THE EVOLUTION OF TOURISM: WHAT TOURSIM IN THE GALAPGOS ISLANDS HAS EVOLVED INTO AND WHAT IT CAN BECOME

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Darwin, Evolution and the Galapagos
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Introduction

Everybody wants to visit paradise. It is no surprise then that tourism in the Galapagos Islands is growing exponentially. Figure 1 shows just how much tourism has increased between 1970 and 2005. Both international and national visitors to the Galapagos have increased in number showing that not only has tourism increased but also that more and more nationals have been traveling to the islands meaning that tourism to the Galapagos has become relatively more affordable. Figure 1 shows the last number of yearly visitors to be approximately 120,000. In 2011, however, that number rose to more than 185,000 visitors according to the Galapagos National Park. This type of consistent growth exemplifies the importance of tourism to the Galapagos. Moreover, this growth is directly feeding into the Galapagos’ largest economic contributor. Figure 2 shows the Galapagos economy in 2006, separated by the different sectors. Although there is no distinct section for tourism, different pieces can all fall under the umbrella of tourism. For example, Vessels are the biggest section in the graph and it is indeed a part of tourism along with Hotels and On-Island expenditures. If these three slices are combined and labeled as tourism, tourism
makes up 77 percent of the Galapagos economy. This shows that tourism is the biggest contributing factor to the Galapagos. While 77 percent is already a staggering number, it is important to remember that this data is from 2006 when the amount of visitors according to the Galapagos National Park that year was 145,233. As the number of visitors increased we could expect that more money from visitors became part of the Galapagos economy, thus, shifting that seventy-seven percent up as well.

**Problems With Increased Tourism**

While an increase in tourism is beneficial to the Galapagos economy, there are negative externalities that are damaging the island ecosystem, endangering all that which makes the Galapagos special. First, the introduction of other species threatens the livelihood of the endemic organisms on the islands. The introduction of these organisms can come in many forms including purposeful introduction by humans. One of these examples is the guava tree planted for its fruit. Since its introduction in 1945 guava “has grown out of control and covers vast areas of humid highlands. The most radically affected island is San Cristobal where guava covers most of the highlands” (Eckhardt, 1972: 585). These same highlands are where a rare species, *Scalesia pedunculata* grows. This unusual forest is one endemic to the Galapagos, but with the introduction of the guava trees the forests have decreased
dramatically. These forests cannot compete with the guava and other introduced trees and while once abundant they are now considered endangered by the Charles Darwin Foundation. Recent surveys “estimate a maximum of 100 ha of Scalesia forest on Santa Cruz. This represents 1.1% of the original forest. In San Cristóbal, there is no Scalesia forest left” (Galapagos National Park, 2010: 109). The loss of this forest represents the damage that can be done by the purposeful introduction of non-native organisms in order to help feed the growing number of tourists and local population, which has also grown due to the increase in tourism.

Purposeful introduction, however, is not the only type of introduction caused by an increase number of tourists; it is the accidental insertion of non-native species that can cause unexpected destruction putting the endemic flora and fauna at great risk. One of the many examples includes the unintentional arrival of Philornis downsi to the islands. This bot fly lays its eggs in the nest of Darwin’s famous finches. Once hatched the larvae come out at night and feed on the blood of the finch hatchlings. The feeding habits of the bot fly lead to “nestling mortality, which is proven to be as much as 100%” (Galapagos Conservation Trust, 2011). If the fledglings do survive they “often have deformed beaks, reduced growth rates, and anemia”, which leads to a lower reproductive fitness in these individuals and thus in the population (Galapagos Conservation Trust, 2011). As one of the Galapagos most famous organisms the loss of the finches would be completely devastating to the islands. Although the finches are currently still in the Galapagos, if this pattern continues it can be expected that the populations will be put into further risk. The accidental introduction of Philornis downsi is clearly having devastating effects on the finches showing that unintentional integration is clearly a problem in the Galapagos
(Silberglied, 1978: 273). With the increase in tourism there is also an increase chance of bringing in new invasive species. Every new visitor can carry seeds on their shoes, parasites and diseases in their bodies or a small animal in their luggage.

