name, garbage and environmental damage," explains Mentawai Islands Deputy Regent Rijel Samaloisa (Keith, 2016).

In 2016, the Mentawai regency enacted a US\$77 Surf Tax, valid for fifteen days. Surfers are required to wear a bracelet in the water to show they have paid. Enforcing over 70 surf spots accessed by land-based resorts and boats is a costly endeavor. In addition to the high administrative costs, opposition of the fee stems from a mistrust in how the government will allocate and administer the revenue. The consensus from surf tourists is one of support, if the fee is recycled back to local people and their infrastructure (Townsend, 2015).

There was a previous surf related tax in 2012 that was revoked because the Regent and Tourism Office executives were imprisoned for corruption, which helps explain the underlying unease around this new tax (Townsend, 2015). At this time, a source explicitly stating the revenue uses of this fee is not available. Thus, it is unclear whether the Mentawais Surfer Tax can truly be considered a "green" fee.

BALEARIC ISLANDS, SPAIN

In 2016, Spain's Balearic Islands instituted a "Sustainable Tourism Tax," also referred to as "Eco Tax." This eco tax is assessed at accommodations and varies depending on the luxury level of the accommodation: 2 euros at 5 and 4 star hotels, 1.5 euros at 4 and 3 star hotels, and 1 euro at 1, 2, and 3 star hotels. Exemptions include children under 16 years old. Similarly, the fee is discounted by 50% in the off season. The revenue is exclusively used to fund the Sustainable Tourism Impulse Fund, operated by the Ministry of Finance and Public Administration. This fund supports over 156 projects and is apportioned by island: Mallorca 73.2%, Ibiza 15.3%, Menorca 8.3%, and Formentera 1.3%. US\$266M has been collected since enactment in 2016 (Erlich, 2019).

It remains unclear to what extent locals have seen a positive impact from the Sustainable Tourism Tax's fund and their perception of the financing program. Despite this new fee, local anti-tourism groups on the Balearic Islands remain angry. One of the more prominent groups, Ciutat, explains that the rising human impact continues to cause an "extreme environmental crisis" (Florio, 2018).

VENICE, ITALY

More recently, Venice, Italy has joined the growing list of destinations with green fees. On May 1, 2019 the city established a tourist tax for day-trippers that ranges from US\$2.84 to US\$11.25 depending on the season. The pressure of visitors on Venice is arguably more pronounced than anywhere else in the world, with tourists outmatching residents 600 to 1 (Small, 2019). Around half of Venice's annual visitors spend only one day in Venice, meaning their revenue is not captured by the seven-year-old nightly tourist tax (Travel&Lesuire, 2019). This new day-tripper tax could increase revenue for the city by \$56.8 million and is intended to fund city cleanliness and visitor resources. The fine for attempting to avoid the city entrance fee is US\$511 (Small, 2019).

APPENDIX 3 | DOMESTIC LEGAL CONSIDERATIONS

LEGAL CONSIDERATIONS FOR GREEN FEES IN THE UNITED STATES

Three constitutional provisions and one known federal statute that affect how states may pursue implementing visitor-only green fees or assessing fees at airports. The three provisions of the U.S. Constitution are:

- the Privileges and Immunities Clause, Article IV, Section 2, Clause 1;
- the Dormant Commerce Clause, Article I, Section 8, Clause 3, and;
- the Equal Protection Clause of the 14th Amendment.

The relevant federal statute is the Anti-Head Tax Act, 49 U.S. Code §40116.

PRIVILEGES AND IMMUNITIES CLAUSE, ARTICLE IV, SECTION 2, CLAUSE 1, UNITED STATES CONSTITUTION

According to a legal analysis performed by Covington & Burling LLP for The Nature Conservancy, “a direct tax on non-residents would be highly vulnerable to challenge under the United States Constitution” (Covington & Burling, 2018). The Privileges and Immunities Clause, also known as The Comity Clause, poses the most significant impediment to a mandatory green fee that would apply to residents of other states but not residents of Hawai‘i. (Covington & Burling, 2018).

The Privileges and Immunities Clause states: “The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States” (U.S. Constitution, Article IV, Section 2, Clause 1). While the U.S. Constitution does not explicitly define these privileges and immunities as including the right to interstate travel, it has been interpreted as such, including in the seminal case *Corfield v. Coryell* (1823): “the right of a citizen of one state to pass through, or to reside in any other state, for purposes of trade agriculture, professional pursuits, or otherwise.” (*Corfield v. Coryell*, 6 F. Cas. 546 (C.C.E.D. Pa. 1823)). Since 1823, the definition of the “right to travel” has been refined. In *Saenz v. Roe*, the Supreme Court held that the right to travel included, “the right to be treated as a welcome visitor” (*Saenz v. Roe*, 526 U.S. 489, 500 (1999)).

A green fee in Hawai‘i would have to be established in such a way as to not violate the Privileges and Immunities Clause of the U.S. Constitution, including the right to travel, the right to seek opportunities for employment, and the right to be treated as a “welcome visitor”(Covington & Burling, 2018).

Examples of laws that violated the Privileges and Immunities Clause include:

A tax on commuter income of nonresidents working in New Hampshire (*Austin v. New Hampshire*, 1975).

A property tax credit only for resident owned farms (*Borden v. Selden*, 1966) (Michael, 2018).

THE DORMANT COMMERCE CLAUSE, ARTICLE I, SECTION 8, CLAUSE 3, UNITED STATES CONSTITUTION

The Commerce Clause has a long and fascinating history regarding wheat quotas, healthcare, and the civil rights movement (RadioLab, 2018). The Commerce Clause grants the U.S. Congress the power, “To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes” (U.S. Constitution, Article I, Section 8, Clause 3). By negative inference, the “Dormant” Commerce Clause doctrine restricts the states from taking any regulatory action that would discriminate against interstate commerce.

As it relates to non-resident green fees, this doctrine requires that a state tax, “is applied to an activity with a substantial nexus with the taxing State, is fairly apportioned, does not discriminate against interstate commerce, and is fairly related to the services provided by the State.” (*Complete Auto Transit, Inc. v. Brady*, (430 U.S. 274, 279 (1977)).

Of these conditions, the second—*does not discriminate interstate commerce*—is of most concern to the green fee initiative. A green fee for non-residents could be considered facial discrimination and courts could consider it to be invalid as *simple economic protectionism* (Covington & Burling, 2018). Relevant examples

include:

The deemed unconstitutionality of a Maine law that attempted to deny a property tax exemption to a charitable group that served largely nonresidents (*Newfound Owatonna, Inc. v Town of Harrison*) (Michael, 2018).

EQUAL PROTECTION CLAUSE, 14TH AMENDMENT, U.S. CONSTITUTION

The Equal Protection Clause of the 14th Amendment prohibits states from denying any person “equal protection of the law” (Equal Protection Clause, U.S. Constitution, 14th Amendment). Since residency is a type of suspect classification, differential treatment of non-residents from residents in tax law must be rationally related to the state’s objective (Michael, 2018). While this sounds fairly open, the historical decisions made by the Supreme Court seem wary of differential treatment.

In *Zobel v Williams* the court ruled against an Alaskan law that attempted to provide rebates to residents based on how long they had lived in Alaska (475 U.S. 55 (1982)) (Michael, 2018).

In *Metropolitan Life Insurance Co v Ward* the court ruled that Alabama could not tax out of state insurance companies at a higher rate than in state ones (470 U.S. 869 (1985)) (Michael, 2018).

In *WHYY Inc v Borough of Glassboro* the court overturned a law that attempted to deny a property tax exemption to an out of state charity (393 U.S. 117 (1968)) (Michael, 2018).

Additional legal research needs to be completed on how the Equals Protection Clause would affect a visitor green fee.

