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Conservation in conflict: an assessment of plurality in environmental management

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Vassar College Anthropology Senior Thesis

Conservation in Conflict

An Assessment of Plurality in
Environmental Management

Frank Najjarro

Anthropology Major '18

Senior Thesis

Table of Contents

Acknowledgements.....	2
Introduction	3
Playing with Ethnography	7
Australia	7
Guatemala in Two Parts.....	12
Singapore	14
Ethnography Chapter in Three parts	18
Singapore	18
History of Scarce-city	21
The Singapore Water Story	25
Experiential Learning at Bishan-Ang Mo kio	27
Top-Down Forces	30
Australia	34
A Rough Conservation History	34
Lake Barrine Field Trip	35
Kids Teaching Kids at Redlynch State College	39
Holloway’s Beach Program	41
Guatemala.....	45
An Oppressive Colonial History.....	45
Everyday Struggles for Displaced Communities.....	46
The Case of Totonicapán.....	49
The Maya Biosphere Reserve.....	54
Understanding Conservation through Social Theory.....	56
Leff	57
Appadurai.....	58
Tsing	60
Latour	61
Conservation the Word.....	62
Conservation from Top-Down vs Bottom-Up	65

Land Use.....	69
Conservation Education.....	73
So what does ‘conservation’ mean?.....	77
Education.....	78
Land Use.....	83
Conclusion in Two Parts.....	88
Part 1.....	88
Part 2.....	89
Works Cited.....	90

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Introduction

Definition of Conservation as per the Merriam-Webster Dictionary

1: a careful preservation and protection of something; especially: planned management of a natural resource to prevent exploitation, destruction, or neglect water conservation wildlife conservation

2: the preservation of a physical quantity during transformations or reactions

When you do a google search for 'conservation definition' the link to this prestigious dictionary appears; one which tries very hard to declare the meanings of words with authority. I apologize in advance to the lexicographer who may have worked very hard, behind their desk, carefully piecing the best definition to this word that they could. If you did work hard on this definition, my imagined lexicographer, I hope you read this as a love letter, one dedicated to the task of finding words to define other words, because what

you are about to read is just that, an exploration, through experiences, ethnography, memory, and theory which I hope shows you the love I also have for this art form.

Now I say to you definition, how dare you be a flood gate to the reservoirs of knowledge lying just a bit beyond the words which you use to define conservation. Open up the flood gates. Conservation for too long has operated under just this one definition in the imaginaries of millions of people here in the USA, and though this is no longer the case here in the USA, it certainly never was anywhere beyond.

I' m arguing that conservation no longer exists tied to its western denotation, if it ever did. Rather, Top-Down or Bottom-Up groups, such as local communities, governments, and NGOs, use Conservation as a concept, giving it plural meanings to achieve their goals for nature and people; I will be focusing on two areas: struggles of land use and environmental education. Through my research, I have seen how big C Conservation doesn' t exist in communities or in lessons, not even in theories. Often it' s little c conservation, or conservation efforts, conservation concepts, that determine how people imagine and bring to life their ideas and goals. I present how conservation and its plural meanings manifested during my research in Singapore, Australia, and Guatemala, and though I saw the same word being used

in all three places, what each organization or community meant by it, was either slightly or very different.

Though the question about what we deem natural lingers throughout this piece of writing, I stray away from defining it, leaving it purposefully ghost-like, due to the vast discussions I came across while doing research for conservation. However, I think this serves me very well, as the natural and the problem of the human in the natural is how conservation came to be, and continues to be. By omitting a concrete definition of the natural and presenting instead the complex concept which one of its children has become, I hope to have readers understand these problems as more than single or double sided—rather vast arrays of fishing nets, spider’ s webs, or three dimensional galaxies which move and travel with us in tow, yet we have little say as to where they might go.

To this end, I first bring my thesis with three short creative ethnographic pieces which are fictionalized in the story they tell, but ethnographic in the situations and events they describe. In order to grasp the complexity and plurality of conservation, I felt my writing should also reflect that. So I first showcase moral and historical dilemmas from each of the countries that were caused by conservation.

Chapter three serves to tease out the complexities and questions I hope to raise with the reader in chapter two. These three separate ethnographic accounts tell the tale of conservation I witnessed and researched. Yet they also have distinct flavors in how they discuss the situations, histories, and stories which I encountered. I hope to further us along a knot which at this point has only gotten more and more complex. The ideas behind conservation in each country manifest themselves both in the people who are pursuing conservation as a goal and a means to a future, as well as by organizations and people who wish to discuss humans as either inside or outside of nature.

Chapter four then tackles two things, the definitions of Conservation (how Arjun Appadurai, Enrique Leff, Bruno Latour, and Anna Tsing each think about conservation) and also posits and imagines conversation for a future in the Anthropocene. In this conversation I hear what each of them have to say to each other about conservation; to further complicate the ways conservation and its plural meanings can paradoxically agree and mean many different things, even if those definitions clash. By bringing together the perspective from Latour, I hope to capture the holistic approach which this conservation can have. Leff provides Marxist developmental theory perspective, which can often clash with the former. Tsing allows the conversation to discuss what it means to have the clashes which conservation inherently has and how we can work with

them. And Appadurai, though not directly addressing conservation, is critical due to the transnational nature of my thesis; his idioscape is crucial for understanding how it is conservation has become a pluralistically defined concept, and not a stagnant process which works in opposition to the use of natural resources.

Lastly, what I hope to accomplish with chapter five is to connect as many of the threads which I have unraveled from the knot of conservation and re-knot it all back up. Try as one might, conservation is an active force in the world, which is beyond the control of anyone. Its place is now in the idioscape and imaginaries of those who put it to use, who have ideas about what may be best for them, their communities, their constituencies, and the world at large.

Playing with Ethnography

Australia

It was only the second rainstorm of the season, but I already missed smelling the drenched earth, hearing the frogs come alive, and the birds flit around our yard with new vigor. Mom needed help with the washing. It was almost impossible for our clothes to dry on the line during the rainy season, the heat made the humidity even more palpable, so my clothes were never truly

dry. She came out of our wooden house with a gray laundry pail she always uses, expecting me to be the one to hang it up on the line. She didn't have to tell me to do it, I knew what I had to do, packing all of our things was stressing her out.

A man with a Canberra accent came by a few days ago, said he had to talk to dad, but he was at the mill, like every other day. Mom talked to him outside on the veranda, and when she came back inside she fell on the living room chair and didn't get up for a long time, staring out into nothing. I asked if I could go outside and play and she just nodded.

When dad and Terry, my older brother, came back early from the mill I raced back up the creek, but dad didn't even say hello, he went straight into the house to talk to mom. Terry sat outside, still covered in sawdust that stuck to him due to the heat and humidity.

"Terry, what's going on? Why are mom and dad acting so strange?"

Terry grunted back at me. What had I done? I did my chores for the day, and here he was not talking to me either. I threw a candlenut at him and ran down to the creek again. If no one was gonna tell me what was going on... then fine, I'd just stay by the creek the rest of the arvo.

I ran down to the same spot every time, a big granite boulder that lay on the side of the creek, the fresh water flowing down much faster now with the rain. The sound was deafening, as the rainstorm hit all of those leaves

and rocks and water. I just crouched on that rock, letting myself get wet, I knew I didn' t have many storms like this left, we were leaving in a few days. No, we were being kicked out.

The day the Canberra man came I spent the arvo jumping from rock to rock, watching the fish swim and trying to catch them. I even got the first jacobson' s plum of the season. It was dark blue on the outside, finally, and blood red inside. It tasted super sour, but I didn' t let a single drop of the juice drip down my chin, I missed their taste so much.

“DOOOOOOOOT!!!” I heard dad yell for me so I raced up the boulders as fast as I could, it was dusk and the boulders were all hidden in shadows from the forest canopy above, but my bare feet gripped the rough granite surfaces well and I didn' t lose my balance once.

“DOOOOOOOOT!!!”

“I' M COMING DAD!” I yelled back as I made it across the last few boulders.

I wondered if he was finally going to tell me what had everyone so cross all day.

Now I wish I had stayed by the creek, chasing the fish and jumping around. By now my clothes were soaked all the way through but I just continued to sit on the boulder wondering what would happen to everyone? Where would Mr. and Mrs. Sellers go? What about Rob and his new wife Mary? What about Jane and Alexia from the school house? Was I ever going to see them again after we

left? We were going to have our birthday parties together this year, at our house, built from lumber that dad got.

He cut down four HUGE trees to get enough wood, then built it with mom' s help. We' d heard the story so many times I feel I was practically there to see it. But I wasn' t born yet, not even Terry was born yet. Mom and dad had just gotten married. We' d been living here all of my life, all of Terry' s life, and mom and dad lived in the house for years before Terry was even born. Grandpa had given dad this piece of land just like his dad had done before that, and his dad before that, they had been mill workers and tree cutters for so long. And there are so many trees everywhere, what' s the big deal if we cut down a few of them anyway?

I smelled the tobacco before I even saw dad. On that day, when I finally made it up the little hill that led down to the creek, I saw dad sitting on the veranda, smoking his pipe waiting for me. The smell of tobacco drifted and led me to him, a smoky invitation to news that would set my whole world on fire.

"C' mere and sit down Dorothy, I need to tell you something."

Once he called me by my real name I knew it was something really bad. That' s the same tone he used when grandpa died and when Terry almost lost his hand at the mill. A million thoughts ran through my head all at once, was mom ok? Was he ok? Did someone die at the mill? It wouldn' t be the first time,

but this felt different. Was I in trouble for not getting good grades at school? But I did have good grades.

“Everything’ s gonna be okay my little lamington, but I need you to listen very carefully now. Do you remember the Canberra fellow who came by in the early arvo?”

“Yeah…”

“Well, he came to the mill as well and he had some news for us. He said we can’ t stay here anymore, that we have to leave.

He said it with such a sweet soft voice I felt he was putting me to sleep.

“So in a few days we need to have our things packed. We’ re gonna go stay with your auntie in Townsville for a bit. ”

“Dad, I don’ t understand… What do you mean? That Canberra man can’ t just kick you out, this is your house, our house, how can he kick us out?”

Tears started welling up in my eyes.

“He’ s not kicking us out, but we can’ t stay here. They’ re shutting down the mills around Mt. Windsor; people don’ t want us to cut down any more trees, so we can’ t stay. ”

“But I don’ t want to go to Aunt Meridith’ s, that’ s so far! And when are we going to come back?”

*"I don' t think we' re going to come back. We' ll be staying in
Townsville, hopefully I can get a job at the military base and Terry too. You
can finish school there."*

I don' t want to finish school there. I don' t want to pack up my
clothes. I don' t want to move. I want to stay in our wooden house in the
forest and go to the school house in the carriage, and help mom with the
washing.

The rain suddenly stopped. For a moment the jungle was silent and still.

Guatemala in Two Parts

Part I

This is a branch of past words.

I invoke the players of the past.

Here we shall begin again,

Those players of ball on stone caves

The illumination,

The musings from old, to new, too old, too new

Three lands

Three suns, three moons, three trees

One uprooted, rising now from Xibalba

Two cut by Greed, bled by Need, deserted by Necessity

Three nurtured by Time, eaten Alive and Dead

By those Monsters

Those that hunt One, Two, Three

The blood swallowed is not enough.

Great Monsters rise in shifting Seas

Black Pools swirling with Teeth and Bone

From across the Earth, the Monsters breath

Malignant Breath into eyes

Obscure the Truth, Shroud in Darkness

Those Truths which belong to

Earth, Sky, and Mother Tree

Memories of Family

Blood ripping Blood with the Teeth of Monsters

One, Two, Three Xibalba

They Swim, They Ripple, They Hum, They Sigh

With lungs contaminated
With Lungs Incapacitated; Poisoned by
Breath
Breathe
Mother Tree, Father River
Your children are Light
They Illuminate in Dark Time
In Dark Seas, In Dark Earth, In Dark Memory
Your Children Invoke you
Quetzal Feathers, Plumed Serpent
Breath of Knowledge, Breath of Truth, Breath of Illumination
Bring the Light to Seas
See of Light, See of Truth, See of Breath
Speak with Light
Xibalba warms the Corn, Child of Light
I invoke the Corn, the Father, Mother, Sky, Earth
Illuminate the See of Teeth, of Ripping Flesh, of Drinking Blood
One, Two, Three will Breathe your Light
Illuminate whatever Exists:
In Earth, In Sea, In Tree
In One, In Two, In Three

Part II

Land of Trees
Land of Three
Land of life Giving
The land of my life, Given

To invoke your Past is to bring back Ghosts
To look at your future is to hope those Ghosts don't come back
Land of Trees, inside Mountains, Plains, and Seas
When your breast was first ripped open
Dawn erupted and your blood brought forth life.