The accidental introduction of these organisms by tourists sometimes comes in unexpected ways. It has been observed that the light on tour ships attracts bugs such as moths and other nocturnal insects (Silberglied, 1978: 273). This type of introduction is perhaps not the first one that comes to mind when thinking of ways that organisms are brought to the islands but it shows that species can be introduced in a variety of ways and that increase tourism is only increasing the chances of introducing some of these species. With more tourists comes the need for more vessels, with more vessels come more lights that attract insects, with more insects comes a greater chance of introducing an invasive species and with more invasive species comes the destruction on the Galapagos endemic flora and fauna.

Along with the introduction of non-native species to the islands, the Galapagos face yet another problem in the rise of population due to the growth in tourism. As figure four shows there has been a growth in the population parallel to the growth seen in tourism. “Rapid and sustained population growth, beginning in the 1970s, was primarily driven by the inflow of tourism dollars that attracted Ecuadorian immigrants” to the islands (Epler, 2007: 6). This increase in population size too will have a detrimental
effect. With more people there will be a greater amount of waste produced, food needed as well as unexpected problems will occur. If more food is needed to support the local population there are two options for how to get food in the Galapagos. The first is what is currently taking place right now: transportation from mainland Ecuador. Transportation of food already increases the risk of introducing new species to the archipelago, but if more food is needed to feed the growing population than the risk of introducing new organism increases exponentially with each new shipment. The second option for providing food for the people is to grow the food in the Galapagos. This of course presents other complications. Once again there will be introduced species, this time purposefully, but there will also be a destruction of the natural ecosystem in order to set up agriculture sites like farms as well as grazing ground for cattle and other animals. The increase in population will increase the need for food, and thus, the Galapagos will have to either import more, thus increasing the risk of introduction of non-native species, or it will have to grow more food on the islands leading to destruction of the natural areas.

The increase in tourism clearly brings with it a plethora of problems, both expected and ones that have yet to be discovered. As such, it is essential for the livelihood of the Galapagos that tourism be reduced or capped. This would lead to a much more environmentally sustainable ecosystem in the Galapagos and would help ensure the survival of more endemic species. A cap on tourism, however, would clearly lead to a drop

Figure 5. Santa Cruz Island undergoing more construction (Farber 2012).
in economic benefits and thus the people would be completely against it. Hence an alternative must be found that is both environmentally sustainable, and economically sustainable meaning it would allow the number of tourists in the islands to be capped while maximizing the economic benefits of tourism.

**Ecotourism**

Ecotourism has been declared by many to be a healthy alternative to current tourism practices (Bjork, 2000: 189). But what exactly is ecotourism? There are some competing definitions over the term, but one that seems to be widely accepted is “environmentally sustainable travel and visitation to natural areas, in order to enjoy appreciate nature (and any accompanying cultural features, both past and present), that promote conservation, have a low visitor impact, and provide for beneficially active socioeconomic involvement of local people” (World Conservation Union, 1996). This definition, although a bit vague in some areas states three distinct points detailing what exactly ecotourism entails. In the Galapagos these points have specific ways in which they could be carried out in order to make all tourism ecotourism.

![Figure 6. A tourist appreciating the Opuntia cactaceae. (Liker, 2012)](image)
The first way that ecotourism can take effect in the archipelago is through tourist education. This means getting more educated tour guides to properly inform people while they are in the Galapagos. Moreover, there should be a focus on the natural history aspect of the Galapagos as well as its importance to human history in terms of the research done there in the past and the research being conducted currently. This would allow tourists to leave with a more enriched perspective and not just souvenirs. The second point which ecotourism must focus on is the reduction of the environmental footprint left behind by tourists. This could primarily be done through the use of more environmentally friendly vessels, especially because ships are the main method of tourism. This means having vessels that are more efficient with their use of fuel. Additionally, the vessels must find environmentally friendly ways to dispose of the waste produced by their passengers. Hotels, however, must also be constructed in a way that has the lowest environmental impact. The electricity gathered must also be produced in a sustainable way like solar panels for example. All of these methods would make tourism more sustainable in the Galapagos and would allow for the true beauty of the archipelago to be enjoyed.