ANTI-HEAD TAX ACT, 49 U.S. CODE §40116

In general, The Anti-Head Tax prohibits assessing any “tax, fee, head charge, or other charge on—(1) an individual traveling in air commerce; (2) the transportation of an individual traveling in air commerce; (3) the sale of air transportation; or (4) the gross receipts from that air commerce or transportation” (49 U.S. Code § 40116(b)), unless - that tax or fee qualifies as a “reasonable rental charge,” “landing fee,” or “other service charge” related to the use of the “facilities of an airport owned or operated by that State or subdivision” (49 U.S.C. § 40116(e)) (Covington & Burling, 2018). It would be challenging to demonstrate that a fee for conservation projects had a clear nexus to services being provided to airline passengers at their point of entry (Covington & Burling, 2018).

APPENDIX 4 | CARBON PRICING

CARBON PRICING THEORY & LINKAGE

There are three macro level mechanisms for carbon reduction: command and control, carbon taxation, and cap and trade.

“Command and control” is the terminology used for government regulation. Command and control policies aimed to reduce emissions typically include: technology standards and performance standards (C2ES, 2018). The Aloha+ RPS is an example of command and control. These standards are beneficial because they make a political statement, but are costly to enforce and are criticized for not incentivizing emitters to go beyond the standard. Similarly, they do not account for different marginal costs of abatement; for example, it is cheaper for some producers to abate more than others (C2es, 2015). Command and control is generally understood as inefficient and a culprit of dead weight lost. When pollutants are harmful to human health and localized, command and control may be the safest option. However, carbon does not localize, but rather mixes into the global atmosphere resulting in international social costs. Market based approaches alternatively can generate tremendous amounts of revenue and provide financial incentive for R&D.

Cap and trade systems and carbon taxes are both market-based approaches. The goal of both is to internalize externalities otherwise unaccounted for by the market. In economics, an externality is a by-product of the consumption or production of a good experienced by a third party. Typically, that third party is the public, which means the market cost does not represent the true social cost (or benefit). The goal of market based carbon policies is to correct this type of market failure by pricing carbon at its “true” cost because currently, the prices of carbon intensive goods do not represent carbon’s high negative cost to society and the planet.

Economists often prefer cap and trade systems to carbon taxes because they cause less market distortion (Field and Field, 2012). Environmentalists have criticized them for being “permits to pollute.” The counterargument is that a cap and trade incentivizes business to reduce below what a tax would because the business can profit off abatement by selling permits. Moreover, cap and trade provides opportunity for global carbon market linkage (Field and Field, 2012).

CARBON MARKET LINKAGE

Linkage means that allowances and offsets issued by another jurisdiction are valid in all participating parties’ markets. On January 1st, 2014, California linked its cap and trade program with Quebec (ISOR). In January 2018, Ontario effectively joined the agreement, but subsequently withdrew after a newly elected political government cancelled the program. Linkage allows complying businesses to use allowances issued from any of the governments and trade in any of the locations. This opens the market and increases liquidity, making it is easier for businesses to find trading partners (Morehouse, 2016). Moreover, by sharing auctions, linkage decreases administrative costs for the governments involved. Joint markets should also decrease market distortion and compliance costs even more efficiently, encouraging those with lowest marginal abatement costs to reduce first. Beyond economic reasons, joint markets make a strong political statement, especially in a time of inaction from the U.S. federal government.

The World Bank is working to establish an international carbon asset reserve and international guidelines to increase linkability worldwide. Linkage can liquefy the carbon market and enhance price stability (Ranson and Stavins, 2015), dissolving the economic concerns of climate change prevention. More importantly, linkage can permit economies of scale to come into play, allowing small jurisdictions who could not afford a carbon market in isolation to use market solutions to reduce emissions. Administration costs are the largest burden for small jurisdictions looking to start a carbon market. By linking, partners share the administration costs of auctioning and monitoring (CARB). Lastly, the possibility of accessing a global carbon market should further incentivize jurisdictions to improve their monitoring and enforcement systems to match that of the leading carbon market members. Because California’s cap and trade is far more stringent than any other program, including RGGI’s, the EUs, China’s, or Mexico’s, the lure of linking will incentivize these jurisdictions to improve their programs. While the development of a carbon tax in Hawai’i has grown increasingly popular, cap and trade and possibilities for linkage have been largely left out of the conversation.

APPENDIX 5 | EXISTING POLICY APPROACHES IN HAWAII

TRANSIENT ACCOMMODATION TAX

Some of the bills that have attempted to redirect Transient Accommodation Tax (TAT) revenue towards the environment are discussed below.

SB950 RELATING TO TAT (2013)

In 2013, Senate Bill 950 “Relating to Transient Accommodation Tax” proposed to reallocate portions of the Transient Accommodations Tax (TAT) revenues deposited into the Tourism Special Fund instead to the State Parks Special Fund, Special Land Development Fund, and Conservation and Resources Enforcement Special Fund. Specifically, SB950 would have reallocated 10% of TAT revenues, such that: 8% went to the State Parks Special Fund, 1% to the Special Land & Development Fund, and the remaining 1% to the Conservation and Resources Enforcement Fund. This measure was carried over to the 2014 session where it died when the Senate Ways and Means Committee did not have a hearing.

There were only five testimonies for SB850. Hawaiian Tourism Authority (HTA) strongly opposed it, suggesting the following amendments: 1) 1%, or not to exceed \$400 million of TAT revenue, be spent on preservation and enhancement of natural resources important to the visitor industry; 2) repeal the \$71 million limit on deposits into the Tourism Special Fund. The Tax Foundation of Hawai‘i sided with the visitor industry in their testimony of opposition: *“while proponents of earmarking of the TAT argue that if these projects or programs are not funded, none of the pristine beauty that visitors come to see will be preserved, one could make the argument on the other side. If there are insufficient funds to promote the industry, then visitor counts will drop and so will the income that fuels the state’s economy.”* The Tax Foundation further proposed that the state use general funds for the environment, which benefits the community at large, rather than TAT money, which is intended for uses specific to visitors. While DLNR supported the bill, they cited concern as to the possible adverse effects the reallocation could have on the Tourism Special Fund. Alternatively, the two individual testimonies strongly supported the bill, citing strong indigenous, local support, their concern for critical marine environments, and the need to preserve the ‘āina to keep tourists coming to Hawai‘i (SB950 Testimonies, 2013).

ACT 174 (2014)

In 2014, Act 174 established the State-County Functions Working Group to examine the distribution of responsibilities at the state and county levels in order to establish a model for TAT revenue allocation among the governments.

HB954/SB1123 RELATING TO THE TAT (2015)

In 2015, HB954/SB1123 proposed to amend HRS section 237D-6.5(b)(5) to say that the \$3 million of TAT revenue currently going to the general fund was intended to be allocated to the Special Land and Development Fund of DLNR, provided the monies are expended in accordance with the Hawai‘i Tourism Authority strategic plan. This strategic plan includes operation and maintenance costs of state parks, beaches, and trails and costs associated with improving enforcement of ancillary regulations etc. Despite HTA’s strong support to correct this error, the bill was deferred by the house upon the premise that the State-County Working Group had asked that TAT legislation be withheld until the following session so as not to affect their work.

HB444 RELATING TO BEACH PROTECTION (2015)

Despite the incompleteness of the working group’s work, the legislature passed HB444 Relating to Beach Protection in 2015. The bill became Act 171 and authorized the use of certain TAT revenues for beach restoration and conservation via the Special Land and Development Fund. A study at University of Hawai‘i on the high rate of beach erosion likely catalyzed the success of this bill.

SB 534 RELATING TO THE TAT (2015)

Also in 2015, Senate Bill 534 proposed a number of amendments related to the Transient Accommodations Tax (TAT). Some sections of the bill relative to green fee research include the proposals to:

- Allocate a percentage of TAT revenues to the State Parks Special Fund and to the Special Land and

Development Fund.