The light with which life flourished,
Gave forth children to inhabit your Earth
Puma, Jaguar, Deer, Possum
And those who have suffered
And have worshiped your breath
Maya who stand today surrounded
In Earth, in Sea, in Sky

The dark which spews from Xibalba
A poison to your lungs and your children
It comes in shades of

**Veblen, Armas, CIA, USA
And those who have exploited
And have worshipped your death
Elites who stand today on top
In steel, in metal, in blood**

**You rage on, fight with the power
Of green, of people, of care
You weep on, the loss of your life causing great pain**

**You grow on, even as greed rips at your flesh
Some now pretending to care
Bandaids cures on shotgun holes**

**Breathe
Green is coming
Green is fighting
Quetzalcoatl will fly once more over you
To see your
Breath, light, life
Erupt once more from the depths of Xibalba**

Singapore

Annie Chan

Ey! Went with my daughter and the kids to Bishan Ang Mo kio! It' s been so long since I' ve gone, but wah lao! It' s so modern now! Makan¹ McDonalds and flying kites along the stream. Can' t wait to go back!

(In the comments section)

¹ Eat

Imran Kumar

The kids look like they are having fun. Good to see you doing well! Wah you looking skinnier! Did you not eat so much chilli crab this time?

Michael Han

I love the new park too! We had the kids go into the water as well. It was very nice.

Joseph Wu

My wife and I took the kids there a few weeks ago, it' s amazing what they' ve done. Did you see the fish?

Annie Chan

Yah we did! We didn' t feed them, but very nice to see the koi! Make the kids very happy lor

Joseph Wu

Good to see your adventure so shiok!²

Sandra Li

Let me know when you stop by again, we live in Block 284, I' ll bring my kids down! Don' t bojio³ ah!

² Awesome

Farhana Amin

You got grandkids now **Annie Chan**! I' m still waiting for mine, my son is hard at work at a bank

Annie Chan

My grandkids Lily and Paul ah, they really keep me active!

Farhana Amin

Yeah, I just hope **Imran** finds someone nice to bring home soon!

Daniel Hu

I used to go here with my dad before any of the construction. I' m happy to see it is back to the natural stream it should always have been

Annie Chan

I know what you mean Daniel. I haven' t been back since the canal was built. Aiyoh, I never managed to take my daughter.

Daniel Hu

I was little last I went

Annie Chan

But we needed water. you remember water rationing? we won' t have to live that way again

³ Not invite me

Daniel Hu

Oh ya hor but I also remember our ancestors here and they removed them

Annie Chan

Yah, such a shame. I buay tahan ⁴sometimes, i' m still very obiang⁵

Tan Woo Ling

The grandkids are now so big! Hope you guys had fun in the water!

Annie Chan

The kids wanted to, so I let them go in lah. They loved it, but I was worried about the fish, Lily a bit blur⁶ sometimes so when she got very excited, she almost fell in!

Tan Woo Ling

Aiya don' t need to be so kiasu!⁷ She would have been fine, the water is very clear and cool that you can even drink it!

Annie Chan

Oh no, I would never even think about it. The kids for sure will get sick!

Tan Woo Ling

⁴ Can't take it

⁵ Old-fashioned

⁶ Clumsy

⁷ Overeager

Don' t worry lah!, the plants around the river clean the water, it' s actually very safe wan!

Annie Chan

Eh! I didn' t know that! I' ll make sure to tell the kids!

Tan Woo Ling

For sure, you know, my own grandkids bring home these lessons from school and they actually getting us to cut down our shower times. Siao ah! James sits outside the bathroom door with a stopwatch, timing our showers now!

Annie Chan

What a responsible little one you have! Mine are still too young for that, but Paul starts school in a few months

Chan Mei Lee

孩子们真有精神! 多发点照片! ⁸:)

Ethnography Chapter in Three parts

Singapore

I want to weave three stories from these three countries together. I hope that in doing so, I can articulate and invoke the interconnectedness that

⁸ The children look energetic! Post more pictures!

I feel strings these places together which are separated by oceans. They are not the same, and the issues that erupt from the street, jungles, and trees of these lands are all unique, but conservation has brought them together. The stories of conservation I want to tell here live in the same time, breathe the same atmosphere, and are nurtured by the same Earth. It's oceans that perhaps shroud our ability to see how conservation connects them, our inability to really see is shrouded by Politics, development ideals, access to technology, economic opportunity. These countries were not really chosen, and they didn't choose me either, they happen to be the places where I have seen conservation in action and the complexity found when you have Top-Down approaches attempting one thing, and Bottom-Up approaches doing something else. The two themes of where I saw this articulated the most were conservation projects relating to land use in Australia and Singapore and relating to conservation education in Singapore and Guatemala. If I can start by explaining to you Singapore then perhaps we'll have a starting place for a Gordian knot which to me doesn't have a start or an end.

As I gawked in the tropical Metropolis of Singapore, sticky from the humidity, at the bougainvillea planted in the street overpasses, I remembered my grandma's words, calling these pink, orange, and white delicate leaves

“...el fuego que no quema, fosforitos ensendidos.”⁹ Smooth on your fingers, their texture is like papier Mache, they survive under the tropical sun and heavy jungle air. What I saw in Singapore really was a city in a garden (Yew, 2000). My eyes were not deceiving me when they saw hundreds of flowers and plants along the roads, and entire streets which looked like ornate mansion gardens. The vision that Lee Kuan Yew planned for this city has been fulfilled in many ways, yet there is something eerie about the whole thing, the green that I saw lining the streets was neat, orderly, placed there on purpose and kept up with a meticulous eye for detail. The road from Changi Airport into the Central Business District (CBD) is one of the best examples.

On a trip to the Cleantech Park I, under the Jurong Town Corporation, we finally saw some of the wilderness I thought I would be seeing more of, large vines overtaking massive trees, a messy green which appeared out of control: it has its own sense of organization and rhythm. And it's this rhythm, the one which I grew up seeing in the mountains and valleys of Guatemala, which the city center lacks. The city runs like blood through veins yet only on the outskirts, far removed from the boundaries of the Cleantech Park, was I able to see a nature with which a young me could be familiar and a current me expected. Instead, the Public Utilities Board (PUB) would like for the populace to enjoy one of the ABC Waters projects which they have created and

⁹ ...the fire which doesn't burn, lit matches

partake in using the green spaces which they have so meticulously designed.

‘Messy’ nature was only found on the outskirts of Singapore, but what the PUB wants their citizens to experience is a nature which is ‘under control’ . A nature which has a purpose and which goes back to the functional way in which Singaporeans imagine space to be used. A ‘messy’ nature doesn’ t have a place in the organized centers of population of the island because it doesn’ t serve a purpose, there isn’ t enough space for it so it only exists on the outskirts of the city; but in Guatemala, nature is not conceptualized in this way, so a ‘wild’ nature is left to exist.

History of Scarce-city

All three of the countries I will be discussing have had very different relationships with hegemonic powers in the form of colonialism, and the countries bear the scars of these regimes. Singapore is most marked by two overbearing presences in its history, British colonialism and Japanese occupation. (John Kelly, Per. Comm., 2016) It was because the Japanese defeated the British in Singapore that, once the war was won against the Japanese, the British also leave the country, only providing a small amount of money to cover the destruction and hurt which the Japanese Imperial Army had caused. (John Kelly, Per. Comm. 2016; Martha Kaplan, Per. Comm. 2016) In a move towards safety, LKY led a deal with Tunku Abdul Rahman to bring Singapore

into the coalition forming out of former British colonies in 1963. However, due to racial tensions among a majority Chinese descendent population in Singapore and a Malay population on the peninsula, as well as disagreements over economic policies, the relationship crumbled, and Singapore officially declared independence in 1965. (Yew, 2000)

The ABC Waters Project comes as a result of the Singapore–Malaysia relationship, as not only does Singapore need to establish its national identity as separate from all of the countries which its people come from, but also become water independent by the time their water contract with Johor, Malaysia expires in 2061. This fact underlies all of the efforts the Singapore government has and is taking to cement the creation of their imagined community. (Benedict, 1983) In order to do this, LKY pushed Singapore towards development. This meant industrialization, which meant first attracting investors to the little red dot (Yew, 2000; Citation, Kaplan, 2015)¹⁰ Lee Kuan Yew and his governmental staff, both domestically and internationally, were successfully able to attract large industries which gave Singapore its entrepot status back.

“It was important we did not generate rancor and friction over the handover of properties or the provision of aid. To do so would undermine

¹⁰ A common nick name for the island country among Singaporeans

confidence and whatever aid we might get could never make for the loss of confidence if relations with the British soured.” (Yew, 2000) In his account, LKY feared the frictions his actions would bring, but I believe it was the frictions he did create that gave credence to his message, the hope for a Singapore which could succeed in independence. “...in October 1967, I recounted to 50 business people at a luncheon in Chicago how Singapore had grown from a village of 120 fishermen in 1819 to become a metropolis of 2 million. This was because its philosophy was to provide goods and services ‘cheaper and better than anyone else, or perish.’ ” (Yew, 2000) This philosophy was a friction between the Singaporean philosophy LKY describes and the potential demise of the country if resources weren’ t secured, jobs created, and an army trained. (Yew, 2000) These historical negotiations with its neighbors helped establish Singapore as a competitive country for businesses. Once this was in place, the unemployment rate of the country was substantially reduced, and Singapore could focus on the next steps of the self-described modernizing project it had entered.

This modernization project meant revitalizing the infrastructure of Singapore, chief among this the water infrastructure. In her article titled *Nation and Conservation: Postcolonial Water Narratives in Singapore Rituals* (2015) Martha Kaplan describes the ways in which political discourse shifted

from the preoccupation with decolonization and ‘red’ communist politics, to ‘green’ and ‘blue’ politics, which look towards the future of the nation state of Singapore. This politics is one “... of accepting, a confluence of prosperity, technology, pleasure and care. Conservation then is a desire, not a duty, a moral attribute, not sacrifice or compromise.” (Kaplan, 2015) The reservoirs of Singapore are some of the most complicated and highly protected parts in the history of the country due to water insecurity, but also as a starting point for water technology advancement. Conservation here takes on a different meaning due to the necessity for water and a push from a national leader who wanted to modernize the country. And it’s through this lens which we get policies to keep people away from water reservoirs at first and the marked shift to a motto which whole heartily accepts and promotes conservation and enjoyment of water resource in the country.

Today the PUB, through various actors such as the Learning Trails guides, teaches this history, and the reservoirs are key. They are still under heavy protection and while I was there I was able to see a National Day¹¹ sign hung right next to a warning sign telling people to keep out of the water management facilities at Bedok Reservoir. It was a very explicit message of a little man holding a gun and another holding his arms up. Singapore has

¹¹ A celebration of Singapore’s Independence from Malaysia where festivities erupt all over the city which culminate in the National Day Parade.

changed to have the reservoirs now be open to the public and resonate with its mission statement: Conserve, Value, Enjoy. Citizens are encouraged to use the walkway along many reservoirs, kayak, canoe, and fish. The state now gives people the freedom to enter these spaces because they want them to enjoy them, identify with them, but they also run the risk of the water being contaminated somehow. These reservoirs have many connections back to the global and its frictions play out in the way Singapore plays with the rhetoric of being a water precarious state, relying on water from Malaysia. Particularly at the International Water Week¹², there is a major push for the international community to understand Singapore as water secure, with solutions at hand for any disaster that may arise. One of these solutions being the reservoir system and another major component being the technology Singaporeans produce as a result of this state of water precarity the country was historically in.