While ecotourism is a great idea that would definitely improve the environmental sustainability of the islands, a key point is that it must also provide a sustainable economy for the islands. The current system in place is one thriving with the increase in tourism, the islands however, are not the ones benefiting from the tourism. One study found that total income in the archipelago increased 78 percent, to $73.2 million, between 1999 and 2005, for an average annual growth rate of 9.6 percent. Despite this striking increase in total income per-capita, however, income in the archipelago increased at a rate of only 1.8 percent annually (Taylor, 2009: 10). This clearly shows that the money coming in from this
excessive amount of tourism is not staying in the Galapagos. Instead there is a leakage of the economic benefits. To put this into real numbers the same study found that for every US$1000 only US$218 remained in the islands (Taylor, 2009:10). This leakage is due to multiple factors. The first and most prevalent one is the fact that most of the tourism in the Galapagos, as was described earlier, comes in the form of vessels. These vessels are for the most part owned by people who do not live in the Galapagos and are usually big touring companies based either in mainland Ecuador or some are out of Florida. Due to the fact that vessels are where most of the money comes from and the fact that the vessels are not locally owned it is clear to see why the money is leaving the Galapagos. A clear solution to this problem and one that would transform tourism in the Galapagos into ecotourism would be to have these ships be owned by citizens of the islands. This way more of the money that is made stays in the archipelago and can thus be of greater benefit the local community more. This would allow for the number of tourists to be capped and reduced while still providing the same amount if not a greater amount of money to the community.

Ecotourism is clearly a better option for the Galapagos. It keeps tourism to the Galapagos based on education and on an experience with nature emphasizing the natural history and the importance of research both past and present, which has taken place in the archipelago. Additionally, it makes tourism as environmentally friendly as possibly by reducing the ecological footprint left behind by each visitor. Perhaps most importantly,
however, ecotourism allows for a cap on the number of tourists while keeping the benefits that come with tourism at a maximum. These benefits are of course economic ones. Ecotourism, as such, makes tourism in the Galapagos both environmentally and economically sustainable, therefore benefiting the archipelago and the people simultaneously.

**Conclusion**

Tourism in the Galapagos has been increasing for the last few decades. With this increase there is not only an increase in the total number of tourists but also an increase in the number of problems and harms that this growth could bring to the archipelago. It is clear that there is an alternative, which if adopted could make the islands more environmentally and economically sustainable. Getting to this point, however, would take some work and perhaps some sacrifices that people are not ready to make. Nonetheless, something must be done soon. There is a choice that must be made

At the end of her book *Galapagos at the Crossroads*, Carol Ann Bassett leaves the reader with three distinct futures for the Galapagos which all depend on what actions we decide to take in the Galapagos. In the first scenario “Galapagos will welcome three million tourists a year, build a golf course on Isabela Island, put in big hotel chains, allow sport fishing, and promote para-sailing from yachts that tether and pull tourists on parachutes as they do in tourist towns like Puerto Vallarta in Mexico”. This option might perhaps make sense in the short run. It would boost the economic standing of the Galapagos dramatically, but it would ruin all that makes the Galapagos special. In the Second scenario “the Galapagos will become a techno zoo, a big park like Busch Gardens in Florida, where
wildlife is managed and controlled like a nice fantasy island. Not with big chain hotels or luxury resorts but with bungalow-type hotels where people can feel at one with nature”. This feeling, however, would be nothing compared to the feeling one gets when visiting Galapagos and seeing it in all its wonder. A techno-zoo would feel a lot less natural than being able to walk next to a blue-footed boobie or swim with sea lions like people can do right now. Finally the last option is to adopt this idea of ecotourism. This would allow for the Galapagos to not just stay the way it is right but more work would be done to get it back to the way it was before humans introduced new problems to the archipelago. It would conserve the Galapagos for future generations to enjoy. Research could continue on the islands and new knowledge thus created. These are our options. Will we transform the archipelago into something that Darwin would never recognize or will we conserve these rare and “enchanted islands”, these encantadas.

Figure 8. Santa Fe Island (Ruiz-Cornejo, 2012).
References