- Require TAT revenues deposited into the Special Land and Development Fund to be expended upon mutual agreement of the Board of Land and Natural Resources and the Board of Directors of the Hawai'i Tourism Authority (HTA) in accordance with the Hawai'i Tourism Strategic Plan.
- Transfer a portion of the amounts deposited into the Special Land and Development Fund to the Beach Restoration Special Fund and appropriate those funds as matching funds for the environmental impact statement associated with the planned beach nourishment project at Kapua.
- Require the Department and HTA to seek supplemental funding from the counties, federal government, and private groups to accomplish the purposes of the Act.
- Amend the rate of the TAT to an unspecified amount
- Remove the cap on the counties' share in the TAT but restrict their use of the increased funds, to exclusively market and promote tourism and tourism related events and activities within the county (very controversial)

All committees deferred the bill. The bill failed by trying to kill too many birds with one stone. Counties strongly opposed the last mentioned section, feeling that “exclusively” using funds for marketing and tourist promotion was too restrictive. The financial pressure felt by the counties from tourists go far beyond marketing: *“costs that include safeguarding our beaches, fire department rescue calls, police department responses, park maintenance and improvements, impacts to our roadways, solid waste refuse increases, etc. cannot be classified into what is proposed and narrowly described above as ‘exclusively to market and promote tourism and tourism-related activities and events’...”* (Testimony of Sally Motta, Acting Director of Finance, 2015). The testimony continues: *“who rescues are visitors who are stranded on the north shore? Who cleans the beach parks that visitors enjoy? Who pays for off-duty police officers at the festivals and events that draw visitors to our island? The County of Kauai pays for all of these services!”* A Kauai Council Member adds that 21% of Kauai's population is tourists, implying that restricting TAT money only to promotion will be detrimental to core civil services for tourists as well as locals.

As demonstrated in the countless opposing testimonies, the environmental components of the TAT were not under attack; the long history of county-state revenue relations overrode the value of the environmental components.

STATE-COUNTY FUNCTIONS WORKING GROUP RESULTS (2015)

In 2015, The State-County Functions Working Group (established in 2014 under Act 174) finished examining the distribution of responsibilities at the state and county levels in order to establish a model for TAT revenue allocation among the governments. After considering expenditures for public services by the state and counties, especially ratios of tourism related expenditures, the Working Group concluded the responsibilities were distributed in a 55:45 ratio, state: county (The Auditor, State of Hawai'i and Belt Collins Hawaii LLC, 2015 Dec). The Working Group further recommended that the TAT revenue be allocated as:

- “The Tourism Special Fund (TSF) receive \$82 million in fiscal year (FY) 2015 and FY2016, and amounts changing in line with the Consumer Price Index for Urban Consumers (Honolulu) in subsequent years;
- Existing appropriations for the Convention Center, Turtle Bay, and the Special Land Development Fund, totaling \$31 million, continue at the same level in future years; and
- The remainder of the TAT revenues be allocated to the State and counties, with the State receiving 55% of the remainder, and the counties receiving 45%.” (The Auditor, State of Hawai'i and Belt Collins Hawaii LLC, 2015 Dec)

SB703/SB2446 RELATING TO VISITOR IMPACTS (2017)

More recently, in 2017, SB703 attempted to increase DLNR special fund allocations of the TAT in accordance with visitor arrival numbers. SB703 proposed that if total number of visitors exceeds 9 million or if total number of visitors to any county exceed six million, then 15% of the HTA budget, including any TAT revenue shall be given to natural resource and public infrastructure management. Similarly, an additional 5% of HTA's budget

multiplied by the greater of the following would have applied: 1) the number of increments of 500,000 visitor arrivals in excess of 9.0 million in the State; or 2) the number of increments of 125,000 visitor arrivals in excess of 6.0 million visitor arrivals in any county. The measure lastly capped the maximum amount transferred out of HTA's budget at 45% (S.B.703, 2017) (Testimony of George Szigeti, CEO of HTA, 2017). SB703 was carried into the 2018 legislative session, where it became SB2446, received a public hearing, and eventually died.

The Department of Budget and Finance opposed the measure; rather than automatic transfers, they strongly believed funding should be authorized by the legislature upon due consideration of program requirements. DLNR's director Suzanne Case supported the intent of the measure, but voiced concerns around the predictability of funds based on visitor arrivals. DLNR calculated that once visitor arrivals exceed 10 million, this measure would provide an additional \$6.2million to the department, in addition to the \$3million already received, totally \$9.2 million. Coincidentally, this is about \$1 per current visitor. DLNR alternatively proposes that a direct allocation could provide the same funding accomplishments with more stability in their budget (Testimony of Suzanne Case, Chairperson, 2018). The HTA felt they already do their part by implementing a number of environmentally conscious programs: Aloha 'Āina (Natural Resources) program, Kūkulu Ola, (Hawaiian Culture) program; Ma'ema'e (a guide for travel agent training); Visitor Impact Program; Community Enrichment Program (ecotourism category); Hawai'i Ecotourism Association certification program; Go Hawai'i app; Preventative Programs; Lifeguard program; and Crisis Management program. HTA felt their mission was to lead the State's efforts in ensuring that Hawai'i is and remains a premier visitor destination. Thus, HTA felt there were more appropriate sources of funding for managing the natural resources than their budget. Individual testimonies largely supported the bill, referencing the strain they see on various natural resources and sites. One individual comments, "HTA attracts tourists by showing pictures of native ecosystems and species, but does not do enough to protect those species that increased numbers of tourists plunder" (Testimony of S. Plentovich, 2018).

ENVIRONMENTAL RESPONSE, ENERGY, AND FOOD SECURITY TAX ("BARREL TAX")

Table 6 below illustrates an abbreviated history of Hawai'i's Barrel Tax, as discussed in Chapter 1c.

Table 6. Barrel Tax: History of Revenue Allocation⁷⁰

Barrel Tax: History of Revenue Allocation	2010 – 2013	2013 - 2014	2014 Failed Attempt ⁷¹	2014 – 2030 ⁷²	2015 Attempt ⁷³
For each barrel taxed:					
Green applications	\$0.045	\$0.035 (-.10)	\$1.05 (+.70)	\$0.045	\$1.05 (+.70)
Environmental Response Revolving Fund	\$0.05	\$0.05	\$0.10 (+.05)	\$0.05	\$0.15 (+.10)
Energy Security Special Fund	\$0.15	\$0.15	\$0.425(+.275)	\$0.15	\$0.40(+.25)
Energy Systems Development Special Fund	\$0.10	\$0.00 (-.10)	\$0.10 (+.10)	\$0.10	\$0.10 (+.10)
Agricultural Development & Food Security Fund	\$0.15	\$0.15	\$0.425(+.275)	\$0.15	\$0.40(+.25)
General Fund	\$0.60	\$0.70 (+.10)	\$0.00 (-.70)	\$0.60	\$0.00 (-.60)
For each MMBtu taxed:					2015 - 2030
Green applications:					\$0.09
• Environmental Response Revolving Fund					\$0.01

⁷⁰ This table demonstrates a sampling of prominent attempts at amendments to the Barrel Tax revenue allocation. There have been other amendments proposed beyond what is shown in this table.

⁷¹ SB2196 Relating to Energy originally attempted three amendments: 1) re-establish the Energy Systems Development Special Fund, which was nixed in the 2013 amendments; 2) re-allocate all revenue away from the general fund and into the intended environmental special funds; 3) extend the Barrel Tax through 2030. This bill was amended several times, eventually succeeding in re-establishing the ESDSF, increasing the funds back to pre-2013 allocation amounts, and extending the tax through 2030.

⁷² This was the final amended result of SB2196, known as SB2196_CD1.

⁷³ SB358 Relating to Energy (2015) attempted to increase the amount of the environmental response, energy, and food security tax collections to be deposited into the various special funds, as illustrated in Table 4 above. In addition, this bill attempted to ensure that the tax covered all fossil fuels, not just petroleum.

• Energy Security Special Fund	\$0.03
• Energy Systems Development Special Fund	\$0.02
• Agricultural Development & Food Security Fund	\$0.03
General Fund	\$0.10

CARBON PRICING ATTEMPTS IN HAWAI‘I

Some of the bills that attempted to establish a carbon tax in Hawai‘i are discussed below.