The Singapore Water Story

To that effect, Singapore teaches the Singapore Water Story to every student in their public and private school networks. Through the Learning Trails (LTs) the PUB is able to mass distribute information about the ABC Waters Project and have all students learn about the history of water scarcity in their country. The LTs is a program developed by the PUB in order to engage

¹² A flagship program which is held in Singapore. It is the site for global water technologies to be showcased, bringing in city Mayors from many cities all over the world. It is also the ceremony where the Lee Kuan Yew Water prize is awarded to an actor which has contributed greatly to solving global water crisis.

the young citizens of Singapore with the newly created green spaces which the national government has funded. Each lesson is personally catered; all of the materials for the LTs come directly from the PUB, including the rhetoric used to teach in the learning guides. In grades 1, 3, 5, 6 or 7, and 11, students are approached some way or another by the PUB to discuss water in Singapore. Drawing directly from the children's handbook that is given out at each field trip, the Singapore water story is all about the four national taps:

“Singapore has Four National Taps, one of which is local catchment water. With the completion of Punggol and Serangoon Reservoirs as well as Marina Reservoir in 2011, two-thirds of Singapore's land area now serves as water catchment. There are currently 17 reservoirs in Singapore collecting and storing rain for our water supply”

(Learning Trail Guide, 2012).

The other National Taps include water from Malaysia, Desalinization, and NeWater¹³. Having learned this information in the classroom, the students come prepared for the hands on activities they will be doing during the LT. And this is where I joined them, having gained some of this knowledge not until

¹³ Tortajada, Cecilia. "Water management in Singapore." *Water Resources Development* 22, no. 2 (2006): 227-240. Ching, Leong. "Eliminating 'Yuck': a simple exposition of media and social change in water reuse policies." *International Journal of Water Resources Development* 26, no. 1 (2010): 111-124. For discussion on NeWater and its complexity. Many journal articles and other texts have been written around NeWater in Singapore.

the day of, I still felt welcomed by the group when I arrived for the LT at the Kallan River at Bishan-Ang Mo Kio Park.

Experiential Learning at Bishan-Ang Mo kio

The sun was hot and I was lost. As I left the MRT station I knew exactly how to get to the park, but I didn't know exactly where I was supposed to meet Mr. Wong, the Can Act Asia representative in charge of the LT I was going to become a part of. I finally found the restaurant we were supposed to be meeting near and proceeded to call Mr. Wong with my pre-paid cellphone. However, a few steps behind me the team of teachers and Mr. Wong were already there getting buckets ready, handheld microphones, ropes, and other science tools used for measuring during the LT activities planned. After introductions, Mr. Wong walked me through some of the logistics of how the Learning Trails ran, who the school they were doing them for today was, and then let me ask a few questions about what to expect during the time we would be spending at the park. As we talked about what the lessons they would be covering, the students from the Convent of the Holy St. Theresa all-girls school began to file into the shade we were standing under. They quickly found comfortable spots to sit down on the concrete, shaded from the sharp tropical noon sun, and the Learning Trail guides got to work.

Matthew was the teacher I followed along for most of the Learning Trail. He was an energetic, knowledgeable and a careful teacher, keeping the attention of the girls and getting them to quickly answer questions about the Singapore Water Story, which they had already been learning about in their classrooms. The group of students we had was mostly around the age of 12 and all engaging well with Matthew, despite the heat. We walked down to the river and stepped across on some stones, and here Matthew told the girls to draw something that is human-related in the park, a human presence in nature. I thought this funny as what I saw was in fact all human presence. The girls drew the sculpture, the table and chairs, the bridge, and some drew the McDonald' s which is located within the park, just a ways down it.

I learned what experiential learning through the eyes of Singaporean students looked like. It was fantastic! We did water quality experiments, wild life assessments, learned about the historic importance of the location, as well as the science of the site and how it was created. The students were in the park, touching the water, breathing the fresh air, and staying hydrated all while the sun was beating down on us that afternoon. Shade was not a problem though, and the group of girls from St. Theresa' s Convent enjoyed the activities. The lessons always start with the Singapore water story that by now is all too well known and was touched upon earlier. Students also learn

about the structures of the parks and its features and behave differently from how they would typically, probably due to a stricter set of rules they have to follow from the school whenever they are out on field trips.

Just like at every Learning Trail field trip, the parents of some of the girls were with us learning along the way, and surprised at what they saw. For most of the girls and parents on the trip, Bishan–Ang Mo kio was a park they had never seen. Though the park is large in size, it' s surrounded by HDBs¹⁴ in a very residential area of the island. What the parents did recall was a canal, cement bottom and not all that exciting, which this park had been transformed from. And Mr. Wong, along with one of the teachers on the field trip, Mrs. Poh, both remarked on what the park had been like before it had been turned into a concrete slab. Though there has always been a stream that ran through this park, it actually used to be a cemetery¹⁵. This history seems to be almost lost as the young students and residents of the area engage with the park solely as the ABC Water' s Project that they now see, yet

¹⁴ Housing Development Board. It is the colloquial name for the public housing a majority of Singaporeans enjoy.

¹⁵ There is an extensive scholarly literature and on-line activism on cemeteries and urban planning in Singapore.

See (Yang, Siannah's final undergraduate Earth Science and Geography Department Thesis titled *(De)Colonizing Bukit Brown: A Struggle over National Identity & Citizenship in Singapore*;

Yeoh, B. S. A. (1991). "The Control of 'Sacred' Space: Conflicts over the Chinese Burial Grounds in Colonial Singapore, 1880-1930." *Singapore: Journal of Southeast Asian Studies* 22(2), 282-311.;

Tan B. H. and Yeoh, B. S. A. (1995). "The Politics of Space: Changing Discourses on Chinese Burial Grounds in Post-War Singapore." *Singapore: Journal of Historical Geography* 21(2), 184-201.

Chong, T. (2014). "Bukit Brown Municipal Cemetery: Contesting Imaginations of the Good Life in Singapore" from *Worlding Multiculturalisms: The Politics of Inter-Asian Dwelling*. Institute of Southeast Asian Studies, 161-182.

generationally, the park has had three very different faces. Mrs. Poh was not shy in commenting to her students about how the Singaporean government, due to the need for fresh water, mandated that the cemetery be exhumed and the stream turned into a water canal. Yet now, only the beginning and the end of the canal exist as concrete slabs, a testament to what it looked like before you enter the lush, green landscape that Bishan–Ang Mo kio now is.

Top-Down Forces

As I made my way through the beautiful Bishan–Ang Mo Kio Park, with a crystal clear creek running through it, fish swimming at the bottom, green grasses and shady trees, I saw something in the distance: golden arches that made me question where exactly I was. It was a McDonald' s. I wondered what a McDonald' s could possibly be doing at a public 'natural' park? Well, once this question was on my mind, I couldn' t get it out. When the kids drew it as part of the natural landscape, I began to think about the use of space and the many definitions of conservation. The McDonald' s can exist inside of a natural park in Singapore because it provides an essential part of the visiting experience for many parents. For them, being able to come to a park that is on the other side of the island and have an easy source of food available is important, as the nearest MRT station is a few blocks away and

the nearest Hawker Center¹⁶ even further still. The LT guides provided the most interesting response. Wearing their PUB ABC Water's Project t-shirts they remarked on how distasteful it was to have a McDonald's at the park. Yet all of the elements of the park, down to the specific placement of the certain plant species near the water, were carefully planned by the PUB and the Singaporean Government. How did McDonald's secure a spot in the park is still unknown to me, but its presence is highlighted by the lack of a Hawker center, which creates an image of a park distinctly Western.

The final thing I would like to mention in this section on Singapore is that environmental education happens within the concept of the "Garden City." This has been a recent development as of the summer 2016 Singapore Water Week, as for many years it has been known as a city in a garden, rhetoric which has its origins with the greening campaigns of the 1980s led by LKY and the PAP. (Clifford, 2015; Yew, 2000) These terms are used to create national discourse around sustainability and livability. In an interview with German landscape architect and artist Prof. Herbert Dreiseitl published in Urban Solutions February 2016, Singapore is described as one of the cities at the forefront of sustainable cityscapes. Yet the word 'conservation' does not make a single appearance in Urban Solutions. It is also remarkably missing

¹⁶ Meaning 'cooked food' center, this is where many Singaporeans meet to have a quick bite to eat for any meal of the day and night.

from LKY's *From Third World to First*. I don't find this to be a coincidence at all though, as Singapore has defined itself as a nation from a historical point when it was already an established entrepot. The nation state uses rhetoric which paints an image of a restored Singapore, a Singapore which is being taken care of, which was maltreated, and now is becoming 'resilient', 'green', and 'sustainable', all things which it wasn't prior to its independence.

Singapore has created many programs, such as the ABC Waters Program, in order to construct itself as one of the most livable cities in the world; a definition it built through time. From protecting the dams with military seriousness to inviting its citizens to kayak and partake in leisurely activities close to them, there was a policy shift in the 90's which changed Singaporean conceptions of the Environment. (Yew, 2000) And now this unique use of space, combined with education, spells out ways in which the Singaporean people can have a direct link to conservation, preservation, and greening. The new motto of the PUB is explicit in using conservation, but for a young Singapore which declared independence from a country which provides water to it, didn't have infrastructure, and very few other natural resources, it makes sense why they wouldn't have used it back then. The goal was to be green and sustainable like other 'modern' / 'Western' nations, and

not conservation, which could have been conflated by Singaporeans as a 'no touch' kind of conservation, unfavorable in the eyes of a majority population living with little access to fresh water. Now though, The Urban Redevelopment Authority even has an ongoing program where they reach out to local residents and ask about what and how they would like to see their neighborhoods renovated, giving local citizens a stake in the conversation about conservation.

So from a complicated history full of struggle, to a metropolitan city which can accommodate the living necessities of its over 5 million people, Singapore has had a history intertwined with conservation, yet hasn't publicly named it until the PUB Mission statement. So the discourses of conservation have had to evolve into the rhetoric Singaporeans use. Now, conversations like the one our fictional Annie Chan has with her friends on Facebook are common, one where the accomplishments are celebrated. The government (Top-Down) having shifted the rhetoric of development from one about the creation of the nation, to one which is trying to maintain and grow what it has accomplished today, makes Conservation begin to make sense as a tool for having people recognize what has been accomplished historically and that there is still much to be done.

Australia

A Rough Conservation History

In order to have a rainforest she can come back to as an adult, conservation projects in the form of the UNESCO World Heritage Listing came into effect in the land which Dot called home. The entire swath of land that is the Wet Tropics World Heritage area was cleared of sedentary communities. (Clarke Interview, 2016) When this happened, there was a host of people, with no homes, no idea of where to go, and no other marketable skills other than working in the logging and forestry industry. Efforts were taken in order to give these 3rd, 4th, sometimes 5th generation loggers new jobs, including re-forestry efforts, working in large government sponsored greenhouses, and other forestry related work; but not enough was done for the dislocated families. Some fared better than others. If you were lucky, like our fictional Dot's family, you moved south to a city center, if not, you lost your job, livelihood, ability to provide a living for your family. This is not an isolated event of people being displaced due to conservation efforts; it still happens all over Australia and the consequences can be massive.

Today, the Wet Tropics is managed by the Wet Tropics Management Authority (WTMA), which runs any and all connections with the protected area of rainforest as well as stops anyone attempting to buy land within or getting permission to do large scale agroforestry or mining work. During my time with

WTMA, I analyzed environmental education efforts run both by WTMA and by community programs for students ages 8–15 which emphasize a thorough understanding of the Wet Tropics as well as the Great Barrier Reef. However, I focused on efforts made towards teaching conservation about the Wet Tropics.

The three particular experiences described below are poignant examples of successful Environmental Education programs in the region of Cairns, Queensland, Australia, actively working to create a more aware student base when it comes to issues and topics relating to the health and wellbeing of the Wet Tropics. The three programs which I visited and describe below were first introduced to schools as solo ventures. Now they have evolved; one has been highly successful over the years in creating change within the greater community (Holloway' s Beach). Detailed accounts are provided to better comprehend from the interviewees' perspective the work they' ve had to do and how much that has paid off. WTMA was looking into the best ways to support conservation education in the region, so I attended these three conservation education programs to get a better idea of what WTMA can do for the region; a region which they are contractually obligated to provide education about due to the UNESCO World Heritage Treaty.

