

Perceiving the Ecological, Cultural and Economic Significance of Pacific Lamprey in
Nez Perce and Other Regions: From an Outsider's Perspective

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Authorization to Submit Thesis

This thesis of Muyuanye Ma, submitted for the degree of Master of Arts with a Major in Anthropology and titled “Perceiving the Ecological, Cultural and Economic Significance of Pacific Lamprey in Nez Perce and Other Regions: From an Outsider’s Perspective,” has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

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Abstract

The Pacific Lamprey are nearly extinct in Clearwater and Snake river basins in traditional Nez Perce region. Dams have blocked the lampreys' way to traditional spawning areas. The Pacific Lamprey are significant to the eco-system in the Columbia River Basin and for the Nez Perce culture. However, "the cultural and ecological values of Pacific lamprey have not been understood by Euro-Americans and thus their great decline has almost gone unnoticed except by Native Americans, who elevated the issue and initiated research to restore its populations, at least in the Columbia Basin" (Close, Fitzpatrick & Li, 2002). The extinction of Pacific Lamprey in traditional Nez Perce region may bring negative ecological and cultural impacts. Through the research with Nez Perce people, this article presents the meanings of Pacific Lampreys to the local ecosystem and culture, as well as their potential economic values. To achieve these goals, this study describes the main causes of the sharp decrease of the lamprey population, how the lamprey are presently treated as a good food resource in many regions around the world, and report Nez Perce people's attitude toward nature. This thesis also focuses on my research methods because as an "outsider" (Brayboy & Deyhle, 2000) who barely had any knowledge of Native Americans before meeting with Nez Perce people, it is necessary to explain why and how I engage in this research program.

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Dedication

I want to dedicate my work to all the participants who talked with me in formal meetings and on informal occasions, and those who provided other kinds of support for my project. They are the six tribe elders who taught me a great amount of Nimiipuu knowledge: Silas Whitman, Leroy Seth, Gordon Higheagle, Charles (Chunky) Axtell, Loretta Halfmoon, and Ronald Halfmoon. I would like to thank two younger Nimiipuu people who provided many suggestions before and during my study: Nakia Williamson and Yolanda Bisbee. Easton Powaukee and Sienna Reuben are the two excellent Nimiipuu college students who allowed me to understand many ideas of the young generation. At last, I want to thank Patricia Keith and Shannon Wheeler who inspired me a lot for this project.

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Chapter 1: Personal Position Statement - my encounter with Nez Perce and Pacific Lamprey

Relationships are not something we can create through our own will. I did my undergraduate study in New Zealand; that was the first time I encountered indigenous people who live in a county with a European majority. People have very limited opportunities to know New Zealand Maoris through social media in my country; thus, before I went there, I was naive about the Maori, except for the “noses touching” greeting (Maori: *hongi*), which I learned from a middle school textbook. But my naïveté was quickly impacted by negative stereotypes among non-Maori people around me, especially among the international students. As an international student I did not speak good English, and I had limited ideas about the society. I had visa issues, which meant that I had to finish and pass a certain number of classes every semester. I also received pressure from home because I was fully funded by my family, and my parents hoped that I was safe and successful in another country. Most Chinese students experience similar situations. That was why they always tried to avoid potential risks, including risks related to the biases about a group of people.

International students from China may hear negative things about the Maori in New Zealand including high crime rates, violence, and poor academic performance. These biases make international students distance themselves from the Maori in and out of universities because any trouble could ruin one's overseas study. "Don't do group works with Maoris"; "don't live in Maori communities"; "keep away from Maori gangs in the evening". These warnings construct Chinese international students' essential perspective of the Maori. The first impression is lasting, though the impression might be from stories rather than direct personal experience. I never was harmed by any

Maori folks, but the negative opinion was always in my mind, and they constantly pushed me to avoid any imagined potential risks.

Maori culture appears everywhere in New Zealand. With the curiosity of an art history and anthropology student, I was drawn to Maori culture. Subsequently, I learned a lot of Maori culture in New Zealand. But studying the Maori in an academic way was not easy for me. My first major at the University of Auckland was Art History. In a first-year class, a lecturer brought us to a *Wharenui* (a Maori meeting house) and taught us the significance of the Maori sculptures. The names of Maori gods overwhelmed me, especially those terms in the Maori language. Because of that, I started to deliberately avoid the classes related to Maori culture to avoid bad class performances. Towards the Maori culture classes, there was conflict between my curiosity about and my fear of that cultural knowledge. I wanted to learn more about Maori knowledge, but the knowledge looked so recondite to me. Finally, my fear defeated my curiosity. Thus, during the total four and a half years, I never had confidence in studying Maori culture at the university.

Things changed when I encountered Native American culture. I decided to work with the Nez Perce by chance. At first, I planned to do some research on the Nanjing Massacre in the Second World War because I grew up with my grandmother, who survived the Massacre. She told me many stories when I was young. I spent two weeks in Nanjing City, Jiangsu Province, China in 2017 for collecting information. I was often moved by those stories and landscapes which carry the memory of suffering, especially by those stories that were told by the people I have known for many years. I was interested in how the memory of Nanjing Massacre shape the

identity and daily life of Nanjing people today. However, after coming to Idaho, studying in the class “Contemporary Issues in Anthropological Theory” and having some introductory knowledge of Native American history, I immediately decided to do some research with Native American communities, because I felt a similar empathy to Native American people as what I had to Nanjing people. I thought that the Native American people and Nanjing people might share a commonality toward their memory of the past and the relationship with the land. Therefore, I felt that I must cherish this opportunity to do something that only can be done here in Idaho.

There are other reasons that encouraged me to work with Nez Perce people. When I was recalling my experience in New Zealand, I asked myself if I was too sensitive about the imagined risks of Maoris and the difficulties of Maori culture classes. I felt bad that I had missed a good opportunity to learn Maori culture and regretted that I was easily manipulated by those stories about the Maori.

I visited Cherrylane Hatchery near Orofino, Idaho with Dr. Steven and other students in my first year at the University of Idaho. That gave me the first opportunity to meet Nez Perce people on the Nez Perce reservation. That trip left me with a very good first impression: to me, Nez Perce looks like a land with great nature and kindly people.

For my first thesis topic draft I was interested in how infrastructure shapes people's daily life and ideas on the Nez Perce Reservation. Before I decided to act on this potential thesis topic, I had only a little bit of knowledge of Nez Perce culture, and I had not seriously talked with anyone from the Nez Perce community about this topic.

Therefore, I imagined Nez Perce culture as being “hurt” by modernization; a real Nez Perce culture must resist modernization. In my first draft, I suggested some poetic research methods such as re-walking the old trails with Nez Perce people and finding out the different feeling between traveling by foot and by vehicle on the reservation. When I was presenting this idea to my major professor Dr. Philip Stevens and Dr. Yolanda Bisbee (the Executive Director of Tribal Relations in University of Idaho), Dr. Stevens told me that this was not a thesis plan: “it is too romantic.” Dr. Bisbee asked me to think about how my research could benefit the research community. I could understand why she asked this. As an anthropology student, I was taught that non-European indigenous people had been studied since the Age of Discovery. During a very long history, those being researched were not treated as human-beings equal to the European researchers; many researchers were very brutal. In recent decades both the researchers and the potential research communities realized that they need to be treated equally, and that has become an important part of research methodology. Reciprocity represents equality - there are no reasons for researchers to take advantage of research communities.

After that meeting, I realized that the right decision on the research topic requires thorough pre-study of the research community and early contact with the people there. That includes studying existing research, getting familiar with the background knowledge of the research community, explaining my ideas to the people from there, and listening to their ideas. To me, the last one was the most significant because it decides two crucial facts: would I able to build appropriate relations with the research community and would my research benefit the research community?

A couple of weeks later, Dr. Stevens decided to introduce me to Mr. Nakia Williamson, the Director of the Nez Perce Cultural Resources Program. Before I went to see Mr. Williamson with Dr. Stevens, I still had little knowledge about Nez Perce culture and my future research topic, but I had been studying in the "Plateau Indians" course, which involves Plateau Indian culture and research methodology. During the conversation with Mr. Williamson, he introduced Pacific Lamprey and its cultural importance to me. He also described how Nez Perce people constantly protect this old endangered species. Mr. Williamson told us that the Nez Perce declined to sign the Columbia Basin Fish Accords because Feds refused to add Pacific Lamprey to the endangered species list. His words inspired me to study lampreys.