SB1463

This bill proposed to replace the Environmental Response, Energy and Food Security Tax (“Barrel Tax”) with a carbon emissions tax. After two amendments, the bill died in the House Economic Development and Business and Environmental and Energy Protection Committees. In order to replace the Barrel Tax with a carbon pricing tax and remain revenue neutral, SB1463 noted that carbon would have to be priced at a minimum of \$6.25 per ton (The Senate 13th Legislature, 2019). The bill celebrates the fact that the \$6.25/ton carbon tax revenue equates to that of a \$0.0556/gallon gas tax, much less than the current state gasoline tax of 16 cents per gallon. However, Honolulu Climate Change Commission and Director of Institute for Sustainability and Resilience, Makena Coffman and scholars, Michael Bruno and Chip Fletcher, encourage caution over this proposed scheme. While they applaud the key feature of SB1463 to establish an economy wide tax on carbon, they remind proponents that this proposal to establish a carbon tax through lowering fuel taxes would relatively lower motor fuel prices, which is counter to a goal of lowering carbon emissions (Fletcher, 2019). These carbon pricing experts further recommend that the tax be levied on a per-unit-of-carbon-dioxide-equivalent basis, rather than individually setting prices for each type of fossil fuel.⁷⁴ In addition to these structural flaws of SB1463, the proposed price, \$6.25, is insufficient when considering the Social Cost of Carbon was set at \$37/ton back in 2013 under the Obama Administration (Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, 2016). Since then, renowned Stanford economists Moore and Diaz have re-evaluated the social cost of carbon to be between \$70 and \$200 per ton, depending on discount rates and warming scenarios (Diaz & Moore, 2015). Additionally, SB1463 intended to continue allocating \$11.6M into the special funds founded under the Barrel Tax (\$1.29M to the Environmental Response Revolving Fund; \$3.872M to the Energy Security Special Fund; \$2.582M to the Energy Systems Development Special Fund; and \$3.872M to the Agricultural Development and Food Security Fund (The Senate 13th Legislature, 2019). This revenue scheme fails to take into account equity concerns of a carbon pricing scheme and further misses an opportunity to generate more state revenue.

HB1287

HB1287 demonstrated considerable understanding of carbon taxing structures worldwide. The bill proposed a carbon tax on distributors for every ton of carbon dioxide emitted from fossil fuels. With progressive tax schedules, the tax would have started at \$20/ton in 2020 increasing by \$5 each year until plateauing at \$55/ton in 2034. Half of the revenue generated from the tax would have addressed concerns of equity and revenue neutrality by returning revenue to taxpayers. The remaining half would have been evenly split between the Environmental Response Revolving Fund, which finances programs like the removal of hazardous waste, and the Energy Security Special Fund, which funds clean energy developments (HB1287, 2019).

HB1587

Alternatively, HB1587 suggested a \$15/ton carbon tax on fossil fuels. HB1587 proposed to allocate revenue to various state and county environmental initiatives via special funds established in the bill, including the: sustainable farm and soil practices special fund, community renewable energy special fund, electric vehicle

⁷⁴ SB1463 proposed a taxing structure of: Propane: \$0.0360 per gallon; Butane: \$0.0420 per gallon; Butane/propane mix: \$0.0388 per gallon; Home heating and diesel fuel (distillate): \$0.0635 per gallon; Kerosene: \$0.0610 per gallon; Coal (all types): \$13.1301 per short ton; Natural gas: \$0.3320 per thousand cubic feet; Gasoline: \$0.0556 per gallon; Residual heating fuel (businesses only): \$0.0737 per gallon; Jet fuel: \$0.0598 per gallon; Aviation gas: \$0.0522 per gallon; Flared natural gas: \$0.3422 per thousand cubic feet; Petroleum coke: \$0.0919 per gallon; Other petroleum and miscellaneous fuels: \$0.0626 per gallon; Asphalt and road oil: \$0.0747 per gallon; Lubricants: \$0.0670 per gallon; Petrochemical feedstocks: \$0.0701 per gallon; Special naphthas (solvents): \$0.0569 per gallon; Waxes: \$0.0598 per gallon; Anthracite: \$16.1167 per short ton; Bituminous: \$13.9800 per short ton; Subbituminous: \$10.5344 per short ton; Lignite: \$7.9141 per short ton; Coke: \$17.6892 per short ton; Municipal solid waste: \$16.3605 per short ton; Tire-derived fuel: \$17.4633 per short ton; Waste oil: \$2.6195 per barrel; and All other fuels: \$6.25 per ton of carbon dioxide equivalent emissions;

charging station special fund, energy efficiency in state facilities special fund, brownfields cleanup revolving loan fund, green technology development special fund, sea level rise and flooding adaptation special fund, employment and training fund, and the statewide recycling facilities special fund. HB1587 is unique in its proposal to use the carbon tax revenues for more widespread conservation and environmental initiatives, in addition to clean energy investment. This bill provides example of a structure in which carbon pricing revenue could in part benefit the needs of the conservation community, but the vast theme is that revenue is spent on neutrality measures first and low carbon energy investments second.

HB1584

Despite the demise of the carbon pricing bills that were heard in the 2019 legislative session, the fact that carbon pricing was proposed at such scale is a source of optimism. Climate economists in Hawai'i say it is likely that a carbon tax will pass into law in a few years (Coffman M. , 2019). Despite the carbon pricing proposals themselves dying, the legislature did pass HB1584, which appropriates funds to the Office of Planning to conduct a comprehensive study of a state carbon tax. The bill cites the, *"leaders from across the political spectrum, including Nobel prize-winning economists, four former chairs of the United States Federal Reserve, and fifteen former chairs of the United States Council of Economic Advisers, [who] have endorsed a carbon tax as a necessary, market-based solution to our climate change"* as premise to seriously investigate a carbon taxation scheme for the state (HB 1584 HD2 SD1, 2019). The comprehensive study is intended to help policymakers understand the complexities of carbon economics and avoid prioritizing unhelpful proposals in future legislative sessions. The devil is in the details when it comes to carbon pricing schemes; this study is specifically asked to illuminate the harm that a poorly developed carbon tax can have on low income families, demonstrate the potential for dividends when designed correctly, explore the reasoning for graduated increases over time, and understand thresholds for which the price would have to surpass in order to achieve real climate impact.

APPENDIX 6 | GREEN BONDS

GREEN BONDS AS A FINANCE MECHANISM

The \$360M conservation finance deficit in Hawai'i is mirrored around the world. Credit Suisse, WWF, and McKinsey estimate annual conservation spending at around \$50B (Credit Suisse, WWF, McKinsey & Company, 2014), while Environmental Change Institute estimates annual global needs for conservation funding up to \$384.5B (Berry, 2007).⁷⁵ In terms of investment, TNC's NatureVest estimated global conservation investment over the years 2009-2013 at a mere \$23.4B, of which private investments made up a scant \$2B (NatureVest and EKO Asset Management Partners, 2014).

Countless reputable sources cite green bonds as the solution to the overwhelming deficit described above coupled with the dramatically low investment from the private sector (Harvard Business School, 2018). Sources further mark green bonds as the best financing solution for the much larger climate budget deficit (some estimates as high as \$12trillion to meet the 2030 2C threshold). California's Blue Forest bond, TNC's Debt for Nature Swaps, and financial theories behind green bonds are discussed in the follow subsections.

BLUE FOREST BOND

California's Forest Service identified a protocol to reduce wild fire risk in California. California's forests are at immediate risk of detrimental wildfire, but under the Forest Service's budget, their risk reduction plan would take years to implement. In the meantime, wildfires will continue to occur, burdening local communities and utilities with damaged water sources and homes.

In November, 2018 the Blue Forest Conservation launched the Forest Resilience Bond, an innovative program to "fight fire with finance" (Winterson, 2019). The forest bond works like this:

1. Beneficiaries (US Forest Service, local utilities, forest organizations) develop a restoration project
2. Clear metrics for the success of this project are outlined
3. The beneficiaries of a healthy forest sign contracts with the Blue Forest Conservation committing to repay investors over time
4. Blue Forest Conservation packages these contracts into the Forest Resilience Bond
5. Investors (pension funds, insurance companies, mission driven groups/investors) provide upfront capital
6. Implementation partners (USFS and subcontractors) fulfill forest restoration plan
7. Independent evaluators report against the anticipated outcomes established in bullet two
8. Beneficiaries make promised repayments to the FRB, who repays the investors

For an easy video explanation, see [How the Forest Resilience Bond Works](#). For the FRB, Blue Forest Conservation received upfront capital investments from the Rockefeller Foundation, Gordon & Betty Moore Foundation, Calvert Impact Capital, and CSAA Insurance Group.