Lake Barrine Field Trip

On Friday 18 November 2016, Lake Barrine and Barrine Park hosted an environmentally focused field trip for the students from Trinity Anglican

School. The children ranged from third to sixth grade and all had to write a letter saying why they should be brought on the trip. These 40 or so dedicated students made a special effort to apply and got to come on this amazing field trip. There were two main teachers as well as a few parents chaperoning the students. The entire day was structured very well and the students had an amazing time from all of the screaming, laughing, and chatting they had amongst themselves and with me. The information being taught was not only critical for their understanding of what rainforests actually are, but the hands-on component made them feel part of the rainforest.

The first part consisted of talking about Lake Barrine and the ecosystem around it, as well as how important this lake has been historically for natural rainforest preservation. The lake is not only very old but also has an extent of rainforest that was never logged due to people in the 1920s recognizing the environmental value of the area. The students were all very interested and right away were asking many questions of Geoff Onus who came from the Rainforest Reserves to give them a short presentation on the ecosystem and the geology of the landscape. From the eels to the ducks and even the invasive species of fish in the lake, the students came prepared with questions and wanted to know more about what they saw in and around the lake. We moved into the hotel next to the lake to get an understanding, through a

map and diagram, of how geological forces created Lake Barrine and the nearby Lake Eacham.

Once we were done here the school group travelled to Barrine Park, a farm which belongs to Carolyn and Phil Emms who established Rainforest Reserves Australia, a non-profit organisation established to promote cassowary conservation. When there, they split up into three groups and did rotations at the rainforest tree nursery and greenhouse, the cattle yard, and a seed preparation station on the veranda. At the greenhouse they got to plant their own seeds and pot their own trees to take home and grow. They also got to see all of the sprouting forest trees. At the cattle yard, they were taught about the realities of the mass meat industry and got to be up close with the young calves. And then in the house they helped to peel the flesh off rainforest fruits to get them ready to be planted in the green house. Then they all did lunch followed by two presentations done by Campbell Clark from WTMA on rainforest structure and on cassowaries. During this time, the kids got to try on the cassowary suits that WTMA owns and they all had a blast, not to mention, they were all eager to learn more about the cassowary, other cassowary conservation projects, and its rainforest home and foods.

I went with Campbell specifically to really observe an example of what conservation Education can look like when the Wet Tropics Management Authority is involved. First, you have to get up to the rainforest. It' s difficult to

teach about something so complex without actually seeing it and experiencing it for yourself. Most of these kids had already been up to the Tablelands and most had ventured into the rainforest. This specific program was very well executed, the kids had the type of hands on experience all of the interviewees had told me about being critical for capturing the interest in students and sowing a desire to help the rainforest, not to mention it was an overall fun day. The kids were happy to have their hands in the soil, stick their hands in dirty seed water, and be able to feed cows and find cow horns to take home as mementos.

From talking to the parents, I learned there used to be farms where kids could pet farm animals up there, but no longer. The kids were more than happy to get in the pen with the calves. With the program as a whole, but definitely with Phil who did the farm part of the presentation, the language and ideas discussed were not attempted to be more 'kid friendly' . It was not 'elevated' vocabulary, but it was at a level where the kids felt as if they were being treated as older and more responsible adults. This was accomplished due to the level of content the kids were being introduced to, about mass deforestation and the mass cattle industry, topics that are much more advanced for elementary students. Many of the kids were very pleased with this and listened more attentively.

At the end of the day the kids left with a letter from Carolyn addressed to their parents to help support the non-profit organization, a great strategy for advertising. Kids often dictate where the money of their parents goes, and Carolyn is appealing to that by pleading the kids for help to continue to expand and grow the forest in her property. This was the first time this program had been done and hopefully more schools take advantage of this opportunity. Carolyn, Phil, and everyone else who helped did an amazing job, not just educating, but making the day a fantastic experience for the kids.

Kids Teaching Kids at Redlynch State College

At Redlynch State College, Irna Spigariol is also leading the way for kids to have a positive, experiential, and rewarding experience with the environment. However, her approach is not just to teach about the environment, but rather a holistic approach to education to create a well-rounded student with critical life skills. She is the Sustainability Coordinator at Redlynch State College, the only school in Cairns, Queensland, Australia that has such a dedicated hired position. When she first arrived at Redlynch, the principal already had an interest in teaching sustainability and conservation, and she introduced this program from the state of Victoria, AU titled Kids Teaching Kids that has worked very well.

Kids teaching kids, which is a Victorian program, is where I have year 6 kids mentoring years 3 kids. They work together in little groups of eight where they choose an environmental issue in our area, our local area, and

then they work on a solution together. So one of the issues was, how can we attract more native birds to the school, so how can we do that? I'm just there as a facilitator. They came to the understanding that they needed to research what birds were actually here. They have to come to those understandings themselves. I can push them in the right direction, but ideally they really need to have an inquiry, and they need to solve that. And with that I teach them everything from how to make phone calls, just practical life skills that children don't have, how to write a letter. So in the end they were able to contact Lisa O' Mara from Tree force who then worked with them and the Cairns Regional Council donated the plants for them, which they've planted out at the back there, and so they've seen the birds actually come. They've seen the project come to fruition. So it's all about the agency for the child, so they see that. They can make a difference, it doesn't matter how young they are... the older child sort of scaffolds the younger child in their zone of proximal development. Or it could be the other way around. With the Holloways program we choose the top 15 kids in Cairns to work on it, which in a life where you look at it, it's not equitable. Because some people just, they've got a lot of passion for the environment but they might not be scientifically academic. So with these children, it doesn't matter whether they're highly academic, whether they're special needs children, there's not cultural consideration put into it. So it's four children year 5 matching with four children year 3... What I found out is that it brought up their academic skills, the older groups because they had that responsibility, and the younger group because they are aiming to be at equilibrium with that older age group. So you keep jumping higher and higher, because the metalanguage that is being used by older children, those younger children start using that. Say if an older child in that group has bad spelling, they shape up, because they are a role model, they are teaching that younger child and they learn those presentation skills and they have to coach those younger children. It's basically you're adopting that child. Every term I have like 80 children, working together on that project. They have to reflect on their own personal growth, they reflect on their strengths and weaknesses.

(Spigariol. Pers. Int., 2016)

This way of teaching kids allows for the growth and development of a larger population of kids than targeted programs. One of Irna's main concerns with Environmental Education is that it is hard for teachers to really incorporate more environmental resources into their curriculums. "They have two hours of science and they [teachers] would not do more than two hours research, per week of planning; because for a science lesson, you need to get

it all organized.” (Spigariol. Per. Int., 2016) However, Redlynch is quite the exception among public schools teaching Environmental Education, due to their principle and the dedication Irna has to her program, working 13 or 14 hour days and only getting paid for five hours. “But because this school values sustainability enough to pay someone for three days, I’ m able to do that.” (Spigariol. Per. Int., 2016)

Redlynch is an amazing example of what can be done here in Cairns, but unfortunately it is so hard to do for a variety of reasons. Irna has found a niche here where her passion can be transferred to the kids and the children are receptive to that. During our interview we had many come and interrupt us to turn a project in for her, all very respectful and wanting to see her. But all of this work takes a toll on the individual, and this is only one of many environmentally centered activities that fill Irna’ s calendar regularly.

Holloway’s Beach Program

Helen Underwood and Sandra Charlton are the co-creators of the *Cairns District Schools Science and Sustainability Enrichment Program*, which connects 15 lucky 5th graders to a yearlong guided research opportunity. Helen and Sandra began this program at Gordonvale and then later brought it to Holloway’ s Environmental Centre who agreed to fund the program.

These kids are a group of gifted and talented students from across Cairns schools. So this program was developed off a program that Sandra and I developed at Gordonvale State School. We just want the top kids...the schools nominate them, we set down criteria. They have to have academic excellence, excellent behaviour¹⁷, complete their homework, their effort in class has to be excellent, because you can have academic excellence and you can have them getting Cs and Ds on their report cards for behaviour and effort...we want kids who are pretty rigid on our selection. They do the science test and then the top 15 get in. Sandra is the facilitator of the program...five schools participating. A key teacher is appointed. Sandra is the liaison, provides resources for teachers, and organizes external resources. We find it a successful process.

(Underwood. Per. Int., 2016)

The kids engage in rigorous environmental work, Sandra even describing it to be at the level of the James Cook University program.

...so what happens is at the start of the year is we do a three day immersion excursion... one Sunday we take them over to Green island, it's an island right out of Cairns, it's a very pristine island. ...We talk about the pristine environment, we do a beach clean-up, then we collate, separate all the marine debris and categorize it, count it, collate it, look at its source, determine whether it's rubbish left by tourists on the island or if it is marine debris, we look at the source of origin, we find cans that have come from Asia. The kids do glass bottom boats so the kids can see the fish and the reef, we talk about the ecosystem, and then the next day the kids come to the centre here and we do a bus tour of the catchment here, of the Baron River. So we go up to Baron Gorge and we stop along the way and Phil Laycock, he does the tour with the kids, we stop at different points and he talks about the human impact, so we stop at areas of erosion, weed infestation, and we do that the whole way down. We do water quality testing...

Frank: And this is beyond a level of what a regular 5th grader would be getting taught at school?

Yes, absolutely, People who we work with out at James Cook University say that they are working at a university science application level. So once we get down to the mouth of the river, we then have tinnies, and the students do the same trip up the river on the boat, looking at the human impact on the river, from the rivers perspective, on the boat. And then we

¹⁷ Some of the spellings for the Australia Interviews are transcribed in the ways in which the interviewees would have spelled it out, an English closer to British conventions than USian ones.

come back here and a week later we start developing their project. Basically, the two days are to let them observe the Baron River Catchment, they can compare the river with the reef, water quality and all of that. Their task is to identify an issue, and environmental issue that stood out to them, and then they propose a solution to it.

(Underwood. Per. Int., 2016)

This proposed solution then gets trimmed and guided by Helen and Sandra during a full year of study and research, where the kids develop their own scientific project, their own presentation, and then have an event where Council members, scientists, and their parents and teachers attend. The kids present their project and then get further feedback from the panel of scientists. The program is more than effective at teaching Environmental issues, conservation, and sustainability to these kids. Marcia Thorne, a recent PhD student at James Cook University studying environmental pedagogy uses the concept of ‘Biophilic tendencies¹⁸’ to describe the kinds of lessons programs such as this one do for kids. Rachel Sellers, a mother of two boys and an environmental teacher to her kids, has even said that the two kids who are in the program who are friends with her son have begun to influence him and have even called her out on her use of plastic shopping bags.

(Sellers. Per. Int., 2016) The program has proved its effectiveness beyond the everyday situations. Helen tells the story of one of her first students and the impact she had on the Regional Council.

¹⁸ Thorne, Marcia. "Learning for Stewardship in the Anthropocene: A Study with Young Adolescents in the Wet Tropics." *eTropic: electronic journal of studies in the tropics* 14, no. 1 (2016). For a more comprehensive conversation around Biophilia and biophilic tendencies. The term refers to fostering love for the natural world.

Well, she was sort of concerned about the dumping of batteries and things like that, and leaching into the water. So that was the start of it. What she did was at the school she had a witness and she had a battery collection, collected all of these batteries, and she had something like 3,700 something, and she went to the dump with her parents, and asked can we recycle batteries here, and they said no. And the way she said it, she said, "Can I recycle batteries, and their response blew me away, they said no, and then he asked me 'how many batteries have you got?' and she said, "I have 3,768" or whatever the number was, and it blew him away. Anyway, she told this story at the council, and how she found it so disappointed, and they asked her, 'where are the batteries now?' and she says, 'still in the back of my mom's car. And as a result of that, what she has looked into, the council are in the process of a creating a battery recycling facility.