I was familiar with lampreys long ago before I came to Idaho, and I had seen and touched lampreys in the Nez Perce tribal hatchery before the meeting. There is also a coincident story between lampreys and me. My first encounter with lampreys in Cherrylane Hatchery was unexpected. I knew about lampreys before I came to Idaho. I saw the pictures of lampreys many times, always in those webpages titled as "the most horrifying animals on earth". Animals are fascinating to me. I frequently read information about lampreys. Gradually, lampreys no longer were horrifying to me. Instead, I felt curious about this creature. I did not expect that lampreys could be cultivated in a hatchery because they did not look like a kind of animal with high value. I would say, through the study in later months, this creature surprised me again and again with its natural and cultural significance; and when I let a lamprey suck on my hand in my second trip there, I knew that it is not as horrible as many online pictures show.

Back to my first time in Cherrylane Hatchery, when I saw lampreys there, the feeling was like an accidental meeting of an old pen-pal. When the staff in the fishery asked us if we want to grab a lamprey by hand, I immediately took the opportunity. Since that time, I could feel a special relation with lampreys. After that meeting, I gradually attempted to study lampreys.

The meeting with Mr. Nakia Williamson was the first time that I felt that my Chinese identity is something special here in the Nez Perce region. After teaching me some general knowledge of Nez Perce culture, Nakia shared his experience with Chinese people. One story caught my attention because it carried a period of bitter history: many years ago, when Nez Perce folks went into Lewiston, they could only go to the restaurants run by Chinese because the whites would not let them in. There were similar stories told by Dr. Silas Whitman and Dr. Bisbee in the other meetings.

Among the three storytellers, Yolanda's story has the most details: Yolanda's grandfather and other Nez Perce folks once often ate in the Majestic Café ran by the Eng family in Lewiston. Later, the Eng family closed the Majestic and ran the Eng's Chinese Restaurant. Then Yolanda's grandfather and other Nez Perce people went to eat in the new restaurant. Yolanda's grandfather was "very close with" the Eng family. When the restaurant owner died, Yolanda's grandfather went to give help and contributed to the family. There is another story about Lee Koon's farm I learned from Mr. Leroy Seth and filmmaker Mrs. Patricia Keith. Lee Koon was an early Chinese immigrant in Lewiston. At that time, many Chinese immigrants ran restaurants for life in Lewiston; thus, Lee Koon ran a farm to supply food resources for Chinese restaurants. Lee Koon needed laborers, so Nez Perce folks came to his farm and

worked with him. Leroy was one of them and built a good relationship with Lee Koon. Nez Perce people's knowledge of Chinese immigrants is far more than this. During my meetings, I heard stories about early Chinese laundries, miners, and their gambling and drinking activities. Mrs. Patricia Keith brought me to The LCSC (Lewis-Clark State College) Center for Arts & History in Lewiston, and among the exhibits of the Chinese Beuk Aie Temple, I found some very interesting information: when local Chinese were memorizing the 34 miners who died in the 1877 massacre, they engaged in traditional Chinese religious ritual, and they also invited Indian singers to the memorial site to sing songs. They might think that Indian songs were a kind of appropriate ritual on this land, and those songs could bless and comfort those souls of victims who died and were buried here. Although I have no more details about these stories in the Chinese restaurants and on the farm at that time, I still could imagine why and how these two people could come together and build a great friendship. According to the AACC at the University of Idaho (Asian American Comparative Collection), Chinese came into Idaho since gold was found here in the 1860s. Early immigrants worked as miners or in laundries, restaurants, and stores. Later, many of them worked on the railroads and other places. At the same time, anti-Chinese feelings were spread national-wide, and racist laws like the 1882 Chinese Exclusion Act were carried out and not repealed until 1943. In Idaho, early Chinese immigrants once suffered a lot. The 1877 massacre probably is the most well-known example. Therefore, I can understand that "many years ago", both Chinese immigrants and Native Americans in the Nez Perce region lived in bad conditions under a lot of pressure. As Nakia said, "they (the early Chinese immigrants) were in

the same situation as us". Another thing that makes Nez Perce culture special to me is some of our similar ideas and experience toward foods. I learned a lot of stories of how people hunt, fish, dig roots, gather huckleberries, and how people make "food in all use", as Yolanda said. "Food in all use" (Bisbee, 2009) refers to the ways people consume their prey. For example, people eat the meat and edible viscera, progressing animal skins to clothes and other products; they use lamprey oils for medicine, lamp oil, and crafting arrows. These stories are not strange to me because my parents once lived in the countryside, in poor conditions. I learned a lot of stories from them like catching fish, loaches, finless eels, crayfish, crabs and even snakes in creeks. They also caught and grilled locusts on grasslands, dug cicada pupas under trees, and collected sweet potatoes, peanuts, beans and berries. Since I was little, I went to their home village many times every year and experienced a lot of activities in their stories. When I hear those old ways of life in Nez Perce stories, like hunting deer and rabbits, catching fishes and lampreys, digging roots and picking fruits, cooking and eating in the field, my memories of the countryside experience of my family immediately occurred in my mind, and I desired to share them with my Nez Perce storytellers.

Since the first time touched with Native American knowledge here in Idaho, I started to see some special connection between me and the Nez Perce people. Through my research, such feelings became stronger and stronger. I could feel a compelling psychological implication that has significantly shaped my relationship with Nez Perce people and lampreys. How could this happen? I tried to explain this special feeling with contextualization theories and ontological turn. But I quickly realized how

silly I was – I should think more about my cultural background. I realized that the traditional Chinese idea of predestination worked in my mind. Here, I want to introduce the Chinese predestination ideology, yuan (Chinese: 缘), which is syncretized and recombined by the Buddhist theory of Nidana, which is a Sanskrit word that means "cause, motivation or occasion" (Robert, Buswell & Donald, 2013: 583) and the Chinese traditional ideologies relate to cause and results. It is a belief of destiny with both the color of Buddhism and animism. I am not a religious person, but the idea of yuan is grounded in Chinese culture. Next, I use Yang Guoshu's (2008: 549) psychological model to briefly show how yuan could shape the relation between people or the relation between a person and a thing (Figure 1.1):

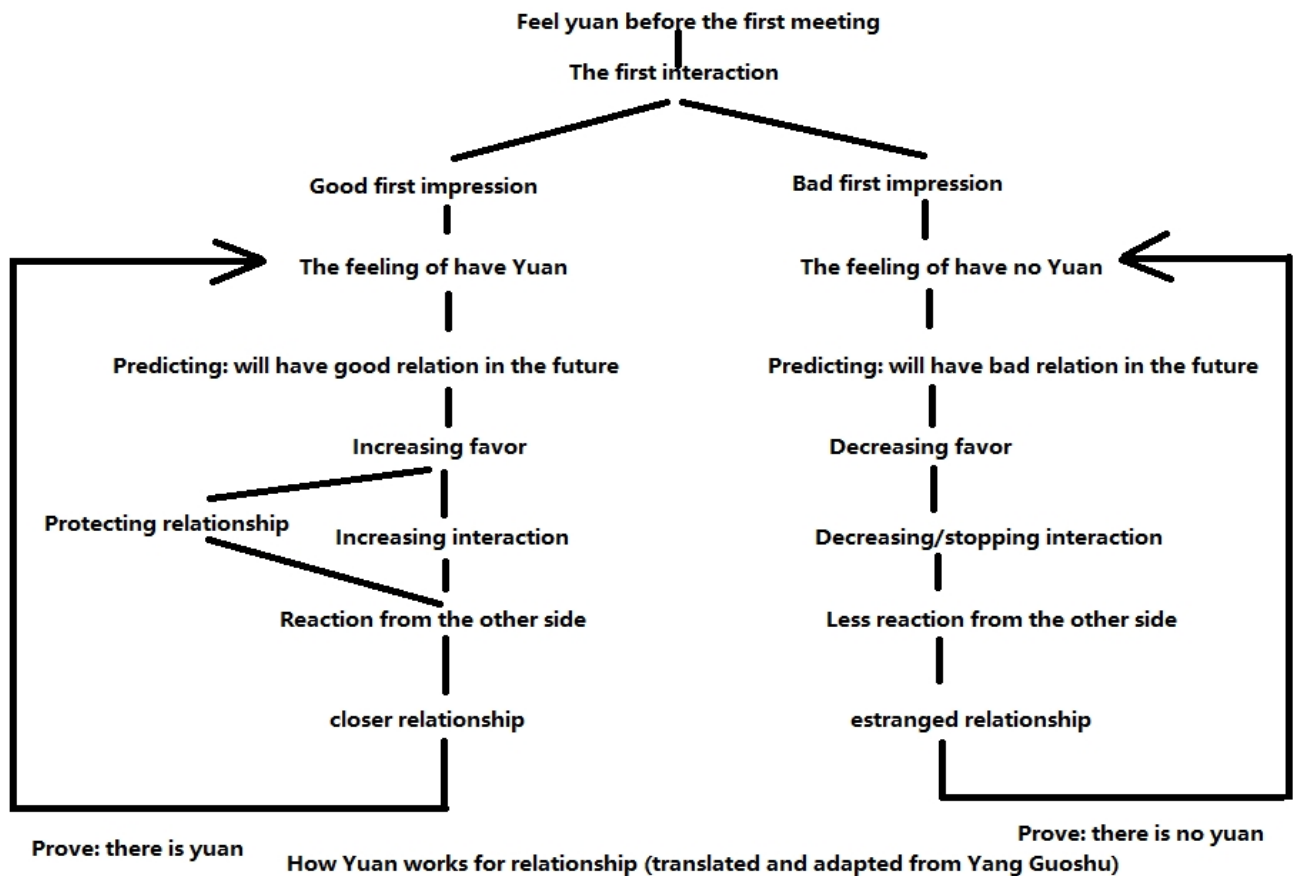


Figure 1.1, Yang's model of yuan, translated from Yang's *Chinese Local Psychology*