BLUE BONDS FOR CONSERVATION (DFNS)

Green Bonds are not just restricted to land management and restoration. The Nature Conservancy launched the world's largest "blue bond" initiative for ocean resiliency this year. Their blue bonds will be used to conserve an additional 15% of the world's oceans in just five years. These bonds are different in the sense that TNC is offering to refinance governments' debts in exchange for conservation. This type of green (or blue) financing is referred to as Debt for Nature Swap (DFNS) (Guillame & Thomas, 2017).

In TNC's Blue Bonds for Conservation program, developing coastal nations commit to protect 30% of their near shore ocean areas; in exchange, TNC leverages both public funding and private capital to restructure part of the nation's sovereign debt, resulting in lower interest rates and longer repayment periods (TNC, 2019). A portion of the increased savings for the government's debt restructuring is used to fund the marine protected areas and corresponding management activities.

Back in 2016, TNC piloted this debt conversion model in the Seychelles, where the restructuring of national debt freed up \$430,000 annually for marine conservation. The republic is now more than halfway to

⁷⁵ Including marine PA; \$355.5 for just land.

their 30% protected marine areas goal by 2020.

One might ask, how does debt refinancing benefit all parties? The key is most of the nations participating in this kind of Debt for Nature Swap are lower income, developing countries with higher risk debt portfolios. A typical scenario is as follows: a small amount of debt, for example \$800,000, is exchanged for a natural area to be preserved. The organization (often an NGO) who is performing the debt exchange, buys the debt from the country it is owed to at far less than face value. For example, the NGO purchased the \$800,000 debt for \$200,000. The county to whom this debt was owed often views this as a winning proposition because of time preference and the high risk of the debt never being repaid by the lower income or economically unstable indebted country. This debt, now owned by the NGO, is then traded with the debtor country in exchange for a fund to protect an area of land or marine waters. This nature fund is also worth less than the face value of the original debt. For example a \$400,000 marine fund will be created in exchange for the refinancing of the original \$800,000 debt (Mawson).

Despite the recent rise and trendiness of DFNS, they have existed as a mechanism for a while. Conservation International signed the very first Debt for Nature agreement in 1987. Under that agreement, CI purchased a Bolivian external debt worth \$650,000 for only \$100,000. In response, the Bolivian government invested \$250,000 on the protection of the Beni Biosphere Reserve (Resor, 1996). There is significant controversy around DFNS, especially in countries with unstable inflation. Establishing a fund in a local currency that suffers from variable inflation can impact the longevity of that fund.

In general, DFNS is not applicable to Hawai'i as a developed state, but it is important to understand the different vocabulary and history of DFNS as it pertains to blue/green bonds.

GREEN BONDS: CONCERNS AND RISKS

Concerns with green bonds revolve around time preferences. Investors looking for liquidity are often deterred by the low demand for new issuances, making it hard to quickly enter or exit this market. Such a market often results in investors needing to hold their green bond investment until maturity. Moreover, given they are relatively new financing mechanisms, there is little research to build investment decisions from (Moskowitz, 2018).

Despite the global rise of green bonds, there remains no standard, universal system for recognizing and labeling green bonds status. In fact, green bonds may simply be labeled by the issuer without any formal certification. Harvard Business School analyzed pricing and ownership patterns of the 2,083 green U.S. muni bonds and 19 U.S. corporate bonds issued between 2014 and 2016. They found that green bonds that were publicly registered with the Climate Bonds Initiative (CBI) had premiums two to three times that of self-labeled green bonds (Harvard Business School, 2018).

The Green Bond Principle (GBP) is another governing group similar to CBI that serves to evaluate the integrity of green bonds. Developed by the International Capital Markets Association, many asset managers consider GBP the most well established green bond regulator. However, GBP's guidelines are only voluntary, and the underwrite and issuers still maintain the authority in developing "green" criteria for their bond (Klevan, 2018).

GREEN BONDS AND PUBLIC-PRIVATE PARTNERSHIPS (PPPS)

International Institute for Sustainable Development deems green bonds the most promising new financing mechanism for public-private partnerships (PPPs) (Ordonex. C., 2015). North Island Hospitals Project—Tandem Health Partners was the first green bond issued to finance a public-private partnership in North America. The 32.5 year bond provided \$231.5M for LEED gold certified hospital infrastructure. National Bank Financial was the lead underwriter on this novel PPP green bond.

APPENDIX 7 | VOLUNTARY PROGRAMS

WILLINGNESS TO PAY REPORTS:

While no green fee willingness to pay (WTP) analysis exists specifically for visitors to Hawai'i, many micro WTP analyses can shed light on the ways relevant users value nature. For example, Dr. Kirsten Oleson's WTP discrete choice experiment for beach water quality demonstrates that beach recreationalists in Hawai'i are willing to pay \$30.72 per day at the beach to reduce days with bacterial exceedances from 11 to 5 per year. Similarly, Oleson and Peng's analysis demonstrated a willingness to pay \$35.71 to increase underwater visibility from 15ft to 30ft (Oleson & Peng, 2017).

Studies specific to entrance fees show various results. In the Dalai Lake Protected Area of northeast China, 73.6% of tourists were willing to pay a higher entrance fee (median WTP of \$10.72). The remainder, who were not willing to pay a higher fee, excused their unwillingness on the fact that it is the government's responsibility to protect the environment. Wang and Jia further found that income level and awareness of being in a protected area are the most significant predictors of a person's willingness to pay (Wang & Jia, 2012). A WTP survey specifically of urban tourists in Savannah, Georgia showed a median WTP value of \$2.10 and a mean WTP value of \$11.25 for urban forests. Similar to the study by Wang and Jia, results significantly increased with income, education, and "destination loyalty" (Majumdar, 2011).

OPT OUT BOX:

Behavioral economics illustrate the impressive "opt out" phenomenon of choice architecture. This phenomenon is most commonly heard in association with organ donation. In "opt in" countries such as Australia, where organ donation is a default from which one actively revokes, over 90% of people donate their organs at death. Alternatively, in "opt in" countries, like the U.S. and Germany, where citizens must actively sign up for organ donation, less than 15% of people donate their organs at death (Stanford University, 2012).