(Underwood. Per. Int., 2016)

And this is just one example of the active change these 5th graders are having, not just in their school and with their peers, but with their community. Conservation in Cairns is not just about maintaining a pristine Wet Tropics; in fact many people still go on wild parties and leave trash everywhere in the lake parks, attracting many bush turkeys. No, conservation in Cairns is more concerned with restoration and upkeep of the area which is already nationally and internationally protected. The history of the Wet Tropics is wrought with strife, but nowadays, the chief concern is in repairing the damage the forgotten families of loggers did to the rainforest in order to attract more tourists and local residents to the rainforest, with responsible practices in tow and biophilic tendencies for the rainforest.

Guatemala

An Oppressive Colonial History

With a history of oppression from colonial powers, Indigenous communities have suffered and their cultures forcibly changed in Guatemala. This includes many traditions of forest care and maintenance which have come to a forced end due to the plans of usage the state of Guatemala has for the forests, plans that don't support Indigenous modes of conservation. With imposed Christianity, Indigenous communities were seen with disdain for their own religious beliefs, and persecuted. (Utting, 1993) Indigenous traditions were historically tied to land management practices, many of which we could recognize today as conservation practices that prevented exploitation of valuable rainforest and forest woods, trees, among other resources. But today, due to the forced migration out of these mountain regions and the demand for wood in large population centers, those people who did have a culture of conservation are gone.

During colonial times, lands in Latin America were seen as great frontiers of exploration, lands to be tamed for farming and animal husbandry which could produce a profit for the crown of Spain. In *Frontiers: Histories of Civil Society and Nature* by Michael R. Redclift, we find that these frontiers have always existed in relation to the centers of European

settlements. This positions Indigenous peoples as part of the frontier which needed to be tamed and conquered. Peter Utting, in *Trees, People and Power*, describes the ways that Indigenous Guatemalans' way of life was seen as a challenge to development that the whole country needed to face. In the 1980s, before the civil war and the massacre of hundreds of Indigenous peoples, they were the majority population, one of very few majority Indigenous countries in the world. Their existence was still seen as an obstacle, especially when it came to development schemes. Their ways of protecting and caring for ecosystems were much too different from the cattle ranches most of the European descendants at the time wanted to transform the frontiers into. And from personal experience, this has not changed much. (Grandin, 2005)

Everyday Struggles for Displaced Communities

Utting (1993) tells the story of the ecological disturbance that incursion of Indigenous lands by European descendants has had on ecosystem as well as the Indigenous populations which rely on these ecosystems for medicinal plants, sources of shelter, food, and supplementary income. Plantation schemes have been no different, perhaps even worse as they rely heavily on cheap labor to produce their crops. Coffee plantations in particular have played a major role in the subjugation of Indigenous peoples. Many Maya communities have no other labor options but to become day workers in

these plantations, and the landed elite use money to fight for control of lands which should belong to Indigenous peoples. Particularly from the highlands, Maya men and women come down to the valleys to help grow and harvest monocrops, many times getting paid around US\$13 for a full day of work. I' ve seen this. My aunt' s husband, Don Edgar, is one of these landed elite farmers. He employs over a hundred Indigenous peoples and at the end of the 13 or 14 hour day picking tomatoes or onions, he has them all line up and pays them with a single Q100 bill, which is the equivalent of US\$13.66. This ritual takes places every day after a long day of hard work.

Indigenous communities are ignored by state and federal police when it comes to concerns for the environment and the wellbeing of their communities as their way of relating to capitalism is not taken seriously by the cops and government who want economic and state development at any cost, including cutting down and laying waste the determined work Indigenous communities had been doing with forests for many years. (Utting, 1993) These clashes are also religiously fueled as mestizo or European descendants, who are mostly Spanish speakers and Catholic / Evangelical Christians. Yet Indigenous populations maintain their beliefs from before the incursion of Western religions. Even when given the opportunity to buy land and create profitable farms which sell produce in Mexican, Honduran, and Salvadoran markets, they are still

undermined by much larger farms and lack of resources. I remember the way Don Edgar romanticized the lives of the Indigenous people who worked for him, often saying things like “Solo necesitan dinero para tortillas y frijoles, lo demas se lo toman”¹⁹ and “les pago lo que les pago porque están felices haci. Si tuvieran más dinero comprarían teles, y no quieren vivir haci”²⁰. He spoke for them and mocked their living situation and lifestyle. I tell this small anecdote because of the clear example of racism it portrays, and yet, in the point of view of my cousin, he and his father are helping Indigenous communities by only employing them and not Ladinos, yet underlying this ‘good deed’ is the sad fact that Ladinos have the privilege to demand higher wages. Mayan peoples in a white dominated agricultural sphere can barely get a job due to the outright racism of the farmers and ranchers.

The biggest irony of all of this is that the land these white ranchers are farming really belongs to the workers they are hiring. These landed elites only came into the land due to the land reforms their grandparents and parents pushed for in the 1940s and 1950s and again during the 1960s. These reforms stripped frontier lands from Indigenous peoples and gave it to white, european descendant men who would clear the land and use it for plantations or cattle raising. This was all explained to me by my grandfather, as his own

¹⁹ ‘They only need money for tortillas and beans, the rest they would drink’

²⁰ ‘I pay them what I pay them because they are happy like this. If I paid them more they would buy TVs and they don’t want to live like this.’

grandfather was one of the people who initially benefited from these land reforms. While I know it from memory, Greg Grandin calls it 'Coercive Development', and I couldn't agree more with this naming. "This model of coercive development intensified forms of colonial exploitation, racism, and authoritarianism and militarized the republican state, which devoted itself to enforcing labor servitude (Grandin, 2005). The Instruction of Great Catastrophe Truth Commissions Natural Histories and State tells this story from a historical lens which captures the struggle Maya communities working in a white agricultural context. However, it fails to capture Don Edgar's racist romanticized notions of the ways Maya people live, or the naivety of my cousin who believes he is doing good when he can't even acknowledge his own privilege in the entire scheme. The real examples are missing from his account.

The Case of Totonicapán

The highlands of Guatemala are a rich biological spot, not just for wildlife, but also for plant life, including many conifer species which don't grow anywhere else, which makes these species very valuable, in many ways other than the economic one. When Thomas V. Veblen, whose research was funded by UC Berkeley and was coming from la Escuela Ingenieria Forestal, Universidad de Chile, Valdivia, Chile, first presented his research, he never could have

predicted the dramatic change his research would speed up in the highlands of Guatemala. In 1975, Veblen went to the highlands of Guatemala to study the diversity of pine species growing in the area around Totonicapán, Guatemala. He discovered that due to wood demand from the growing city in the valley of the mountains, the forest in the highlands was being cut down at an increasingly faster rate. At the time, Veblen was aware of the consequences of highland deforestation, the washing of top soils, and the landslides which could result from the mountains being left bare, because neighboring mountains in Guatemala had already been experiencing this for a number of years. Veblen points out those royal decrees in mid 1600s which may have been the first conservation policies enacted in Guatemala. They prohibited the highland Maya people around Antigua Guatemala from cutting down trees and tilling the land because during heavy rains the soils would wash down and clog the streets of the then capital city. Even the first of such conservation policies for Guatemala had racial frictions that disproportionately affected Indigenous peoples (Veblen, 1976). But the forest of Totonicapán was not being tapped into because those others had been depleted and the ones from Totonicapán had been too far to transport. With tractors and trucks, distance was not as much an issue, and increased demand meant prices for wood were rising. Veblen proposed that these forests needed to be preserved due to their unrecognized potential as plantation species. Why this is interesting is because Veblen

recognized the role Maya people played in protecting these forests. He states “Today; encroachment by cultivators on the forests of Totonicapán is prevented by the constant vigilance of forest wardens (guardabosques) selected by the Indian communities.” (Veblen, 1976) But if these guardabosques already existed as part of an effort of Maya communities to protect the forest, why then propose another course of action instead of supporting this one? Veblen recognizes the biological diversity of the forests here and so pushes seed and pollen collection bank programs and ex situ conservation plots of trees. But I’ m left with this question, why propose other solutions when there were clear efforts by Maya communities stopping deforestation of the region?

Maya communities who were preserving these forests were not preserving with the intent to never cut down any trees at all. These forests were major sources of firewood and other natural resources which were used locally, and when sold, the profits came back to the community, never to the individual. (Utting, 1993) They understood the functions trees were playing in the soils of the mountains, and so when they did cut one to send to a mill and earn money for the village, they would plant more. Veblen, on the other hand, wanted to collect the seeds and pollen of these plants to store and preserve in that way, but also wants conservation plots to be started outside of the mountain region. Under the goal of conservation I believe he hid plantation

scheme ideas in order to return a profit, either for himself or for plantation companies. The reason why these pines are valuable in his eyes is not because of conservation for natural habit and such, if that were the case he would have pushed for preservation schemes that removed people from their land as was already being done in places such as Peten, Guatemala. His definition of conservation lines up well with Maya communities, but if he were to support their efforts, there goes the funding to do his research, as those forest communities would only be accessible to the Maya communities caring for them. But he can continue his research, as well as secure funding from many companies abroad, if he implements his plantation idea. That's where his research leads and this is the reason he is concerned with the disappearance of the pines, if they are cut down then so are the many potentially profitable plantation species he has been describing. I traced historically the story of Tonicapán; Utting follows up on it and knows about Veblen's research in the highlands.

In 1993, when Utting followed up with these forests, he concludes that rates of deforestation have dramatically increased, populations have increased, and overall standard of living has decreased. Available income is less and less, and stopping Maya forest protection has left the forest without any protections as well as served to disillusion local communities from wanting to replant, reseed, or invest time in conserving the forests. This is

due to the ways forests were being harvested after the industrial booms in the city centers and demand for specific pine tree species' woods, which Veblen had a hand in creating a demand for. This degradation of land management practices and lives of the Maya communities from the highlands occurred in less than 20 years. Utting points to the land tenure system as being responsible for the breakdown of the traditions, which brings us back to the history of white, european descendant farmers pushing for land reform and getting federal and department governments to break up the large swaths of land that were under the protection of Indigenous communities. Veblen helped the guardabosques by acknowledging their importance in his study, but also helped create "...endogenous and exogenous pressures on forest resources. (Utting, 1993)

These pressures came with the power to change the value of forests, allowing them to be imagined within a new capitalist framework; one which opened up the forests to global forces which demanded natural resources. Veblen wanted to help conserve what he saw as a valuable resource, the diversity of pines in the highland forests of Guatemala, yet by pointing to the forest and bringing it into national and international conservation discourse, it only sped up the processes of deforestation as people from city centers wanted these resources, resources which had never had global capital

value. “Rather than being an essential player in the life process, the forest was reduced to a material object, subordinate to the short-term needs of humankind.” (Utting, 1993) I’ m not blaming Veblen for the environmental degradation of the highlands in Totonicapán; rather I’ m showing the complexity that simple actions can have.

The Maya Biosphere Reserve

If we move to the example of conservation in Guatemala which has been more successful we have to travel north to the department of Petén. Established in 1990, the Maya Biosphere Reserve (MBR) is the first international addition to the Network of Biosphere Reserves by Guatemala. (Gretzinger, 1998) There were an estimated 30,000 people living within the boundaries of the land reserve, which created an interesting dilemma: how to preserve the forest without forcibly removing the local Maya and Ladinx residents? When it was first created the MBR was mostly run by USian NGOs. Steven P. Gretzinger writes on these initial challenges and one of the major solutions that came from it. In the form of Community Forest Concessions, the communities within the MBR were given a stake in the ways in which the MBR would be conserved. The population of the reserve was rapidly increasing at the time due to immigration, so this was not a popular move. However, it spelled out positive changes for people living within as they were not kicked

out of their lands and were still allowed to partake in harvesting the resources which they had been doing before the policy came into effect. From harvesting chicle, allspice, and xate, to harvesting cedar and other soft woods important for artisanal furniture and products, these practices were already being done in methods which conservationists from NGOs in USA and elsewhere abroad, today, would deem to be sustainable. In fact, it was largely the immigrants who were coming in who didn't understand how forest management worked that were destroying the forests within the park. This noticing had major impacts for giving land concessions to communities within the MBR as well as make it very difficult for that land to be taken from them, bought and sold by anyone, or deforested for cattle ranching (Gretzinger, 1998).