Yang describes *yuan* as an "attributional process", and his model focuses on human relations (2008: 560). However, I would say his model also works for human-thing relations. Yang argues that sometimes people feel the existence of *yuan* at the beginning of a meeting with someone or something, like the first impression. For example, when I thought about why I was interested in Nez Perce people and lampreys, I saw so many coincidences that led me to meet with Nez Perce people and lampreys, and feel good with them. Thus, I felt a kind of destiny to work with the Nez Perce community. Sometimes people could feel the existence of *yuan* later. I decided to come to North America in 2010, but many coincidences led me to New Zealand. Then for many other reasons, I came to America in January 2018. Then my mother said, "finally it is proved you have *yuan* with America, not New Zealand". In China, *yuan* is always used to describe the relationship between the two of a couple - a newly married couple is often called "the two with *yuan*". When people think about how members of a couple coincidentally meet each other and coincidentally have a good feeling with each other, they think these are the hints of the existence of *yuan* between the couple. If the couple part company later, people may find many things happened that could indicate there is no *yuan* between them. As a psychological suggestion process and an attributional process, the core of *yuan* is finding reasons to prove the special, destined relationship with someone or something. It is a defensive mechanism: if someone believes there is *yuan* between he/she and someone else or something, he/she will tend to promote and protect this relationship between them; if the relationship finally collapses, he/she may to some extent

attribute the bad relation to the lack of *yuan* rather than to those people or things (Yang, 2008:562, 563).

If someone asked me if I believe in *yuan*, I would say no. However, I guess it has significantly shaped my ways of dealing with relationships. Apart from my demand for a good master's program and my will to practice fieldwork, my interest in Nez Perce culture and lampreys might be guided and promoted by the *yuan*-culture grounded in my life. *Yuan*-culture made me believe that every moment of common life is constructed by numerous coincidences and miracles, the small ones and the big ones. I could be here, meeting with the Nez Perce people, partly because the University of Idaho was the first one that accepted me and allowed me to catch the 2018 spring semester – this is a small coincidence. I could be here because I was born in the late 20th century rather than the New Stone Age – this is a big miracle. *Yuan*-culture allows me to easily find those coincidences and miracles behind my encounter with lampreys and Nez Perce people. *Yuan*-culture allows me to know that the encounter is not something commonplace; thus, I must cherish it. Before I formally started my research, I believed that *yuan*-culture would allow me to find more coincidences and miracles when I engaged with the Nez Perce community and lampreys in the future, and it may largely shape, promote and protect my relationship with the Nez Perce and with lampreys.

As I mentioned previously, I have engaged in many things and moments that make me feel a special connection with Nez Perce, including a number of coincidences that allowed me to meet with Nez Perce people, and a number of moments in which I found a number of similarities between Nez Perce culture and my memories and

experiences. On the other hand, I also met a series of predicaments. For example, four or five weeks after I applied for tribal research approval, I was worried about whether my research would be accepted by the tribe. I shared this feeling with my parents and told them if I would not have the tribal approval at the end of the semester, I probably would need to change my program. My mother told me, "no worries, follow the *yuan*".

In conclusion, all of my encounters here with Native Americans and their culture created an empathy between Nez Perce and me. This empathy does not mean we have understood each other. It means that I am eager to understand the real Nez Perce culture. Maybe or maybe not because of *yuan*-culture, but I could feel destined to work with Nez Perce people and I felt a duty to cherish this life-time opportunity to work with Native American people. When Yolanda told me, "we can understand each other better," I was encouraged.

When I started my research, I thought I would not be able to really know Nez Perce culture: as an outsider who did not grow up in that community and speak that language, my perception of Nez Perce culture is superficial and fragmented. As Linda T. Smith (2012) argued, the indigenous communities "have formed quite extensive networking and collaborative relations; they have their language or codes, analysis of self-determination; they may be very exclusive thus only community members can engage in local researches" (Smith, 2012: 128-130). On the other hand, Smith pointed out that non-indigenous researchers have positively engaged in "bicultural research, partnership research and multi-disciplinary research", other "effective and ethical ways" in "an ongoing and mutually beneficial way". So, how can

I do research with an indigenous community in a positive way? Before discussing this, I want to share my experience with the Coeur d'Alene Water Potato Ceremony. In my 2018 fall semester, I went to the Coeur d'Alene Water Potato Ceremony with my instructor and other classmates. We spent about an hour learning local cultural and natural knowledge and a half-hour in digging water potatoes. It was a wonderful experience because I learned a lot of local knowledge and I could imagine some of the hardness and joy in Coeur d'Alene traditional life.

On the other hand, because I did not have enough knowledge about Coeur d'Alene, I worried that, to me, my imagination of Coeur d'Alene life which was created by the exploration that day, and is probably romantic and unrealistic. If I could not go deeper and have a more comprehensive understanding of its history and current situation, I might think Coeur d'Alene life as a kind of primitive, utopian naturalist lifestyle, just like how I once imagined Nez Perce culture as a way of life that resists modernization in my first thesis topic draft. This feeling made me recall Gladney's (1994) research, which shows that the Chinese majority group could have deficient and prejudicial understandings of minorities if the life of minorities was selectively presented to the majority. There was another reason why I doubt my imagination of Coeur d'Alene life. As Handler and Saxton (1988:243, as cited in Wang, 1999:351) suggested, "An authentic experience...is one in which individuals feel themselves to be in touch with both with a 'real' world and with their real selves". I could not feel authenticity on that day because I expected to see more daily life of the Coeur d'Alene like how people work, eat, do entertainment and deal with social relationships every day; or to hear their life stories about these things, at least to see how Coeur d'Alene people

themselves dig water potatoes and celebrate on that day. But the ceremony hardly reflected them – the ceremony was like a school class; we were taught about some natural and cultural knowledge by Coeur d’Alene teachers. It was not the “real world” I expected. I even doubt that if I was a “real” me: what was my position on that day? Was I a learner, an observer or a participant? Was I a common visitor without any bias toward Native American culture, or an anthropology student who has a lot of passion and a good impression of Native American culture? I did not know at that time.

Similarly, I was never confident to describe an authentic life of Nez Perce people, because I did not have enough Nez Perce knowledge as a lens through which to perceive and interpret Nez Perce culture; I have limited ways to know the community, no matter through eyes, ears or heart; and my position in the research community was not clear. Even my willingness to work with the Nez Perce Tribe on Pacific Lamprey occurred by chance and psychological hint, *yuan*. However, since the beginning, my willingness to work with Nez Perce people and to interpret their culture is very strong. Although I could see what Nez Perce people see, hear what they hear and know what they know, I believe that, to a certain extent, I could feel what they feel during my study. I needed to clarify this at the beginning of this thesis.

Chapter 2: Research Questions and Methodology

Research questions

Close, Fitzpatrick and Li (2002) argue “the cultural and ecological values of Pacific lamprey have not been understood by Euro-Americans and thus their great decline has almost gone unnoticed except by Native Americans, who elevated the issue and initiated research to restore its populations, at least in the Columbia Basin”. To address this issue, this thesis presents the ecological, cultural and economic significance of Pacific Lamprey among the Nez Perce and other regions. Specifically, I try to answer these questions: why lampreys nearly disappeared from the Nez Perce Reservation and some other traditional breeding regions? How lampreys contribute to the ecosystem? How people consume lampreys? How Nez Perce people remember and understand lampreys? Why lampreys are important for Nez Perce culture today? By exploring these questions, I hope to draw a very brief outline of the lamprey-culture among the Nez Perce and try to show the true value of lampreys to the people who do not know this creature very well.