REFERENCES

- “Your Voices Matter” Workshop. (2018).
- Aloha + Dashboard. (2019). TARGET: Increase Restoration of Native Species. Retrieved from State of Hawaii: <https://dashboard.hawaii.gov/en/stat/goals/5xhf-begg/4s33-f5iv/a3ea-237y>
- American Carbon Registry. (2019). What We Do. Retrieved from <https://americancarbonregistry.org/how-it-works/what-we-do>
- Berry, P. (2007). Adaptation Options on Natural Ecosystems. A Report to the UNFCCC Secretariat Financial and Technical Support Division . Oxford: Environmental Change Institute.
- Bonham, C. e. (2013). Working Paper No. 13-14R Estimating Demand Elasticities in Non-Stationary Panels: The Case of Hawaii Tourism. University of Hawai`i at Mānoa Department of Economics Working Paper Series .
- Brewbaker, P., Haas, F., & Mak, J. (2019). Charting a new Course for Hawaii Tourism. UHERO .
- British Virgin Islands Tourism. (2019). BVI Tourism. Retrieved from ENVIRONMENTAL AND TOURISM LEVY: <https://www.bvitourism.com/environmental-and-tourism-levy-0>
- Brookings Institute. (2016, July 28). STATE-LEVEL CARBON TAXES: OPTIONS AND OPPORTUNITIES FOR POLICYMAKERS. Brookings Institute: The Climate and Energy Economics Project .
- Bureau of Immigration, MOJ and Bureau of Budget and Planning, MOF. (2018). Visitor Arrivals. Retrieved from Republic of Palau National Government: <https://www.palau.gov.pw/visitor-arrivals/>
- C2ES. (2018). California Cap and Trade. 2018: C2ES.
- C2ES. (n.d.). Carbon Tax Basics. Retrieved from Center for Climate and Energy Solutions : <https://www.c2es.org/content/carbon-tax-basics/>
- California Carbon. (2017, Jul). Regulatory Round-up: California’s cap-and-trade 2.0. Retrieved from California Carbon Info: <https://californiacarbon.info/regulatory-round-up-californias-cap-and-trade-2-0/>
- CARB. (2019, Jun). Compliance Offset Program. Retrieved from California Air Resources Board: <https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>
- CARB. (2019). Report: Cap-and-trade spending doubles to \$1.4 billion in 2018. Release No: 19-15. California Air Resource Board.
- Chao, E. (2015, Sept 4). Kaiser chosen as partner for hospitals. Maui News .
- City and Borough of Juneau. (2019). City and Borough of Juneau. Retrieved from Marine Passenger Fee Program: <https://beta.juneau.org/manager/marine-passenger-fee-program>
- City and County of Denver. (2018). Council Bill No. CB18-0641. Committee of Finance . Denver, CO.
- City and County of Honolulu. Revised Ordinances of Honolulu 1990: Chapter 36 Special Improvement Districts. State of Hawaii.
- Coca, N. (2019). The Toll of Tourism: Can Southeast Asia Save Its Prized Natural Areas? Yale Environment 360 .
- Coffman, M. (2019, May). Conversation on Conservation Finance and Carbon Pricing . (E. vonSaltza, Interviewer) Honolulu, HI.
- Coffman, M., & Wee, S. (2014). Hawai‘i’s Environmental Response, Energy, and Food Security Tax (aka Barrel Tax). UHERO. Honolulu: Economics Research Organization of University of Hawaii.
- Conservation International. (2016). Feasibility of a Non-Commercial Marine Fishing Registry, Permit, or License System in Hawaii: Study Group Final Report. Honolulu: Conservation International .

Covington & Burling, L. (2018). Memorandum: Recommendations for Pursuing “Green Fees” in Hawaii. Covington & Burling LLP for The Nature Conservancy.

Credit Suisse, WWF, McKinsey & Company. (2014). Conservation Finance: Moving beyond donor funding toward an investor-driven approach.

Cummins, J. (2015, Jan 24). How do Municipal Bonds Work? Municipal Bonds .

DAIGNEAU, E. (2013). Massachusetts Uses Popularity of Environmental Stewardship to Pad Its Bottom Line. Governing .

Davis, H. K. (2018). INTERNATIONAL VISITOR CONSERVATION AND TOURISM LEVY. Cabinet Economic Development Committee. Office of the Minister of Tourism.

de Coninck, H. A.-C. (2018). Strengthening and Implementing the Global Response. In V. P.-O.-O. Masson-Delmotte, Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Intergovernmental Panel on Climate Change.

DEM. (2019). Green Economy and Clean Water Bond. State of Rhode Island. Department of Environmental Management.

Department of Taxation. (2018). An Introduction to the General Excise Tax. Department of Taxation. Honolulu: State of Hawaii .

Department of Taxation. (2018). An Introduction to the Transient Accommodations Tax Brochure. State of Hawaii.

Department of Taxation. (2018). Annual State Tax Report 2017-2018. State of Hawaii.

Department of Taxation State of Hawaii. (2016). Annual Report 2015-2016. State of Hawaii.

Dewantama, I. (2019, June 12). Bali’s New Green Fee. (E. v. Saltza, Interviewer)

Diaz, F., & Moore, F. (2015). Temperature impacts on economic growth warrant stringent mitigation policy. *Nature Climate Change* , 5, 127–131.

Division of Forestry and Wildlife. (2019, May 3). Native Ecosystems Protection & Management: Legacy Land Conservation Commission. Retrieved from Hawaii.gov: <https://dlnr.hawaii.gov/ecosystems/llcp/commission/>

DLNR. (2018). REPORT TO THE THIRTIETH LEGISLATURE STATE OF HAWAII 2019 REGULAR SESSION RELATING TO THE LAND CONSERVATION FUND AND THE LEGACY LAND CONSERVATION PROGRAM. State of Hawaii. STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES.

Downing, S. (2018, Dec 7). Juneau loses lawsuit over use of cruise ship fees. *Must Read Alaska* .

duPont, C., Levitt, J., & Blimes, L. (2016). Green Bonds and Land Conservation: The Evolution of a New Financing Too. *Harvard Environmental Economics Progra* .

EITA. (n.d.). Offsets in California’s Cap-and-Trade Program. Retrieved from <https://www.ieta.org/resources/Resources/101s/offsets-in-cas-candt-program-101-mar15.pdf>

El Nido Paradise. (2015). El Nido Paradise. Retrieved from What is El Nido’s Eco-Tourism Development Fee (ETDF)? : <https://www.elnidoparadise.com/el-nido-eco-tourism-development-fee/>

Epler, B. (2007). Tourism, the Economy, Population Growth, and Conservation in Galapagos. Puerto Ayora, Santa Cruz Island: CHARLES DARWIN FOUNDATION.

EPRI. (2013). Exploring the Interaction Between California’s Greenhouse Gas Emissions Cap and Trade Program and Complementary Emissions Reduction Policies. Electric Power Research Institute.

Erlich, N. (2019, Feb). The Balearic Islands increase the collection of the Ecotax in 2018 by 87%. Spain-Holiday .

ETA New Zealand. (2019). eTA New Zealand: Electronic Travel Authority for New Zealand. Retrieved from New Zealand's Tourist Tax Will Be Used to Combat Overtourism

Fargione, J. E., & Basset, S. (2018). Natural Climate Solutions for the United States. 4 (eaat1869).

Ferryera, V. (2019, June 6). Cancun Tourist Fee Interview. (E. v. Saltza, Interviewer)

Fitzpatrick. (2018). Rapid Innovation Sprint. Conservation International.

Florio, E. (2018, Aug). Mallorca: The Spanish Island Telling Tourists to Stay Home. Conde Nast Traveler .

France-Presse, A. (2018). 'Cesspool': Philippines president closes billion-dollar holiday island over raw sewage . The Guardian.

Galapatours. (2018). Galapatours. Retrieved from What is the Galapagos National Park Entrance Fee? : <https://www.galapatours.com/en/faq/what-is-the-galapagos-national-park-entrance-fee>

Georgia Conservancy. (2018). Georgia Outdoor Stewardship Act Dedicated Funding for Conservation. Georgia Conservancy .

Governor of Hawai'i. (2018, April 9). HTA SETS THE RECORD STRAIGHT ON TOURISM FUNDING CUTS PROPOSED BY HB2010 SD2.

Griscom, B. W., Adams, J., & et al. (2017). Natural Climate Solutions. Proceedings of the National Academy of Sciences , 114 (44).

Gross, A., & Rodriguez, C. (2017). Hawai'i Carbon + Natural Capital A Policy + Institutional Analysis for Payment for Ecosystem Services (PES) Approaches in Hawai'i. Honolulu: Conservation International.

Guillame, L., & Thomas, B. (2017). Innovations for Coral Financing. Vertigo Lab , 80.

Harvard Business School. (2018). Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds. Cambridge: Harvard University.

Hawai'i Tourism Authority . (2017). 2017 vsat-companion-tables.xlsx. Retrieved September 13, 2019, from Hawai'i Tourism Authority: VISITOR SATISFACTION AND ACTIVITY: <https://www.hawaii-tourism-authority.org/research/visitor-satisfaction-and-activity/>

Hawai'i Tourism Authority. (2016). Hawai'i Tourism Authority: Five-Year Strategic Plan 2016. Honolulu: Hawai'i Tourism Authority.

Hawaii Car Rentals. (2019). Cheap Cars Rentals for Oahu, Maui, Big Island and Worldwide. Retrieved from Information on mandatory fees, penalties, surcharges & taxes on Hawaii car rentals - charges added to your rental car bill.: <https://www.hawaiicarrentals.net/fees-surcharges-taxes.php#Hawaii-Rental-Motor-Vehicle-Surcharge-Tax>

Hawaii State Auditor. (2019). Auditor's Summary Audit of the Department of Land and Natural Resources' Land Conservation Fund: Report No. 19-01.