It is these examples which can help complicate the histories of conservation as schemes not all of which were positive for the local peoples or the forests intended for protection. The effect of these examples is far reaching through time and it compromises and changes the lives of those who were not necessarily part of global capitalist forces. But within, a note of hope as by complicating conservation we also help complicate and understand global forces as opportunities for new imaginings, where we can examine the ropes of this entanglement once more and work to find better alternatives.

Understanding Conservation through Social Theory

Conservation must be discussed within a theoretical framework which understands the history of the concept itself as well as its meanings within specific cultural and historical places. I hope the above three ethnographic cases have demonstrated an understanding of conservation contextually within each of the regions. In this chapter, we look at conservation across the globe and historically. Here I show that conservation has a sinister side that must also be discussed: a history of upholding empire. On the other hand, it also has a history of allying with critics of empires. Conservation's colonial and post-colonial history illuminates where its uses have been responsible for both the support of people, Indigenous or otherwise, to increase quality of life, or the exact opposite.²¹²² With this chapter, I hope to capture the complexity of conservation and myriad of directions which a conversation among theorists can go.

Conservation has evolved as a concept beyond any single definition, if it ever had one. No longer are we discussing and debating whether we leave and never touch, rather one thing all the theorists I engaged with agree on is that we must use the environmental resources we have available, whether it is

²¹ *Nature's New Deal* by Neil M. Maher for a discussion on some of the history of conservation in the United States.

²² *Green Imperialism* by Richard Grove for a colonial history of Conservation. The first conservation policies around the world had to do with the protection of forests which the British Empire, Dutch, and others, required in order to have enough wood for ship building.

to develop countries internally (Leff), to create productive rivalries which promote and accelerate change (Tsing), to imagine new possibilities of what we can do with our bio-scape (Appadurai), or to completely change, re-define, and re-position ourselves within the natural environment (Latour). All of these theorists of nature agree that humans have an immeasurable role in ideological and practical matters which arise out of the greater bio-sphere in today's Anthropocene, and with which we must contend with in conservation efforts.

When engaging with Appadurai, Tsing, Leff, and Latour along the lines of discourse, they are not arguing exactly about the same thing, but I bring them together in this chapter because they work well to raise important questions and support each other. Conservation, regardless of whether it is named this or not, is happening all over the world, but it doesn't matter whether WTMA decides to use conservation instead of National Heritage, or the PUB in Singapore wants to incorporate enjoyment into their concept of conservation, the fact of the matter is that conservation is happening, and that it comes with its own set of complications, which these four theorists tackle and discuss quite well.

Leff

In his book *Green Production— toward an Environmental Rationality*, Enrique Leff, a Mexican Political Economist and Marxist, unravels the ways conservation has influenced third world nations, describing how a chain of

resource extraction which moves from the global south to the north perpetuates cycles of environmental destruction. Leff describes the ways technological innovations are not ways to improve nations such as Guatemala, but rather keep them productive enough for the global north to extract and consume with no investment back into the lands and people who provide the labour. Leff seeks to bring nature and economics together, to have contemporary schools of economics realize that conservation of nature complicates their theories of value. The way contemporary schools conceptualize the environment only leads to disaster for the environment. “In these conceptual paradigms the ecological conditions of sustainable production and environmental degradation appear as externalities to the economic system.” (Leff, 1995) But if we assume conservation to be part of these economic paradigms, we begin to get a conservation which could be economically informed, and vice versa, to make conservation projects better able to take root and show that they can be economically fruitful.

Appadurai

Appadurai notes that, regarding conservation efforts, “Globalism is not the story of homogenization” in *Modernity at Large*. (1996) Conservation has become a global phenomenon but if it ever started out as a single idea, it no longer is. The discourse of conservation is location specific, driven by the

ideoscape²³ and the bioscape of groups of people. Appadurai' s scapes are not confined in single national borders, nor are they necessarily global in spread. Appadurai would find conservation working within these scapes, a force capable of mobilizing the collective imaginations of people from the ground up, or perhaps for more sinister purposes from the Top-Down. Regardless, conservation operates within both cases. Appadurai would require us to trace the ethnographic and historical extent of the flow of the conservation ideoscape and/or bioscape.

Further, Appadurai is especially interested in the imaginative or cultural life of people in capitalism. I can hear him talking about the role which consumption plays in the way we imagine conservation. "...consumption becomes a temporal marker of leisure, of time away from work." (Appadurai, 1996) Conservation inherently deals with discourse about the consumption of our natural resources and how we should mediate that. Appadurai would see the conservation of natural resources as the quintessential consumption, the ultimate time away from work, to have a resource and not have to derive wealth from it. Conservation, when talking preservation in particular means this. But that' s the ideal. The reality is that we as governments, societies, and individuals want to and need to consume it in one way or form. And it is in doing so, that we generate new complexities to the term conservation.

²³ One of Appadurai's five initial dimensions of cultural flow

Appadurai is committed to seeing how complex institutions and understandings hold sway in different places, across boundaries, but never necessarily global, nor spreading from West to the rest.

Tsing

For Tsing, conservation is involved at varying degrees in global systems which she captures well in her book *Friction An ethnography of Global Connections*. Her book explores how specific examples of environmental disasters, conservation successes, and everything in between, is a consequence of global encounters across difference. (Tsing, 2005) In order to achieve a manageable scale, Tsing decided “...to focus on zones of awkward engagement, where words mean something different across a divide even as people agree to speak. These zones of cultural friction are transient; they arise out of encounters and intersections.” (Tsing, 2005) And here is where we find conservation in her work. Conservation, as it has been used in the three examples in the previous chapters, is not defined in a particular way until we begin to engage with it in a specific context. Like her discussion on universals, conservation is implicated both in “...imperial schemes to control the world and liberatory mobilizations for justice and empowerment.” (Tsing, 2005) This is the harsh reality for conservation and can be difficult to reconcile. But thinking with Tsing’s concept of friction we can see how it offers a way to understand the various actors within the larger picture of

conservation. Not just knowing conservation as a 'conserving' or preservation process, but also complicating it with local, state, and international stakeholders.

Latour

In his *Politics of Nature*, Latour explores the potential to learn from Political Ecology and the problem of the separation of nature from our political lives, particularly in Western society where political systems have their relationship to nature be the base for our political lives. If in the west we use nature to organize our political lives, then conservation projects are naturally a hindrance to the political system, unless they have ulterior motives which work to further support the political system of countries; this is for sure the case with all three of the countries I have visited. This statement holds true for Bottom-Up conservation projects as they can sometimes be seen as rebel projects and often times highly opposed by governments due to the fact the government will only be losing power, not concretizing their control over a particular land area, ideology of people, or system of pedagogy. Latour articulates well with conservation because he creates holes in our systemic understandings of what nature, and by extension, conservation, is. He would agree with conservation because of the way it complicates our relationship to nature, allows for humans to be closer to it, and implicate themselves in nature. But he would also hate conservation because conservation

areas inherently create a bounded region between the natural and the human. He would be in love with the process conservation areas go through in order to be recognized, but would later hate to see people going to these areas and not understand any of the socio-political contexts that went into establishing and up-keeping them. And here is where Latour would see to it that environmental pedagogy established itself well within conservation projects to prevent social ignorance about conservation areas. But I think in the end, he would much rather just not have conservation at all. He would say you would not need it, if the human-nature divide were gone.

Conservation the Word

Conservation, and the terms being used today instead of it, is no longer tied to conservation as preservation. Particularly Tsing would be a proponent for divorcing meanings of conservation away from the no-touch mentality, but I find it hard to imagine she would be for the irradiation of the term conservation completely. The case for using conservation, as opposed to other terms, such as sustainability or greening, is the value it has in conjuring up images and thoughts about nature. Because conservation, as an idea, holds a space in global imaginaries about nature, even if those beliefs and imaginings look totally different. Conservation holds sway as it has been used for so long and the ideas for it have evolved and become so intricate. Tsing uses the dialogical power of conservation to concretize her examples of Friction, as it

is conservation projects which so often create friction between Top-Down actors and Bottom-Up. Latour would actually agree here with Tsing, in that conservation serves the purpose of bringing together so many disparate fields to create a robust picture of why a site should be deemed a site for conservation. However, the rhetoric of conservation fails to capture Latour for it only does part of the job which he wishes to fulfill with his book. ‘ Conservation fails to bring the two houses together’ , he would say, meaning that conservation only allows for bounded regions between nature and humans to exist. Latour wants to expand the definitions of what we consider nature, complicate it by including within it the socio-economic histories of our pasts, but conservation rhetoric stagnates this process. But is the answer using other words then?

If Latour sees conservation as lacking in many ways, then Leff sees it as too full. Leff is arguing for a global economy which takes into account the same socio-historical details which Tsing, Appadurai, and particularly Latour want to incorporate into a more robust theory of nature. The ultimate goal: to inform new conservation projects, create new paradigms for what conservation can look like even if he’s not using the term. But the reasons he doesn’t ever use the term conservation is he finds it all too vague. Leff still operates under the definition of conservation as preservation, and even if he

didn't, there would be inherent problems for the economic theory he is proposing if the resources he is discussing remain unused. This brings us back to his main idea of seeing nature as a resource to be used by humans. He is one for studying the way global economics and systems of excess capital affect people and their work to conserve nature. In the dominating economic models which most countries use today only the excess capital which can be gained from exploitation of natural resources is sought, little regard is given to the different ways nature is valorized in different cultures, the different ways it can be accessed, and the different ways it can be used. And so the rhetoric which is currently being used, as well as the forms of analysis economists employ, are too packed and new rhetoric must be created and new fields must be opened, and that's exactly what Leff does. "The physical and biological processes that support and generate the productivity of natural resources do not determine their transformation into commodities" (Leff; 1995). It is the people whom these products are for that determines their value and their desirability. On top of all of this, Leff argues that the language of his Marxist background can simplify some of the complexity inherent in conservation. Words which he brings into discussion with Marxist theories such as 'sustainable development' nuance the rhetoric in his argument to allow the space for conservation and nature to be complicated and implicate the economy as a powerful force driving environmental degradation.

Conservation from Top-Down vs Bottom-Up

The initial phases of any conservation project allow for an analysis of the intricate relationship between humans and nature. Conservation areas and projects would not be recognized if people would not be able to show the value of certain areas: capital value but also cultural, historical, and social value in the lives of people living in or near these areas. Latour would be a proponent of conservation if this was the full story, but as I keep showing, conservation only gets more complicated the further along you go.

Leff' s use of vocabulary such as “ecodevelopment strategies” is a way to incorporate ideas which come from the Top-Down, but also include those which emerge from the cultural rationality of the community being discussed and take into account the specific ecosystem they operate with. (Leff, 1995) Leff means to change an economic paradigm which focuses his work on change from the Top-Down, particularly in developing nations. However, the powerful Top-Down approach which Leff discusses does not fully inform the agency which Bottom-Up conservation projects have. I' m not saying he dismisses Bottom-Up approaches of conservation, but rather that Leff is more concerned with the project' s tangible results due to his preoccupation with creating an economic theory which will be more applicable in developing nations. The results of Bottom-Up approaches differentiate themselves from those conservation projects of Top-Down actors due to the scale in which they are typically seen– a much

smaller one. But Tsing would reply it is a much fuller, deeper, richer change. Leff would agree with this but argue back to Tsing that comparing a country like Singapore to Guatemala when it comes to the power of their economy is like comparing durian to nances, they are both fruit, but their flavor, texture, and size is totally different. The Singaporean approach to conservation, a more Top-Down one but which concerns itself with the specifics of a Bottom-Up approach, is more to the liking of Leff, whereas Tsing would treat it as another way in which conservation has materialized itself.

For Tsing, conservation is a primary tool for Bottom-Up actors to regain agency, one which clashes and creates frictions with entities at the large and small scales. It is *in* the spaces between imaginings where we can see these frictions. These frictions propel conservation movements, places of conflicts of interest, creating sparks and igniting change. So even if all Top-Down conservation efforts did have sinister intent (which my examples show that they don't) Top-Down conservation efforts are needed to support these productive frictions. Tsing shows the way even those we think at the margins maintain agency due to the flavor of conservation they may be partaking in, one which is culturally specific and stationed within the ethnoscape and bioscape of the region they find themselves in.