Interview

I had some knowledge of doing research with an Indigenous community. In her article, Vanessa Anthony-Stevens (2017: 85) stated “the four Rs” for building non-Indigenous/Indigenous collaboration: relationality, responsibility, respect, and reciprocity. My relationship with the tribe relies on my understanding of tribe knowledge and my communication with the tribe collaborators. My responsibility was ended by the tribe through research approval; and I also could feel the responsibility to do something good for the lamprey. I respect my knowledgeable interviewees who

kindly shared their precious knowledge with me, and I also respect the tribal knowledge I learned from them. I would try my best to interpret their stories in an objective and authentic way. I also shared my stories which reflect our similar ways of life to my interviewees.

“The four Rs” represent a healthy relationship between non-Indigenous researchers and an Indigenous community, and through the four Rs, I would say, one could achieve the “Heart Knowledge” that Rodney Frey (2017: 87) introduces in his work. “Heart Knowledge”, a term which is used by Native American elders, directs the audience inside the community or those being trusted. It has its unique “epistemological principles”. In Niimiipuu language, Heart Knowledge refers to Tamalwit, which means “‘the law’ in a legal sense; also principles and teachings derived from the Creator and Animal First Peoples upon which the human people live” (Frey, 2017: 264). Heart knowledge “entails criteria such as ‘trustworthiness’ involving qualities of credibility, dependability, and confirmability, and almost most importantly, ‘authenticity’ involving the inclusion and acknowledgement of the multiplicity of the elder and the collaborator ‘voices’ relied upon and conveyed in the research that seeks to reflect their ‘original expression’ and ‘genuine representation’” (Frey, 2017: 87). By learning the Heart Knowledge from my tribal collaborators, I would be able to re-examine the “Head Knowledge” which I always relied upon before — “Head Knowledge” which “measures include ‘reliability’, using a systematic and standardized method that assesses the ability to repeat the observations, data collection, and findings of someone else’s study; ‘internal validity,’ the ability to correspond the theoretical description of the data with the actual data collected; and

‘external validity,’ the ability to apply and generalize the results of one study to other studies” (Frey, 2017: 87). In this research, I wanted to work with Nez Perce people with the four Rs for learning and interpreting the Heart knowledge of my tribal collaborators.

However, am I able to achieve the four Rs and access to Heart Knowledge in this Pacific Lamprey program? I doubt this. I do not speak the Nez Perce language. I do not live among them. I even did not have the opportunity to do participation observation. I have been to the tribe fishery office, its Orofino Department, and Cherrylane Hatchery, but I did not "work" in these places, and I did not participate in anyone's daily life. Maybe it is better not to participate because I would not be able to blend into people's life and work; I will be a just a cold observer, an invader. Even if I could participate in people's lives, because of the lack of enough knowledge, I will be, as Bryan Brayboy and Donna Deyhle (2000) argued, "plagued by failing to see nuances from the perspectives of the informants" and may fail to make a balance between the position as participant and researcher. As I said before, I never had confidence to appropriately present the life of Nez Perce people.

Because of my limitation, I decided to use conservative research methods. I did not try to express too much of my own ideas on the Nez Perce community. Instead, this research presents what I see and hear in the Nez Perce community and from Nez Perce folks. I tried my best to build a good relationship with the Nez Perce community, but only focus on a simple and nice friendship with my storytellers; our relationship was only built through conversations. I was trying to not let it fall into uncontrollable complexity. My research methods include archival study and

Indigenous-influenced qualitative interviews. The stories collected through my interviews include both First People stories and life-experience stories. First People stories are the timeless knowledge created by the Creator, and the stories directly teach Nez Perce people the knowledge of what the world is like, how it is created and why it is created. It directly defines who Nez Perce people are and where Nez Perce people come from:

When we look at some of these stories and they talk about the legend-times, prior to the human beings even coming on earth. They have stories about the stars and the large animals; stories about the moon and the sun before the human beings. Even before that there was, how the earth came to be. Then you have the stories of creation. How the animals change from big animal people to small animal people, and how Coyote was created, and he was given all these powers, and then he created the human beings. He scattered all the remains of the monster that he slew in all the directions. And they became the Indians of the western hemisphere. And then Coyote traveled the world and this is where all the Coyote stories come from and start from. Some of those stories are preserved. And then once the human beings came here there was explanations of why human beings did certain things, or why the unknown was trying to be told in a logical way. This is what some of stories tell.

—Allen Pinkham (Interviewed by Josiah Pinkham in November 2001, sited from Lifelong Learning Online)

Nez Perce First People stories are created on Nez Perce land. They fastened the Nez Perce identity with the Nez Perce landscape; and these stories teach people the laws for living on Nez Perce land. Nez Perce people practice the knowledge in First People stories since they are born:

It was the Animal Peoples who also set forth the ways to successfully travel and live upon the land, from providing the instructions in how to fish the salmon and dig the camas, to how to use the sweat house for prayer, healing and spiritual cleansing. As brought forth in the adventures and sometimes misadventures of the Animal Peoples and embedded in their legacy, the oral traditions and the landscape they transformed, are the "teachings," the moral and ethical codes of behavior upon which the very identify of the NimĀipuu is founded (Lifelong Learning Online).

In the telling of the oral traditions, while the stories of Coyote can instruct and instill in the young and reaffirm in the adult a NimĀipuu identity, and while those stories can bring a laugh or a tear as a result of Coyote's antics, the oral traditions do something more. In the act of re-telling these ancient accounts, and especially when told in the NimĀipuu language, the listeners are made participants of the unfolding events. The story's participants witness Coyote throw the parts of the Swallowing Monster to the four directions and create the human peoples, all the while standing alongside the once beating heart of that Monster. The listeners, made participants in the telling, are with Coyote as he fashions his fishnet and renders Frog into stone along the Clearwater River (Lifelong Learning Online).

And once the storytelling has ceased for an evening, those same stories go with the listeners as they travel the identical landscape traveled by Coyote. To view the Heart of the Monster is to re-participate in the story of creation. The accounts of Coyote and all the meanings and significances, all the teachings, are thus embedded in the riverbeds and mountain ridges. The mountains and rivers of the NimĀipuu become morally endowed, continuing to offer practical lessons and spiritual significances for those who listen. In the re-telling of the oral traditions, the landscape, its animals, plants, waters and rocks, are themselves thus revitalized and perpetuated. And the world of the NimĀipuu is continued (Lifelong Learning Online).

I would like to define the life-experience stories as the memory that guides how Nez Perce people practice the knowledge they have learned from First People stories.

Rather than directly defining Nez Perce people's identity, world view and ways of life, the memory of life-experience constantly shapes these aspects. In this thesis, the term "story" refers to both First People story and life-experience story.

When I was doing my interviews, I was involved in story-exchanging when tribal folks told me their life stories: I rarely asked questions because I wanted to make my interviews different from "traditional" interviews. I hoped to have respectful conversations like what people do in traditional Nez Perce storytelling. Thus, I would have "the onus for getting information" through the conversations (Brayboy & Deyhle, 2000: 167). What I often did was reply to them with my stories. I felt resonance during the conversation leading to a desire to share my stories with the storytellers.

Apart from class knowledge, the book *A Little Bit of Wisdom* was the first time I learned Nez Perce life stories. Horace Axtell (1997) told his life-stories in this 217-page book. All the stories are formed through simple language; thus, even with my limited English I could understand them well. There are no complex logical relations, professional terms, or special rhetorical narratives, but this does not diminish his description of the honor, suffering, spirits of Nez Perce people, and his own feelings, moods, and understanding of historical and current social issues. Those important and deep meanings are reflected in the stories of those people he knew and those things he experienced. These stories are neither romantic nor magnificent like *Romeo and Juliet* or *King Arthur*. Because they are Mr. Axtell's life experiences, which are close to the life of many readers, especially the Native American readers, and the historical background was described well in this book. These stories are full of authenticity to me (culturally authentic to me) now and here in Idaho, 40 miles from

the Nez Perce. Of course, if these stories were told within a certain context that were constructed in certain space, time, ways to tell, their power could be more strengthened. But even though I think Horace Axtell's stories can create resonance to many people with different cultural backgrounds, I could feel that to understand him, I do not need a Native background or a great deal of Indian knowledge because there are many common senses of all human beings inside his stories. I would say these stories are like Native American songs. The first time I heard a song in the Water Potato Ceremony in Coeur d'Alene, I could immediately feel a kind of boundless, wildness, doughtiness and even some desolation and loneliness inside the song. After listening to maybe ten Plateau Indian songs, I feel that although they have relatively simple melodies and usually no words, they have powerful expressivity. I think this because many songs were created by the inspiration of personal experience of life and nature, they are from "trickling water", "whirlwind", "sunrise, and so many others" (Axtell, 1997: 15) that are so real and close to people, and these song are not restricted by language. Thus, they are able to create common feelings among people with different cultural backgrounds. I could not find exactly the right words to describe the common characteristics of Native American songs and stories, but I would say they have similar expressivity that comes from an accumulation of a lot of plain, pure and real descriptions of feeling without any kitsch. When you listen to a Plateau Indian song or story, you need to calm down, be patient, feel, and let your emotion gradually grow. I feel that when they are telling stories, their word-speed and intonation are usually mild and homogeneous. They would laugh or lower their voices when they talked about happiness or sadness, but

rarely show intense expression of emotion. They always describe things with simple language without complex sentence-structure or rhetoric. As an audience, this way of talking made me easily calm down and release. It created a kind of comfort and harmony. I am not good at discussing this in English - I rarely participate in discussion in class - but I have to say when I talked with Nez Perce folks, I felt I was willing to become involved in the topics, with the same way of speaking, to share my ideas and experiences. I am not going to mythicize or romanticize Native American storytelling. I just want to emphasize that the way of talking is highly performative, significant for the creation of context, relation, and intensive communication between speakers and audience.