Hawaii State Energy Office. (2015). GEMS Program Frequently Asked Questions. DBEDT State of Hawaii.

HB 1584 HD2 SD1 Relating to Carbon Emissions (House of Representatives Thirtieth Legislature State of Hawaii 2019).

HB No. 1287 Relating to a Carbon Tax (State of Hawaii 2019).

Hearing on SB2446 Relating to Visitor Impacts, Before the Senate Committees on Economic Development, Tourism, and Technology and Water and Land and Public Safety, Intergovernmental, and Military Affairs (State of Hawaii Jan 31, 2018).

Hearing on SB703 Relating to Visitor Impact, Hearing before the Senate Committees on Economic Development, Tourism, and Technology and Water and Land and Public Safety, Intergovernmental, and Military Affairs (State of Hawaii Feb 10, 2017).

Hearing on SB703 Relating to Visitor Impacts, Hearing before Senate Committees (State of Hawaii Jan 29, 2018).

Hiltz, A., & Martel, L. (2015). Rental Car Taxes. National Conference of State Legislators , 23 (16).

Ho, B. (2018, June 12). The Regional Greenhouse Gas Initiative Is a Model for the Nation. Natural Resources Defense Council .

Holm, T. (2019, Jun 19). Interview with Tarita Holmes on Palau Pristine Paradise Fee Management Structure. (E. v. Saltza, Interviewer)

HTA. (2019). Tourism Tables xls. Hawaii Tourism Authority .

Interagency Working Group on Social Cost of Greenhouse Gases, United States Government. (2016). Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 . The White House.

Kalapa, L. L. (1997). Erasing An Error of the Past in the Transient Accommodations Tax. Tax Foundation Hawaii .

Kalosh, A. (2018, Dec 7). Judge rules in cruise lines' lawsuit over Juneau fees. Retrieved from Cruise Lines International Association Alaska: News: <http://www.cliaalaska.org/2018/12/judge-rules-in-cruise-lines-lawsuit-over-juneau-fees/>

Kane, W. (2019). New paper: State's cap-and-trade program is falling short of goals. Berkeley, CA: Berkeley News .

Kauffman, J. (2018). What's this 'S.F. Mandates' surcharge doing on my restaurant check? An explainer. San Francisco Chronicle .

Keith, L. (2016, Aug). New tax will mean foreign surfers must pay to ride Mentawai waves in Indonesia. Lonely Planet .

Kesolei, O. (2018). Palau Collects \$100 Pristine Paradise Fee. Pacific Note .

Khamrang, L. (2013). Modernisation, Globalisation and Development in Bhutan: Tourism as a Catalyst. Journal of Management & Public Policy , 5 (1).

Klevan, Y. (2018). Green Bonds' Growing Role in ESG Investing. Lazard Asset Manager.

Kossoy, A. e. (2015). State and Trends of Carbon pricing . Washington, D.C.: World Bank.

Koster, W. (2018). Bali Plans to Impose USD \$10 Levy on Every Foreign Tourist Arrival. Indonesia Investments.

Lam, T. F.-P. (2019). Assessing the Potential for US Utility Green Bonds. Boston University, Institute for Sustainable Energy, Boston.

Leasca, S. (2019). New Zealand's Tourist Tax Will Be Used to Combat Overtourism. Travel + Leisure .

Legal Information Institute. (n.d.). 49 U.S. Code § 40116. State taxation. (C. University, Producer) Retrieved from Legal Information Institute: <https://www.law.cornell.edu/uscode/text/49/40116>

Legislative Analyst's Office. (2017). 17/18 Budget: Cap and Trade . Mac Taylor & LAO.

Lenhart, M. (2019, may 6). Hawaii Weighs Measures to Curb Airbnb. Skift .

Lovell, B. (2019, June 10). Spending Big On Lobbying Didn't Guarantee Success At Legislature. Civil Beat .

Mahr, K. (2018, May 4). How Cape Town was saved from running out of water. The Guardian .

Majumdar, S. e. (2011). Using contingent valuation to estimate the willingness of tourists to pay for urban forests: A study in Savannah, Georgia. *Urban Forestry & Urban Greening* , 10 (4).

Maldives Times. (2017). In 2018: what will be the new tax? . Maldives Times.

Mawson, S. (n.d.). Debt-For-Nature: Past and Future. Retrieved from Stanford University : https://web.stanford.edu/class/e297c/trade_environment/photo/hdebt.html

McAleer, M., Shareef, R., & da Veiga, B. (2005). Managing Daily Tourism Tax Revenue Risk for the Maldives. *Semantics Scholar*.

Michael, J. (2018). Constitutional Restrictions on Taxation of Nonresidents. House Research.

Ministry of Business, Innovation, & Employment. (2018). Options for implementing an International Visitor Levy. MBIE.

Ministry of Natural Resources, Environment & Tourism . (2019). UPDATES FROM THE MINISTRY April - June 2019. Palau Ministry of Natural Resources, Environment & Tourism .

Moody's. (2014). Moody's assigns (P)Aaa to State of Hawaii 2014-A Green Energy Market Securitization Bonds. Moody's Investor Service .

Moskowitz, D. (2018). Opportunities and Risks of Green Bond Investing. Investopedia .

Myers, G. (2017). British Virgin Islands to levy environmental fee on visitors. *Travel Weekly* .

NatureVest and EKO Asset Management Partners. (2014). Investing in Conservation.

News Desk. (2019, Apr). Denver Parks and Open Space Sales Tax Plan Rolls Out. Patch .

Office of Governor Ige. (2018, June 4). GOVERNOR'S OFFICE – NEWS RELEASE – GOVERNOR DAVID IGE SIGNS BILLS TO SET CARBON-NEUTRAL GOAL AND COMBAT CLIMATE CHANGE. Honolulu, HI, Oahu.

Office of the Auditor. (2019). Audit of the Department of Land and Natural Resources' Land Conservation Fund. Honolulu: State of Hawaii: Office of the Auditor.

Oleson, K., & Peng, M. (2017). Beach Recreationalists' Willingness to Pay and Economic Implications of Coastal Water Quality Problems in Hawaii. *Ecological Economics* , 136, 41-52.

Ordonex. C., U. D. (2015). GREEN BONDS IN PUBLIC PRIVATE PARTNERSHIP. IISD.

Ordonez, C. D. (2015). GREEN BONDS IN PUBLIC–PRIVATE PARTNERSHIPS. IISD.

Palau Government. (2018). Palau.gov. Retrieved from Visitor Arrivals: <https://www.palau.gov.pw/visitor-arrivals/>

Palau PAN Fund. (2016). Annual Report FY2016. Protected Areas Network Fund.

Palau Visitors Authority. (2018). Palau Pledge.

PAN Fund. (2019). WELCOME TO THE PAN WEBSITE! Retrieved from Palau PAN Fund: <http://palaupanfund.org/index.html>

Perez, R. (2019). DLNR funds mishandled, audit finds. *West Hawaii Today* .

PEW. (2015). Palau National Marine Sanctuary: a fact sheet. The PEW Charitable Trusts .

Pojas, R. (2019). Pristie Paradise Palau now a mobile app. *Island Times* .

Pojas, R. (2019). 'Pristine Paradise Palau' not a mobile app. *Island Times* .

PPP Knowledge Lab. (2017). Public-Private Partnership Reference Guide. International Bank for Reconstruction and Development / The World Bank .

Puhak, J. (2019). Hawaii at a 'tipping point' of overtourism, travel experts claim. Fox News .

RadioLab (Writer), & Perfect, R. L. (Director). (2018). Radiolab Presents: More Perfect - One Nation, Under Money [Motion Picture].

Relating to Visitor Impacts, Senate 29th Legislature (State of Hawaii 2017).

Republic of Palau. (2017). Restructuring the Palau National Marine Sanctuary Office and the Palau National Marine Sanctuary Executive Committee to strengthen implementation of the Palau Marine Sanctuary.

Resor, J. (1996). Debt-for-nature swaps: a decade of experience and new directions for the future. FAO .