Latour would enter this discussion not all too happy. He would vehemently argue that Top-Down approaches to environmental conservation alienate people from the environment creating more destruction and environmental degradation, which is fueled by central governments taking advantage of the land which people were once connected with. After hearing the discussion between Tsing and Leff he would see the following as the reason why we see a reversal of such processes. Government sponsored programs of environmental education as well as land preservation schemes which hurt communities found within are both examples of how Top-Down actors attempt to reverse damages done to the environment in a globalized, climate-concerned world, especially as more and more countries accept the Anthropocene. And here is where conservation begins to acquire a more sinister flavor. However, Latour would exclaim fervently that technologies and a reassessment of land use is how we got to the degraded environment we find ourselves in today. Latour sees a much wider scope to conservation, where different academic fields, communities, biotic factors, and abiotic factors are capable of having power, no longer do we assume the human is more powerful than the tree. Leff would naturally take offense to this as he sees the tree as something to be cared but also derive profit from. Appadurai would come in to settle both Leff and Latour down, as he would side more with Tsing on how conservation projects are used by Bottom-Up actors, but not pick anyone's side.

Appadurai would most closely align with Tsing. However, he would say that the flow of ideas and imaginaries between Top-Down actors and Bottom-Up actors is actually much more fluid than any of the three are making it out to be. Appadurai would say that to think in these opposing streams actually simplifies the ideoscape which operates in the societies of these distinct cultures. The flow of ideas is multi-directional, and although Tsing would agree with this, her argument is contingent on the idea that they will inherently clash or become allies, but that doesn't always have to be the case. Ideas can travel through space and time, and so conservation in the present doesn't have to rely on frictions from the present. Tsing, Leff, and Latour, are all guilty of assuming a linear movement of time. They forget this as well as assume a linear progress of time, which the theme of Top-Down vs. Bottom-Up also assumes. Appadurai would remind them all that conservation, in its multiplicity of definitions which erupt from the multi-directionality of the ideoscape, cannot be contained at all by a bi-directional approach.

Conservation is extant. It's living a complex life with plural definitions and being used by so many actors. It has specific uses for these actors and it's put effectively to use for explicating a large part of what makes up the world around us: nature. The actors which control its usage

cannot be assumed to be linearly thinking, Top-Down or Bottom-Up subjects of an all-consuming (or non-consuming) conservation ideology.

Land Use

In Appadurai, the main concern for his book articulates well with the concept of land conservation and use. For Appadurai, imagination is crucial in the “...emergence of a postcolonial political world.” (Appadurai, 1996) A post-colonial political world relies on the imagination to create a new order; however, this same imagination can also work to reify nation-state projects of land preservation, which create nationalism. Using imagination, the collective reifies projects which support the nation state, and preserve the natural environment. Here is where Latour steps in to say conservation projects, in fact, are detrimental to the acceptance of nature which includes humans as vital parts of it. ‘We are not separate from nature, yet these conservation projects work to keep us separate,’ I can hear him saying. Tsing would then argue back to Latour, explicating how Bottom-Up conservation projects are ways in which people regain agency. By demanding to decide how the natural environment will be used, protesting, and using other bodies to communicate with those who typically make decisions about land use. (Tsing, 2005)

‘Humans are part of the natural environment’ , Tsing would say. Even if areas are ‘preserved,’ people make a living by existing and surviving on these margins - locations which are separate from the mainstream flow of

national, capitalistic, and or green politics-driven discourse. Tsing would note how these are the sites where values beyond that of nature arise and manifest for humans, such as freedom.²⁴ However, Leff would then respond to Tsing by describing the ways in which these margins are in fact still deeply imbedded in the systems of environmental degradation due to histories of colonialism. Even those who find themselves at the edges of or in the cracks of capitalism and society must rethink the ways in which conservation is thought of, imagined, and reified. Appadurai would step in to actually support Leff here, nodding to Leff by discussing with Tsing how the ethnoscape is shaped by histories which have complex, unknowable beginnings, and influenced by media and other forms of knowledge. For Appadurai, land use and conservation have a temporal relationship which is influenced by what we can imagine and what our social lives may allow. Leff sits more comfortably with the idea of what they can allow, but nonetheless likes that Appadurai supports him on this. Leff and Latour would agree in the role that people, particularly those of underdeveloped nations must play in land use and conservation. But Leff would be all for the use of land, unhindered by anything, as long as it's done 'sustainably'. I can hear him say that 'nature is an entity that is here to be used, not one which we are a part of'. And this is the main difference between him and Latour and Tsing.

²⁴ *The Mushroom at the End of the World*, Anna Tsing; for a discussion on freedom in nature outside of capitalist systems and capitalist ruin.

Leff wants to see redefinitions of how third world nations use and conserve their natural resources, land use and management plays a major role in this discussion. For Leff, it's through the integration of technologies and scientific knowledge that nation states can achieve an environmental economy that they can rely on as a form of capital production without exploitation of labour. Yet, Appadurai would note that regardless of whether you give people access to new technologies and scientific knowledge, in their ideoscape people will invariably modify, change, re-imagine what those knowledges and technologies do for them. To even say that these two entities are the path to some idealized first world status undermines the projects of people on the ground. The Bottom-Up approach is forgotten for a Top-Down approach which will inherently have social consequences. People will be disenfranchised due to the lack of opportunity for them to fully engage with their own environment when there is a mediating hegemonic power operating before they are able to do anything. Leff wants to allow policies to emerge locally, but wants to use ideas transported from other nations as well. We can only assume Leff means science and technology from the global north/ colonizers and/or global centers. This is a space where the experiences of a rural family in the highlands of Totonicapán would not be considered. The re-development of land use is open to the world of possibilities from the collective imagery, yet Leff would have projects use the knowledge and

technology of those hegemonic powers which have massively contributed to the environmental degradation which haunts developing nations today. I think Latour would get a huge smile on his face at the mention of this thought, as the possibilities for opening how we imagine land use in countries would be endless. Latour would note that in order to consider policies which will have profound change and establish humans as part of the natural environment, we must realize that the laws of nature and humans, in the Western context he's describing, have always coexisted. (Latour, 1999)

This then establishes a base for thinking about those millions of possibilities, thinking in this way opens up the ideoscape to possibilities that in a theoretical point of view which still separates nature from politics would otherwise never be considered. From Leff's approach, land use clings to ideas of humans using land, perhaps in more conscious ways, but takes for granted the fact that there must be some form of reciprocity with nature. I can hear Tsing interjecting here, a firm believer in the forest as a social space, she would argue for a conceptualization which gives agency back to those entities which Leff only refers to as natural resources. "If Meratus forests were recognized as social, the predominant forms of both resource exploitation and conservation that have been imposed on the area would seem very odd indeed." (Tsing, 2005) This is why Latour and Tsing articulate well

together, they both see nature, and the conservation thereof, to be a multispecies dilemma, yet thinking from the Marxist Materialist perspective Leff is coming from, it only is one of simplified ecological and economic theories which would benefit from other human perspectives.

Land use is a multispecies dilemma that is too often simplified to the wants and needs of humanity for profit. Conservation defined as Tsing and Appadurai would have it, could help inform how best to maintain a balance with the natural. Leff would attempt to make conservation ‘work’ for the development of nations. And Latour would try to break with all conventions about conservation and integrate ourselves into a natural which encompasses a larger field, no longer the natural which is separate from the human in the constitution which Latour discusses. Regardless, conservation is a strong tool for actors to determine how land is used, and therefore should never be assumed to be what is best for the biotic actors which inhabit it.

Conservation Education

When it comes to the theme of education, I think Appadurai would begin the conversation posing the question ‘How can we teach students about conservation when they are modern consumers, those who derive pleasure from goods which are distinctly made guaranteeing a short life?’ This is a huge problem now because the scale at which our climate is changing is increasing to points humans have never experienced since the Pleistocene. The challenge

for this eduscape is how to create a long lasting conservation pedagogy which is malleable enough to incorporate the changes happening to the environment, local knowledges which have been gathered by people over any number of years, and a vision for the future which takes into account a large breath of factors? Conservation education must draw from as many fields of knowledge as possible in order to be successful in the Anthropocene. Appadurai thinks about and imagines a pedagogy that is well informed through our use of our collective imaginations. It is these moments of imagining, which begin local, that create knowledges that then become part of a global eduscape.

Appadurai would explain how curriculums which are centered on the environment which students live in would help create new imaginings, new possibilities for what can be. He would be a proponent of an active pedagogy for kids living in the Anthropocene. Access to collective imaginations, the ideoscapes in which students are brought up, and the bioscape which they are growing up in, are all crucial components of the conservation education I observed and the one that needs to be further developed in these three countries. This place-based approach articulates well with his idea of a world beyond nation states, due to the way we could begin to organize ourselves, not by political boundaries, but by geographic and biological ones. This would then allow for the development of pedagogy which is environmentally sound and

multidirectional, eventually allowing students and people to identify more easily with nature, which then Latour would be very happy to hear.

Leff, however, would be saying that he would want conservation education to come from various different sources, regardless of climate or geographic location. Leff is a staunch believer in the knowledge which first world nations create and which third world nations could use and further develop. This makes sense from a developmental stand point, but Tsing would calmly state that when it comes to systems of learning, lessons may clash depending on who and where they are coming from. Leff is a believer in the empowerment of peoples through knowledge, especially when it comes from the developed world to the developing world. However, this could also be interpreted as a way to indoctrinate workers into the systems of capital flow which already leave their lands devoid of everything; teaching them only to be good capitalist destroyers. Tsing would agree with Appadurai and say that a place based approach is a more sound beginning, and then introduce concepts from a larger global sphere. By giving students a basis of understanding of their bioscape, they would be better able to understand the frictions which come up as the world opens up for them intellectually the further along they move in their studies.

Latour would not agree with the particular order which Tsing has come up with though. Latour wants humans to understand themselves as part of a global nature, and so learning through conservation education which is locally centered first, would be detrimental to a young student's understanding of their positionality in the larger global context. I can hear Latour thinking about conservation education and his main point would be to drive home a message to students about our integral role in nature. He would want to teach students a new science, one which is more than just dissections and lab write ups. This science would be one which could be found in many disciplines and anywhere around the world. However, pedagogically, Latour focuses more on the dialectical aspects of the theory on conservation and how we can move past this particular idea in the classroom and in our everyday lives. Latour would see conservation education as the way to remedy some of the problems of conservation if we understand conservation as inevitable in our world today.

Conservation pedagogy is crucial in the Anthropocene if we, as a global community, want to do anything about the potentially massive changes which it will bring. I believe these four thinkers are capable of getting into the real issues that plague conservation, while still not dismissing it as a concept. They all articulate different facets of the term and its multiplicity of meanings, which allows me to further complicate conservation education as I

saw it in the field and in my studies. I' ve learned that we not only need to teach conservation pedagogy, but that it must be nuanced, including local and global forces, as well as foster a love for the environment.

The final chapter of my thesis will incorporate this discussion on the theory of conservation and the examples from the ethnography of chapters two and three. I hope to show how these elements are present in the examples I have described to show that conservation isn' t dead, but that it no longer looks a particular way either, it is a concept constantly put into negotiation with its location and temporality.

So what does 'conservation' mean?

Now that I' ve unraveled some of the knots of the Gordian knot of conservation, I want to bring it all back, closing my writings by bringing together all of the previous chapters you have traveled through. I want to return to the three themes presented in the theory chapter: land use, education, and Top-Down vs. Bottom-Up conservation practices and projects. Why do I want to bring it all back? I want to show that Conservation may have a certain flavor in the USA, but when you travel to other parts of the world, the definition of conservation becomes context specific, complicating our ideas about what we consider conservation and that the plurality of

definitions which conservation can have is put to use by actors from all walks of life.

Education

Remember at one point, perhaps in elementary school, you learned about the water cycle? And even if you didn't learn it at school, I think most kids have a learned sensibility to the rain and flowing water. How do we, as societies in the Anthropocene, remember and teach what is truly important in our lives? This is a question I see all three countries asking, but it's in Singapore and Australia where they manifest most clearly to me.