About four weeks after we decided to study the Pacific Lamprey, I brought my research proposal and application for tribal approval to Mr. Nakia Williamson at the office of Cultural Resources Program. Two months later, I received my tribal approval for the research. Following this, I did my IRB (Institutional Review Board, working for human research protections) Protocol application, and my application was quickly approved.

During my research I engaged in conversations with two Euromericans working in the Nez Perce Fishery Program Orofino Department including Mr. David Staller and Mr. Tod Sween; tribe elders including Dr. Silas Whitman, Mr. Leroy Seth, Mr. Charles "Chucky" Axtell, Mr. Gordan Higheagle, and the Halfmoon family (Mrs. Loretta Halfmoon and Mr. Ronald Halfmoon); two younger Nez Perce including Mr. Nakia Williamson and Dr. Yolanda Bisbee, as well as two Nez Perce University of Idaho students, Mr. Easton Powaukee and Miss Sienna Reuben.

Silas Whitman, Leroy Seth, Charles "Chucky" Axtell, Gordan Higheagle, Loretta Halfmoon and Ronald Halfmoon are respected tribal elders. These elders have their long life-experience on Nez Perce land, so they have plenty of knowledge about lamprey, First People stories and other Nez Perce tradition. They are excellent storytellers. Nakia Williamson and Yolanda Bisbee are younger tribe members who have been working on the protection of Nez Perce tradition for many years. Easton Powaukee and Sienna Reuben to some extent could represent the idea of the very young generation among the Nez Perce. David Staller and Tod Sween are the biologists who have been working on lamprey protection and restoration for nearly two decades.

I met with Mr. Nakia Williamson and Dr. Yolanda Bisbee two times in their offices, once with Dr. Philip Stevens before I received the tribal approval and once after. I conducted two group discussions with Dr. Silas Whitman and Mr. Leroy Seth, once with Dr. Philip Stevens together at Silas' house before I received tribal approval, and once at the Clearwater River Casino & Lodge after I received tribal approval. At the Clearwater River Casino & Lodge I also did one-to-one storytelling with Charles "Chucky" Axtell and Gordan Higheagle, as well as a group discussion with the Halfmoon family. I met with Easton Powaukee and Sienna Reuben at the Native American Student Center in the University of Idaho. I interviewed Mr. David Staller and Mr. Tod Sween at the Nez Perce Fishery Program Orofino Department: first, we had a group discussion and then I had a one-to-one interview with Mr. David Staller. Finally, I visited the Cherrylane Hatchery with Mr. Tod Sween.

I recorded ten of my participants' stories with an electronic recorder, and others' stories with written notes. I collected approximately ten hours of recordings in total. As I discussed before, I rarely asked questions during the meetings except with David Staller, Tod Sween, Easton Powaukee, Sienna Reuben and the Halfmoon family. David Staller and Tod Sween are biologists; thus I needed to make sure that I understood their biologist knowledge. Easton Powaukee and Sienna Reuben are young students; thus I asked some questions specifically related to the youths' attitudes toward Pacific Lamprey. Loretta Halfmoon and Ronald Halfmoon were both professors at Washington State University. At the end of the meeting, as an anthropology student, I asked some questions about issues that confused me, such as the *weyekin* belief.

Archival and Published Sources

This thesis also involved collecting First People stories and life experience stories from existing archives, especially from *A Little Bit of Wisdom* by Axtell and Aracon (1997), *Salmon and His People: Fish and Fishing in Nez Perce* by Landeen, D & Pinkham (1999) With the stories I extracted from my interviews and other archives, I tried to present the Nez Perce folks' relationship with the lampreys and the whole of nature, as well as their attitudes toward the old ways of life. Various archives were also used to describe why the population of Pacific Lamprey dramatically declined on the Nez Perce Reservation and in other regions which is discussed in Chapter 3, the ecological significance of Pacific Lamprey discussed in Chapter 4 and consumption of lampreys by different ethnic groups discussed in Chapter 5.

Theory analysis

Apart from perceiving the cultural importance of Pacific Lamprey through the stories, I also looked at their cultural importance from another angle – the creation of collective memory and social identity. By reviewing previous studies (MacIntyre, 1984; Halbwachs, 1992; Shils, 1981; Anderson, 1991; Smith, 1986; Sontag's, 2003) and theory analysis (Assmann, 2008; Assmann, 2012; Assmann& Czaplicka, 1995), I suggest why and how the disappearance of Pacific Lamprey will weaken the traditional part of current Nez Perce identity.

Chapter 3: The Disappearance of Pacific Lamprey in Nez Perce

As a member of the Columbia River Inter-Tribal Fish Commission, I have participated in many fisheries meetings with biologists from the state agencies. It has always amazed me that many of these biologists and scientists do not have any idea about the importance of eels and do not understand the significance that the eel and other species have in the ecosystem. A lot of these educated people think that they know more about fish just because they have been to school, and they give no credit to the tribes for having knowledge about many of these species.

—Julia Davis (Landeem & Pinkham, 1999)

Although this paragraph is quite a personal idea, it indeed reflects a controversial and sensitive situation of current research and popular ideas on lampreys. Since lampreys were found to have entered Great Lakes - Lake Ontario in the 1830s, Lake Erie in 1921, Lake St. Clair in 1934, Lake Michigan in 1936, Lake Huron in 1937, Lake Superior in 1938 - and considered as "causing severe damage to lake trout and other critical fish," to some extent they became "pests" which led to the decrease of the population of "valuable" fish:

Sea Lampreys were a major cause of the collapse of lake trout, whitefish, and chub populations in the Great Lakes during the 1940s and 1950s. These fish were the mainstay of a vibrant and important fishery. Before the Sea Lamprey's spread, the United States and Canada harvested about 15 million pounds of lake trout in the upper Great Lakes each year. By the early 1960s, the catch was only about 300,000 pounds. In Lake Huron, the catch fell from 3.4 million pounds in 1937 to almost nothing in 1947. The catch in Lake Michigan dropped from 5.5 million pounds in 1946 to 402 pounds by 1953. The Lake Superior catch dropped from an average of 4.5 million pounds to 368,000 pounds in 1961. During the time of

highest Sea Lamprey abundance, up to 85% of fish somehow not killed by Sea Lampreys exhibited Sea Lamprey wounds. The once thriving fisheries were devastated. Great Lakes Sea Lampreys themselves, traditionally, have had no economic value.

—Great Lakes Fishery Commission

It appears that because lampreys "were a major cause of the collapse" of other "valuable fish" and themselves "have had no economic value", to some extent this perception led people to ignore the ecological and cultural significance of lampreys. As earlier research (Close, Fitzpatrick & Li, 2002) suggested: "most of the interest in lampreys has been focused on controlling exotic Sea Lamprey populations in the Great Lakes in the United States." When Nyslow and Kynard (2009) did their research on Sea Lampreys, they searched the terms "Sea Lamprey ecology and management" online and found more than 90% of the first 100 papers dealt with Great Lakes issues. We should notice that the lampreys in the Great Lakes are *Petromyzon Marinus*. The Sea Lampreys live in the Atlantic Ocean and its coastal regions, which have similar preying, migrating, nesting and breeding behavior as Pacific Lamprey in Colombia river, but differ in morphology. They are all considered as lampreys in people's mind. "It is likely that human disturbances have impacted Pacific Lamprey (*Lampetra tridentata*) along the Pacific coast." Such fears of negative effects on "valuable" fish have led some managers to exclude pre-spawning lampreys in rivers deliberately (Close, Fitzpatrick & Li, 2002). Many years later, when I was doing this study, I still saw only a very small number of researchers aiming at the significance and protection of Pacific Lampreys.