Retkwa, R. (2011, Aug 5). Save the Earth, Buy Green Bonds. Wealth Management .

RGGI. (2019). Allowance Prices and Volumes. Retrieved from The Regional Greenhouse Gas Initiative: <https://www.rggi.org/Auctions/Auction-Results/Prices-Volumes>

RGGI. (2019). Auction Results. Retrieved from The Regional Greenhouse Gas Initiative: <https://www.rggi.org/auctions/auction-results>

RGGI Inc. (2018). The Investment of RGGI Proceeds in 2016. The Regional Greenhouse Gas Initiative.

Rinzin, C., Vermeulen, W., & Glasbergen, P. (2007). Ecotourism as a mechanism for sustainable development: the case of Bhutan. Environmental Sciences , 4 (2).

Roberts, D. (2017). The Northeast's carbon trading system works quite well, it just doesn't reduce much carbon. Vox.

Rocca, M. D. (2017). The rising advantage of public-private partnerships. McKinsey and Company .

Rodriguez, J. (2019, Aug 27). Public-Private Partnership Pros and Cons Benefits and Disadvantages of P3 Contracts. Small Business .

Roguski, S. (2019). User fees for the Electronic Travel Authority Cost Recovery Impact Statement. MBIE.

Rosen, C. (2017). Mexico Implements new Tourism Tax. Travel Market Report .

Royal Resorts. (2019). New Government Environmental Fees for All Hotel Guests In Puerto Morelos and Cancun. Retrieved from Royal Resorts: <https://www.royalresorts.com/new-government-environmental-fees-hotel-guests-puerto-morelos-cancun/>

SB950 Relating to Transient Accommodation Tax Public Hearing, Conference Room 225 (State of Hawaii Feb 12, 2013).

Shimogawa, D. (2014). Goldman Sachs, Citigroup head up Hawaii's \$150M green financing program. Pacific Business News .

Small, Z. (2019, Feb). Venice Will Move Forward with \$11 Tourist Tax. Hyper Allergic .

Sobot, R. (2018). Barcelona tourist bus STORMED by protesters as they launch summer of CHAOS. Express UK .

Stanford University. (2012). 'Opt Out' Policies Increase Organ Donation. Stanford, CA: Stanford Department of Psychology.

State of Hawaii . (2019). TARGET: Increase Restoration of Native Species. Retrieved from Aloha + Dashboard: <https://dashboard.hawaii.gov/en/stat/goals/5xhf-begg/4s33-f5iv/a3ea-237y>

State of Hawaii. (2019). The Aloha+ Challenge Dashboard. Retrieved from <https://dashboard.hawaii.gov/aloha-challenge>

Statement of Mike McCartney Director of DBEDT, SB 1463 Relating to Taxation: in front of the Senate Committee on Agriculture and Environment AND Senate Committee on Energy, Economic Development, and Tourism (State

of Hawaii Feb 13, 2019).

Stenhouse, M. (2018, Nov 6). Quoted in “Election 2018: Statewide Bond Issues Easily Approved”. Patch .

Sunset Ranch. (2009). Legacy Land Conservation Fund. Retrieved from Sunset Ranch Hawaii: <https://www.sunsetranchhawaii.com/blog/state-of-hawaii-legacy-land-conservation-fund/>

TARGET: Increase Marine Management in Hawai'i. (2019). Retrieved from Aloha + Dashboard: <https://dashboard.hawaii.gov/en/stat/goals/5xhf-begg/4s33-f5iv/ydtj-mhwg>

Tax Foundation of Hawaii. (2017). Re: Comments on “Study of the Hawaii Tax System,” Draft of Aug. 7, 2017, by PFM Group Consulting LLC (the “Draft Report”). Honolulu: State of Hawaii.

Testimony of Bernard, Hannah. (2019). representing House Committee on Water and Land, HB447, Relating to Aquatic Resources: hearings before the Committee on Water, Land, and Hawaiian Affairs, House 13th legislature . Honolulu: State of Hawaii.

Testimony of Coffman, Bruno, and Fletcher, SB 1463 – RELATING TO TAXATION (Presented Before the Senate Committees on Agriculture and Environment and Energy, Economic Development, and Tourism State of Hawaii Feb 13, 2019).

Testimony of Sally Motta, Acting Director of Finance. (2015, Feb 18). Hearing on SB534 Relating to the TAT. Honolulu: State of Hawaii.

The Auditor, State of Hawai'i and Belt Collins Hawaii LLC. (2015 Dec). State-County Functions Working Group Report. State of Hawai'i .

The Jakarta Post. (2018). Bali airport records 5.2 million foreign tourists.

The Nature Conservancy Hawaii. (2018). Natural Climate Solutions . The Nature Conservancy.

The Points Guy. (2019). New Zealand Will Begin Taxing Tourists This Fall - Here's Where That Money Goes. The Points Guy .

The Senate 13th Legislature. (2019). SB No. 1462 SD2 A Bill For An Act: Relating to Taxation. State of hawaii, Honolulu.

The World Bank. (2018, 2 6). What are Public Private Partnerships? The World Bank .

TNC. (2019, April 16). Blue Bonds: An Audacious Plan to Save the World's Oceans. Retrieved from The Nature Conservancy : <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/an-audacious-plan-to-save-the-worlds-oceans/>

Townsend, L. (2015). New surfer tax for Mentawais. Stab Magazine .

Travel&Lesuire (Director). (2019). Tourists Now Have to Pay an Entrance Fee Before Setting Foot in Venice [Motion Picture].

UHERO. (1997). Environmental Valuation and the Hawaiian Economy. University of Hawaii Economic Research Organization. Honolulu: University of Hawaii .

United Nations. (2016, July). Aloha+ Challenge: A Culture of Sustainability – He Nohona 'Ae' oia. United Nations Sustainable Development Goals: Partnerships Platform .

Van Beukering, P., & Cesar, H. S. (2004). Economic Valuation of the Coral Reefs of Hawai'i. Pacific Journal , 58 (2).

Waikiki Business Improvement District Association. (2002). Aloha and Welcome to the Waikiki Business Improvement District! Retrieved from Waikiki Business Improvement District Association: <http://www.waikikibid.org/home.htm>

Waikiki Business Improvement District Association. (2019). Precincts & Rate Schedule. Retrieved from <http://www.waikikibid.org/home.htm>

waikikibid.org/districtprecincts.htm

Walls, J. (2018). Government sets tourist tax at \$35 per visitor. *New Zealand Herald* .

Walten, K. (2016). This is not Cancun – Differences Between the Riviera Maya and Cancun. *Loco Gringo* .

Wang, P.-W., & Jia, J.-B. (2012). Tourists' willingness to pay for biodiversity conservation and environment protection, Dalai Lake protected area: Implications for entrance fee and sustainable management. *Ocean & Coastal Management* , 62, 24-33.

WBSIDA. (2018). WAIKĪKĪ BEACH SPECIAL IMPROVEMENT DISTRICT ASSOCIATION REPORT TO THE HONOLULU CITY COUNCIL FY 2017-18. Waikiki beach Special Improvement District Association.

Winterson, D. (2019, Jan). Investing in Forest Health. *Stanford Social Innovation Review* .

Witt, S. &. (1995). Forecasting tourism demand: A review of empirical research. *International Journal of Forecasting* .

World Bank Carbon Pricing Dashboard. (2019). Carbon Pricing Dashboard. Retrieved from https://carbonpricingdashboard.worldbank.org/map_data

Zocalo Public Square. (2019). "How Much Tourism Is Too Much?" Panel.



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To join the coalition of thought leaders aiming to improve the visitor experience while protecting Hawai'i's natural and cultural heritage, please contact:

Jack Kittinger, PhD

Senior Director, Global Fisheries and
Aquaculture program, Conservation International

Professor of Practice Arizona State University,
Julie Ann Wrigley Global Institute of Sustainability

+1 808 397-9077 | jkittinger@conservation.org

Emelia von Saltza

Project Manager, Green Passport Initiative
+1 207 939-8421 | emeliavonsaltza@gmail.com

Link to the full report:
www.conservation.org/HawaiiGreenPassport

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