Conservation has come with its fair share of disastrous consequences for communities of people, but the flavor it takes in educating about both historical efforts, as well as contemporary ones, is a proactive, hands on, experiential, place based approach. The examples of conservation education I was able to be a part in both countries were based on experiential pedagogy, which I agree with as a method of learning which persuades students to have a deeper appreciation about the environment. This approach teaches students tangible skill and helps them know valuable and useful information in the context of their surroundings. The LTs, Holloway's Beach program, and the Lake Barrine and Farm field trip, all had students feeling the soil and water, feeling and appreciating plant life and animal life in more attached ways rather than through second or third party sources such as textbooks and

classroom lessons. Latour would be a huge advocate for the expansion of the LTs in Singapore, to include more and have students identify more closely with nature via these educational channels.

Conservation education is an essential component of conservation efforts through time as without a proper education, how can we get people to develop biophilic tendencies? (Thorne, 2016) Today's conservation efforts revolves around providing an experience for the students whom these educators are teaching, yet those experiences should already be an essential part of the school day. I am for a more radical change which calls upon school districts to include curriculum which nurtures a connection to the natural world within which these particular students are living. The Singapore model of creating a city in a garden is an example of how societies can begin to incorporate the natural into the everyday lives of students. (Yew, 2000) Latour would be head over heels if we were to propose this sort of open model for conservation education. However, the only problem he would have, like stated above, is with calling it conservation education. Environmental Education is more commonly used when discussing nature education pedagogy. Using environmental education as opposed to any of the other terms proposed can help secure a position for this kind of education within the curriculum like it does in Singapore (Poh, Pers. Int., 2016). This is the step that Australian educators are attempting

to take, particularly in Queensland, where access to the rainforest and the reef is so feasible. Many kids already get this kind of exposure from their parents or activities they may be involved with outside of school, but don't have the formal teaching component that environmental education would bring (Thorne, 2016).

The issues of Top-Down vs Bottom-Up are important for the conversation on education. In both Australia and Singapore you have a central government which determines the curriculum which will be followed at the national level. The reasons for this make sense, so the population of students in the country is getting the same level of education, but it is this strict curriculum that prevents environmental education from being effective or cared about in Australia, partially due to its massive size. Singapore being a small island is capable of having one strong central curriculum because all of the students who go to school here also live on the island, the geographic locality is pretty homogenous. Australia on the other hand, has much to lose from this approach, as its land area is the size of the contiguous USA. The multiple ecosystems found on the Australian continent are not being put to use by the educators as the curriculum calls for strict lessons to be taught. This is to ensure that students receive good marks on the national tests which are markers of educational excellence internationally. (Whitehouse Per. Int.,

2016) The Top-Down approach more broadly struggles to achieve the active, detailed, and specific context which Bottom-Up approaches to conservation education often start with. If we look at Top-Down as national governments, Singapore has a centralized government which sits and is surrounded by the same ecosystem which students are studying. Lessons such as the LTs are easy to put together for a large swath of students as they can rely on the similarity of ecosystems across the island to teach lessons. Australia has curriculum writers in Canberra, which makes it almost impossible for them to know what are the available places, resources, and events which could be used for effective experiential environmental education, and most importantly they live in a different climate than the kids in Cairns do! Singapore accomplishes from the Top-Down what Australians accomplish using Bottom-Up approaches. The LTs are a fun way to have students learn about the ecosystems, national struggle, and care of Singapore. Similarly, Underwood' s Holloway' s Beach program, Spigariol' s Kids Teaching Kids, and the Lake Barrien Field Trip all accomplish these goals, with an eye towards supporting a national agenda.

Part of Environmental Education in both Australia and Singapore is to push for an agenda which will foster pride in the country. Learning about the importance of water in Singapore and the rainforest in Australia, allows for the programs which do this to instill not just biophilic tendencies onto

students, but also a pride in the environments which make up their countries. Both Australia and Singapore have struggled in the past to create Anderson's imagined community, which unites a people according to national boundaries across differences in race, class, gender, religion etc. (Benedict, 1983) This is one of the ways Top-Down approaches to Environmental Education is coopted by the nation state to create a unified state which identifies closely with the environment, yet not enough to truly identify with the physical nature of it, not like what Latour and Tsing wish they could see.

Conservation is where derivatives of many environmental efforts across the world originate, and for environmental education, it is no less different. Fostering biophilic tendencies in our younger generations is key to creating a future where contemporary issues plaguing our world can be changed, so the Anthropocene does not enter predicted worst case scenarios. The role education plays in conservation efforts may not be immediately visible, but I believe it to be the one most important for the future of conservation and its evolving character. However it may be used, experiential education has shown that not only do kids have fun, but they make those lessons part of their lives. Singaporean children change their shower times, use public parks more often, and identify more closely with their country. Australian kids go home and ask their parents for money to save the forest, they embark on making large scale

projects like books, clean ups, and short movies, as well as help each other not only learn but grow in essential life skills. Environmental education is the crux onto which sits conservation and its continuation into the Anthropocene, and what I hope I have shown are cases where it is being done quite successfully— where teachers are taking full advantage of the resources which are available to their students and the students are creating meaningful change in their own lives as well as the lives of those around them.

Land Use

Conservation's most salient feature when it comes to land use is in the preservation of land, yet, the term conservation is used to the benefit of the user, not to a concrete definition or ideal. These three locations provide examples in which conservation is used similarly from the Top-Down to acquire land for the government or international interest groups, yet what happens with the land after they have acquired it through using similar means is drastically different. The Singaporean government, identifying housing needs as well as pursuing a green aestheticism in the country have pushed for large scale housing projects using reclaimed land and the redesign of its public parks for the use and consumption of its citizens. (Yew, 2000) Australia plays the exact opposite card, acquiring land and playing the 'keep out' game for anyone interested in large scale use of the rainforest. And Guatemala tries to strike a balance with its population of Indigenous and rural peoples whom rely

on the rainforest for essential needs and cultural practices. But any number of factors will affect the results of these efforts and policies.

The Maya Biosphere Reserve works as a tourist attraction for the department of Petén, but also as the home of the Indigenous peoples. (Grandin, 2005; Sundberg, 2004, 2008) This didn't just happen due. It was a long process of struggle and fights with local, state, and national government. The most important thing to note though is that these fights over land rights have been happening with Indigenous Maya peoples in Guatemala since pre-colonial times with the invasion of Aztec monarchs into the ruling classes of different Maya city states. But it is colonialism which has played the biggest role in the oppression and genocide of the peoples and the land which they live in, even to this day (Redclift, 2006). I wrote the poem which you first read in the second chapter to reflect this history of conquest but also of resistance. The struggle for land has been ongoing for centuries in Guatemala. But the land claims of peoples in Australia and Guatemala have been handled very differently by the governments of these countries according to who they are: the Australian government did not care for the people living in the rainforest, they have closed off most of the area to permanent tenements, and this includes the Indigenous people. (Terry Pers. Int., 2016) In Guatemala, Indigenous groups working together with NGOs fought to have the rights to

their lands back, a Bottom-Up movement that still needed Top-Down help to achieve its purpose. (Sundberg, 2004, 2008) And in Singapore, the functionality of public housing paired with the drive to achieve first world status drove the government to take control of public lands and force a public housing plan, radically shifting the lifestyles of Singaporeans forever. (Yew, 2000) Land struggle is tied to histories of greater struggle, all three countries having very different solutions for the repercussions of colonialism yet done through the lens of conservation. Even if not explicitly stated, the underlying assumptions remain, as conservation has the power to force hands and sway decisions.

Dot, our character from the short Australia story, cannot understand why it is they have to leave her home in the Wet Tropics. But they have to leave for the protection and conservation of the rainforest she loves so much. Life gets pulled from under her feet to conserve the rainforest she so loves and so desperately wants to stay living in. The implications in this fictional, short story are similar to what happened to Anne Chang, our fictional grandmother who loves the new Bishon-Ang Mo Kio Park, a park which used to hold ancestral meaning for her and her friends but needed to be destroyed for the sake of water security, for her own wellbeing, and now is reborn again. Australians pushed for the conservation of the rainforest, hurting people's livelihoods

in real ways, but in Singapore, this nature was sacrificed for the livelihoods of people, and later reconstituted. I'm not saying one is better than the other, but I am saying that these instances of environmental concern stem from struggles with development, and conservation has played a role in determining who and how the policies enacted to conserve them (or not) will affect. And how does this sit with our theorists? Does it mean that Leff is more right because people's basic needs are being met? Does Latour's theory better encompass the complex world of conservation then? But there are so many forces to consider, so is Tsing's approach through friction better to use? This is why Appadurai works so well for the conversation, because his scapes take into account the intricacies which exist beyond present time and space. Scapes can be super local or super global, but they are centered on the ethnography, the examples which manifest themselves locally in each of the locations I describe.

Conservation can be used to strip people's right to land based on identity, but it can also work to stake your claim to the land. Here is where Tsing sees Bottom-Up conservation practices being used for the farmer, the rancher, the logger, or First People's communities. The unlikely alliances which she aptly describes in her book, manifest in perhaps contradicting ways, as ranchers and Indigenous peoples in Guatemala have different ideas about

what to do with the land, but in Australia they may in fact work together to identify effective reforestation strategies which help connect old growth forest with new growth forests and maintain rivers and streams clear for cattle to graze and drink without dying in mud pits created by the lack of soil maintaining rainforest tree species (Uncle Russ Pers. Int., 2016).

Conservation is a tool that is used to rhetorically, lawfully, and intellectually justify the needs of either Top-Down or Bottom-Up actors, to enact changes which will fulfill personal or national interests. I believe my examples have shown how complex these desires and goals can be, depending on ecosystems, geographic locations, histories, and identities which collide or twist together to inform how we should or shouldn't use the rainforest, the trees, the plants, the natural environment which for so long scholars have believed we are separate from. Scholars, the elected officials in Canberra, and the Maya communities of the Biosphere live in a nature which saturates our lives. We are the ones who decide how much we will believe this fact, and I believe the four theorists from the section above would all agree that only we stop ourselves from more fully engaging with the natural, as to be natural is to be human. What is the right balance to strike when differing constituencies call for specific needs to be met? The answers to these questions have been met with country, region, and ecosystem specific answers. Singapore attempts

to meet the needs of its population through policies distilled through mostly a Top-Down model, claiming land and using it to best serve the interests of its people or organizations. In Australia, I found Bottom-Up approaches which catered more closely to the conservation needs of each ecological area I visited. And in Guatemala, conservation efforts which have historically disenfranchised Indigenous communities are challenged by Bottom-Up conservation efforts from local communities, with additional support from Top-Down NGOs and international bodies. Conservation is complicated, plural, location specific, and an available tool ready to be used by any one, no matter the consequences.

Conclusion in Two Parts

Part 1

The word Conservation and its plural definitions pose huge problems for theorist. Why must we keep talking about conservation? Because it never left, it has only evolved over time to suit the needs which people need it to serve. Like Tsing, Leff, or Latour, the concerns about our place in the natural environment, resource management, and our own future as a species are interlinked in ways as complicated as the roots of trees which we uproot in order for them to publish their books or me to print out this work. I haven't forgotten about Appadurai, though he may not directly address it, conservation

and its derivative meanings are critical for a reimagining of our sociopolitical world. Though conservation may have specific definitions in the dictionary, those definitions are only a fraction of what we now can consider a large body of work revolving around concerns for our world. Do I think conservation, as a useful term for describing our goals for the world, is dead? No. In fact, I believe that conservation rhetorically opens up the gates for people to imagine a world where the natural no longer looks like capitalist rape and ruin.

Part 2

My second objective in writing about the ethnography of conservation was to illuminate some of the ways it relates to the plurality of meanings conservation can have. Observations show direct usage of words to fulfill personal goals which are connected to larger global goals revolving around the theory of the Anthropocene. So, why must we keep talking about conservation? Because it never left, people are still actively pursuing what they believe it to be. And it's this important distinction that must be made when thinking outside of the theory: people engage with conservation in its plurality of meanings even if they don't mean the purist definition which we find in the dictionary. All of the efforts individuals, communities, governments, and international bodies make in an effort to pursue new relationships with the natural that move beyond capitalist destruction, can be considered

conservation. It is now a model for promoting change, development, or personal interests which is tied to a personal definition to the word and concept, linked only by nature to the western definitions of conservation first considered during colonial times.

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