The Snake River and Clearwater rivers are the two main rivers passing through the Nez Perce Reservation. As a major river in the Pacific Northwest region, the 1,078 mile-long Snake River is the largest branch of the Columbia River. The Snake River rises in western Wyoming, then flows through southern Idaho, then the Oregon-Idaho border and finally empties into the Columbia River at the Tri-Cities, Washington. The 74.8 mile-long Clearwater River flows from the Bitterroot Mountains along the Idaho-Montana border and joins the Snake River at Lewiston. Both the two main rivers through the Nez Perce region belong to the Columbia River system. During the past four decades, the population of the anadromous Pacific Lampreys in the Columbia river basin dramatically declined because the many hydropower dams limited the lampreys' access to historical spawning locations (Figure 3.1); "[e]lectrofishing surveys for larval lampreys in some Columbia River tributaries suggest that there has been low to no recruitment in recent years" (Moser, Ocker, Stuehrenberg & Bjornn, 2002: 956) .

Currently, if lampreys try to reach their traditional spawning locations through the Snake River, they must pass at least four or five hydropower dams (Moser, Ocker, Stuehrenberg & Bjornn, 2002: 956). If they try to come to the Nez Perce region and reach their farthest spawning area from the sea, they need to pass eight dams. Although fishways were built near dams, these fishways were for anadromous salmonids that have greater swimming ability than lampreys and different migration behaviors (Beamish, 1974). In the research of passage efficiency of adult Pacific Lampreys at hydropower dams on the lower Columbia River (Moser, Ocker, Stuehrenberg & Bjornn, 2002), lampreys and salmonids were radio-tagged and

released 3-15 km upstream or downstream from dams. The results show that most salmonids could pass a single dam through a fishway in one day (median passage time) at Bonneville Dam from downstream, but at the same place, only 36%-60% of the lampreys could pass the Bonneville Dam, and it took 4.4-5.7 days. Only 3% of lampreys could pass all the dams from the lowest Bonneville Dam and arrive at their traditional breeding location at the upstream Snake river. We also need to notice that those tagged lampreys were the largest ones, which already entered the entrance of the fishway.



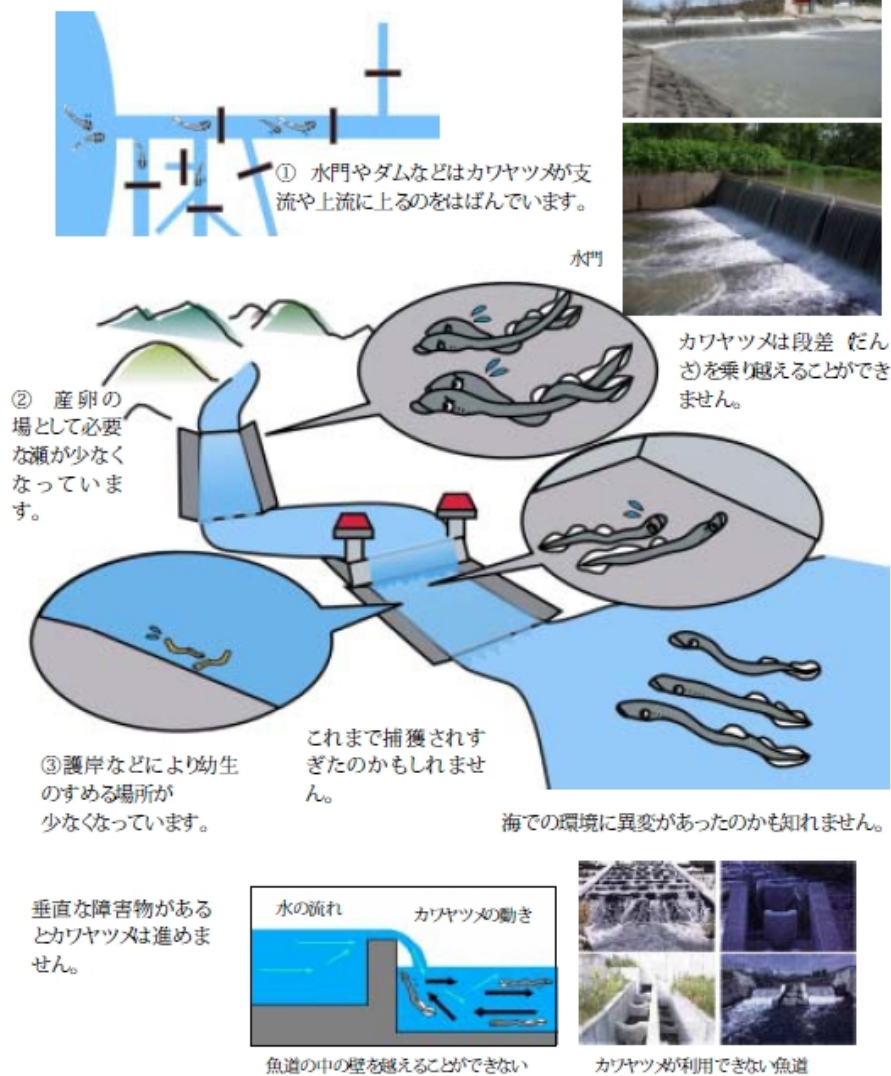
Figure 3.1, Columbia River Basin and the dams on the Columbian River system

Picture from the webpage of Northwestern Division is one of nine U.S. Army Corps of Engineers divisions. <https://www.nwd.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/475820/columbia-river-basin-dams/>

Far earlier than this research, people realized hydropower dams could lead to the extinction of Pacific Lampreys in freshwater. In Elsie Lake Basin, British Columbia, Pacific Lamprey no longer existed as a direct result of the building of five dams on the outlet and in the area immediately surrounding Elsie Lake between 1957-1959, on Vancouver Island (Beamish & Northcote, 1989).

Such a situation also happened in Japan in Ebetsu City, Hokkaido. Since 1984, the catch volume of lampreys sharply increased. The 72 metric tons of lampreys caught in 1986 was the peak. At that time, the Ishikari River provided most of the lampreys for the whole Hokkaido region. However, in the 1990s the catch volume drastically declined. Around 1995 it was 1/10 of the peak volume. Now it is getting smaller than 1 ton every year. The river construction on Ishikari River is the most blamed reason – the construction blocked the lampreys' way of migration to breeding locations. According to the Hokkaido government, river construction had 63% responsibility for the dramatic decrease. Other reasons included agricultural chemicals, bad water quality, reduced water volume, and heavy fishing. People tried to breed lampreys for a lamprey aquaculture industry, but they failed to do so. The local government has been involved in the technical support of lamprey breeding (Data from the official website of Hokkaido Government, Japanese: 北海道庁; Hokkaido Development Bureau, Sapporo Development and Construction Department, Japanese: 北海道開発局 札幌開発建設部; and the Hokkaido official publishing web "Hokkaido Fan Magazine", Japanese: 北海道ファンマガジ). Below is a picture showing how the dams on the Ishikari River caused a sharp reduction of the lamprey population (Figure 3.2).

3) カワヤツメの生活をはばむもの



石狩川のほとんどの支流では利水や治水のために川を横断する施設が設けられています。これがカワヤツメの移動をはばんでいます。魚道があっても多くが移動の困難なつくりになっています。また、これまでの河川改修によって自然の流れが失われ、川底も礫（れき）が流出し、産卵の場として必要な瀬がなくなっています。

Figure 3.2, the Hokkaido government published an article to explain how construction on the Ishikari River blocked the lampreys' migration and breeding and caused a sharp reduction of the lamprey population.

All my participants understand the major reason for the decrease in the lamprey population. Apart from David Staller and Tod Sween who are the specialists in tribe

fishery program, Dr. Silas Whitman probably is the one who knows the most about lampreys and his knowledge includes both Nez Perce traditional knowledge and scientific knowledge.

Silas was the chair of the Tribal Executive Committee and retired a few years ago because of his health condition. Luckily, when I was having lunch with another participant, Mr. Charles Axtell, we met with Charles' nephew and Silas' successor, the current chair Shannon Wheeler. When Mr. Wheeler learned who I was and that I was there for the lampreys, he immediately told me that the lamprey is a kind of creature older than dinosaurs and currently each of the dams will block 50% of lampreys from their way to traditional breeding areas.

When I discussed the negative influence of dams with the Nez Perce people, they often talked about how dams influenced fish and lampreys. But I feel there are other reasons why people do not like dams. Charles Axtell told me a story that made me contemplate. When he was very young, a day when he was talking about the new Dalles Dam at home, he suddenly found his grandmother turned back and cried. He asked his grandfather why she cried. His grandfather asked him to never talk about the Dalles Dam in front of his grandmother. I did not interpret Charles' asking why his grandmother cried for the new dam; it seems I could understand why she cried at that moment, although I could not know exactly why. Maybe I should not speculate on his grandmother's feelings, especially from an environmentalist perspective. Probably we could sense her feeling through reading some Nez Perce people's words:

The earth is our mother. She should not be disturbed by hoe or plough. We want only to subsist on what she freely gives us. Our fathers gave us many laws which they had learned from their fathers. These laws were good.

---- Chief Joseph

The earth is part of my body...I belong to the land which I came to. The earth is my mother.

----Chief Antelope

The Creator gave us the language. He gave us the color of the skin. He gave us culture, tradition, and so many other things. The Creator made certain things in certain ways...Mother Earth and Creator are making a lot of changes: earthquake, storms, fires – something has developed...it's a warning to other nationalities trying to change Mother Earth. It's something that wasn't made to be this way...Probably the only times we disturb Mother Earth is when we dig our roots or dig our special bathing places or dig our burial place.

----Horace Axtell

Our traditional relationship with the earth was more than just reverence for the land. It was knowing that every living thing had been placed here by the Creator and that we were part of a sacred relationship...entrusted with the care and protection of our Mother Earth, we could not stand apart from our environment.

-----Elsie Maynard

Since I was little, I have been told that the earth is our mother and we must protect her – this is a common saying for environmental protection education. Children in China often learn a story that tells us that a giant god called Kuafu died for chasing the sun, and finally, his body became mountains, rivers, and trees. However, I never treated the land and nature as cherishing my mother or my body. I had a very limited

knowledge of the relationship between the Nez Perce people and the land, the Mother Earth. But during the past year, I significantly felt that the Nez Perce treat their land with respect and appreciation. Mother Earth cannot be intensely disturbed, or it will bring disasters on the people who live on this land. The land and old ways living on it together determine who they are.

Among many kinds of spectacular artifacts, the dam is not among those that could excite me. I have been to many dams, the Dworshak Dam in the Nez Perce region, the Hoover Dam, and big dams in China. In my memory, the huge dams are always described as manmade miracles that successfully vanquish wild nature, and that they are the victories of humankind, the great fruits of modernization and industrialization; they symbolize the power of states and civilizations. I know how dams can benefit agriculture, power production, and flood control. I also know that dams can have a negative impact on the local biosphere, meteorology and geologic conditions.

However, my repugnance to dams came from a direct viewing – I feel pressure from the huge wall, and I feared the temporarily controlled power behind that wall. If I am allowed to imagine, I think the Nez Perce people also can feel a kind of power when they look at the dams. That is the power of nature restricted by human constructions, that is the power of Mother Earth who has been terribly disturbed. I could feel their worry and even fear, and their worry and fear are in sharp contrast with others' joy of controlling wild nature. The dams remind me of an old Nez Perce story about one of the First People, Coyote. I would like to quote this story at the end of this section:

Once Coyote was walking up the river on a hot day and decided to cool himself in the water.

He swam down the swift river until he came to the waterfall where the Wasco people lived.

Five maidens had dwelt there from ancient times. This was the place where the great dam kept the fish from going upriver. While he was looking at the great waterfall, Coyote saw a Maiden. Quickly he went back upstream a ways and said, "I am going to look like a little baby, floating down the river on a raft in a cradle board, all laced up." As Coyote was drifting down the river, he cried "Awaaa, awaaa." The Maidens, hearing this, quickly swam over, thinking that a baby might be drowning. The eldest Maiden caught it first and said, "Oh, what a cute baby." But the youngest maiden said, "That is no baby. That is Coyote." The others answered. "Stop saying that, you will hurt the baby's feelings." Coyote put out his bottom lip as if he were about to cry. The Maidens took the baby home and cared for it and fed it. He grew very fast. When he was crawling around one day, he spilled some water on purpose. "Oh, Mothers," he said, "Will you get me some more water?" The youngest sister said, "Why don't you make him go and get it himself? The river is nearby". So the Maidens told Coyote to get the water himself. He began to crawl toward the river, but when he was out of sight, he jumped up and began to run. The oldest sister turned and said "He is out of sight already. He certainly can move fast." "That is because he is Coyote," the youngest said. When the Coyote reached the river, he swam to the fish dam and tore it down, pulling out the stones so that all the water rushed free. Then he crawled up on the rocks and shouted gleefully, "Mothers, your fish dam has been broken!" The sisters ran down and saw that it was true. The youngest Maiden just said, "I told you he was Coyote." Coyote said, "You have kept all the people from having salmon for a long time by stopping them from going upstream. Now the people will be happy because they will get salmon. The salmon will now be able to go upriver and spawn. This is how Celilo Falls, came to be, where the Wasco people are today. As a result of Coyote tearing down the fish dam, salmon are now able to come upriver to spawn on the upper reaches of the Great Columbia River and its tributaries.

-----Allen Slickpoo (Sited from Landeen & Pinkham, 1999)

Through presenting this story, I hope to indicate that the old wisdoms that were generated on this land and passed from generation to generation has informed the Nez Perce people since long ago: that dams should not occur on the rivers or the ways of the fish would be blocked; Mother Earth should not be disturbed intensively, or it will bring disaster to people; people should share with nature rather than exploit it. I have learned many Nez Perce wisdoms in the past year. To me, as an outsider, these old wisdoms are not merely cultural traditions that occurred only in people's stories. These wisdoms are living strategies extracted from Nez Perce people's very long-lived experience on this land. Many ideas are very scientific. They are created based on people's comprehensive and precise understanding of nature and are proved by trial and error. They are still guiding Nez Perce people's life today.

Chapter 4: The Ecological Significance of Pacific Lamprey

Pacific Lampreys live in freshwater during the first four to seven years of their lives. The larvae go through metamorphosis then migrate to sea and later back to rivers as adults for breeding. Living in stream benthos, larvae leave their nests two or three weeks after hatch, then bore into the soft sediments in the shallow areas along the stream banks (Richards, 1980). Larval Pacific Lampreys play a role as "an essential component along with aquatic insects in processing nutrients, nutrient storage, and nutrient cycling" (Kan, 1975). Larval lampreys feed on detritus, diatoms, and algae suspended above, and within the substrate, they may digest only 30-40% of the food while passing other undigested food. The undigested food is processed into fine particles which are easier for other creatures to consume. Larval Pacific Lampreys themselves are also a food source for other animals such as Coho Salmon.

Adult lampreys are still important for the river ecosystem. First, their dead bodies provide nutrition for aquatic creatures, especially when many adult lampreys die quickly after breeding. Nislow and Kynard (2009) argue that anadromous Sea Lampreys are significant importers of marine-derived nutrients and materials. They describe anadromous Sea Lampreys' unique ecology and life history as to "use the right habitats (small, oligotrophic rivers and streams) at the right time (late spring, a time of high nutrient demand in north temperate systems) and do the right thing (die after spawning)", to make them potentially important contributors of marine-derived nutrients to freshwater ecosystems.

Second, usually unexpected for many people, their nesting behavior brings a large impact on the river ecosystem. Spawning Sea Lampreys are ecosystem engineers.

Their nest-building activities can significantly and persistently reshape the soft bottom in water and provide "increasing habitat heterogeneity" and favor "pollution-sensitive benthic invertebrates and, possibly, drift-feeding fish" (Hogg, Coghlan, Zydlewski & Simon, 2014: 1294). Sea Lampreys build their "mound and pit structures" nests that are structurally like Pacific Salmon redds (spawning area). This activity may also benefit other biotas such as improving the quality of spawning habitat by "removing fine sediment from interstitial spaces, sorting particles and decreasing particle embeddedness" (Hogg, Coghlan, Zydlewski & Simon, 2014: 1294). Researchers hypothesize that Sea Lampreys' nesting behaviors create fine-sediment coverage, decrease gravel and cobble embeddedness, improve interstitial spacing, increase "intragravel permeability, and enhance depth for their habitat patches" and create "velocity heterogeneity relative to neighboring unmodified patches" (Hogg, Coghlan, Zydlewski, & Simon, 2014: 1294).

It should be noted that the research findings presented in the last paragraph are mostly about Sea Lampreys. Through research hosted by McNary Fisheries Compensation Committee and participated in by many authors, reviewers and supporters have proved that adult Pacific Lampreys contribute to the ecosystem in similar ways as Sea Lampreys, although this research did not provide as many details as those researches on Sea Lampreys:

Spawning for Pacific Lamprey in the Columbia River Basin generally occurs between March-July but varies geographically and with environmental cues, such as water temperature and stream discharge. Adults will move to spawning grounds from winter holding locations during this time. Once a suitable spawning habitat is located in gravel substrates, Pacific Lamprey

will either pair up or gather in small aggregations, commonly one female with multiple males
Adults may construct multiple redds in the same area...Pacific Lamprey constructs redds in
small gravels similar to salmon...Like salmon, adult Pacific Lamprey dies after spawning.
Their decaying carcasses provide a considerable food source for many organisms and
increase freshwater supplies of marine-derived nutrients...Pacific Lamprey provides
freshwater ecosystems with valuable supplies of marine-derived nutrients.

Chapter 5: The Consumption of Lamprey in Nez Perce and Other Regions

In this chapter I explore the stories of lamprey as food, historically and currently, on the Nez Perce Reservation and other regions. Today, the lampreys are still consumed in many places, and the industries still maintain a large scale in some regions. During my interviews, I heard that many young Nez Perce people are not interested in lampreys because they look like snakes, have a sticky body and a horrifying mouth, and their meat looks very oily. So, with these stories and pictures that I present next, I want to show that lampreys could be a useful food resource for people.

Let us start with Nez Perce people. Lampreys are considered as valuable as salmon by many Native American tribes. They are a delicacy for many of the Northwest Indian people, including the Nez Perce. According to my participants, there were different ways to prepare lampreys for consumption, including "boil and split them open before grilling" or "skewered and dried on sticks to be eaten later"; sometimes they were "dried in an enclosure over alder smoke". Nez Perce former longhouse leader Horace Axtell's grandaunt, a medicine woman, liked to collect the lamprey fat dripped off when cooking over a fire; she then stored the fat in a bottle and used it for medicines and lamp oil.

Nez Perce people annually collected lampreys when they migrated upstream, and many stories of catching lampreys in Lapwai Creek and other tributary streams were passed through generations. In the conversations with Nez Perce folks, catching lampreys was described as a joyful collective activity; lamprey meat was delicious, smelled good, and was full of nutrition. Nez Perce member Jaime (Landein &

Pinkham, 1999) vividly described how their family caught and cooked lampreys in his childhood:

When I was little, we would drive over to the Dalles to get eels. We would go out at night. We put on wool socks so we could pick them off the rocks. With the aid of a flashlight, one of us would find them clinging on the rocks, and the other would pull them off and put them into a gunny sack. Sometimes we would cook them on sticks over an open fire. That was always my favorite way to eat.

Catching lampreys was often a collective activity, as tribal member Isabelle Saunders (Landeem & Pinkham, 1999) described :

The Snake River near present-day Asotin was a place where the Nez Perce would go to collect eels. Many times they would have a great feast of eels along the river bank. Several small fires would be going surrounded by eels that were skewered on willows. This was a time of celebration.

Another Nez Perce member, Rod Wheeler (Landeem & Pinkham, 1999), recalled how elder women processed lampreys:

I used to watch some of the old ladies clean the eels. There was a knack to doing it. They would snap the head off by splitting the head almost all the way around but not the way through. Then they would snap the head off with all the nerve ending attached.

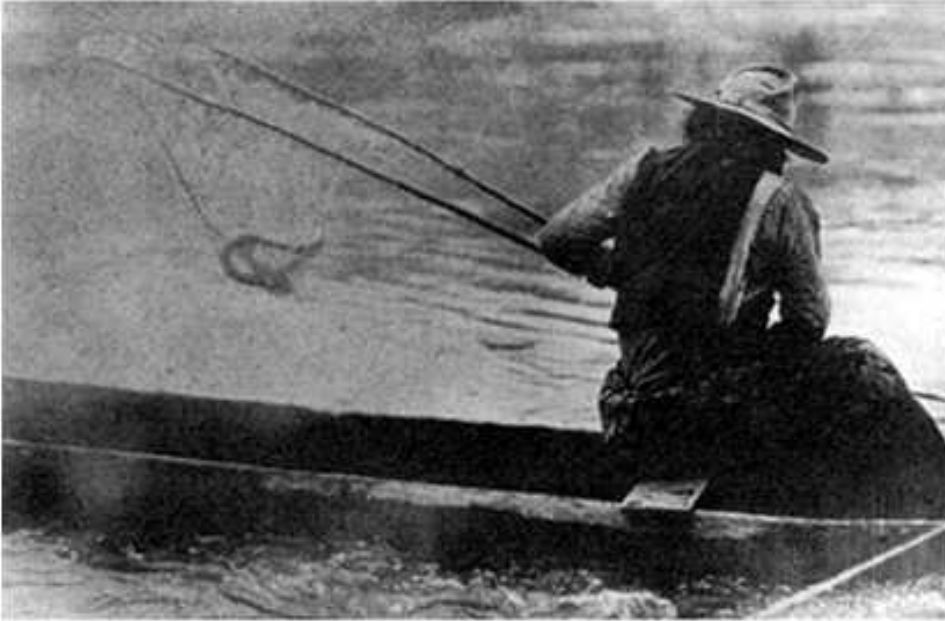


Figure 5.1, Nez Perce tribal member James Williams from Lapwai, Idaho, dip netting Pacific Lamprey in the Clearwater River, 1920.

The second time I met with Dr. Silas Whitman and Mr. Leroy Seth, they described how people cook lampreys and how people make "food in all use":

They (Nez Perce people) know what they do. They take a stick, poke through the mouth, and then cook it. The eels are very oily fish, very oily like sockeye, salmon, blue back. The oil drips down, and you could smell it... but it tastes good. (Leroy: it's good.) It is just, you know, you don't even need salt. I mean, so it's so salty, yeah, has its own salt, it's an amazing creature. It comes down to the ocean and takes, brings everything from the ocean with it. Its cousins are the real eels like they have in Asian though. In China, they have the eel. Those are real eels. Yeah. This one they call a lamprey, but it's like a second cousin to [eels]... So, they cooked them, and they cleaned them off, but they put them on a boat. You look at the bowl, and it's about that much grease in the bowl - Oil. So, my understanding is that they used to use oil. Oil would be something that they would pull over things. The clothing they would use onto one. You wrap an arrowhead, or you wrap a shaft, you take that oil from the lamprey, put that on

there. It's like black pine. It just stays there. And I toughened up with buckskin shrink it, and it will be really tough. You had to use a knife to cut it off, let it dry, and so very many things there. And people realize, wow, why is that what we're eating (Leroy smiled).

When Silas was telling the story, he was not just talking. I feel he was immersed into a joyful memory. He gesticulated for me to understand how people poke the lampreys, how the lamprey oil is gummy on hands, and how people wrap lamprey oil on arrows. He laughed and varied his tone along with his storyline:

The birds and hawks and the eagles in the high mountains, they hunt and hunt and hunt. You see them flying. When they down, flying low over the creeks. You know that the juvenile eels are in there because they stay in the, in the sand and creeks seven years. They'll stay in there, and they started out maybe, but they become a larva about that long. And then they'll hatch out. They'll stay in the habitat and that sand for seven years before they emerge. Then they are about maybe about that long, like a little over maybe a foot long and then they'll still leave. They want to go to the ocean. Then they'll migrate... I don't really know that much, that big history.

When he was talking about birds, hawks, and eagles, he spread his arm showing how they swoop down and circle above the water, searching for eels with their sharp eyes. He raised his hand at his eye level to show how people would look for the eels underwater. When we first met that morning, he had a solemn face and walked slowly with his crutch, but when he told these stories, he looked like a young man full of energy.

Easton Powaukee is a third-year undergraduate student in fishery studies. He is exceptional to me. I know most Nez Perce people have both a Native American family name and an English name or have English names with similar meanings as

original Native American names, but Easton is the only one using his Native American family name as his official name. Although his family name is relatively easy to pronounce, I still asked him to pronounce it to me at the very beginning of the meeting. My own name—Muyuanye—is very difficult for non-Chinese to pronounce, especially the syllable *yuan*. But my professors always insist on learning my Chinese name again and again rather than easily accepting my English name, Matthew. To them, Muyuanye is my real name, and calling me with my real name is respectful to me.

"It's good to have an Indian name" is the first chapter of Horace Axtell's (1997) book *A Little Bit of Wisdom: Conversations with A Nez Perce Elder*. In this chapter, he tells the readers that English names do not carry family history, but the Indian name reminds one of his past. The meaning of his Indian name Isluumts is hard to say, but he has his own idea and belief of what it means. Indian names are from elders, being given with agreement by the owner family or sometimes a group of people through the Name Giving Ceremony. Only having an Indian name, you can get to The Good Land, The Good Place ("Old belief"). Indians must have an Indian name in order to join the War Dance Circle or Seven Drum Religion. Because the Indian name is so unique to a Nez Perce person, I felt I should learn to pronounce Easton Powaukee's name accurately at the beginning of our meeting.

I have met with lamprey eaters and people who do not eat lampreys. From all those stories I have learned, I know that today many Nez Perce youth do not eat lampreys for two main reasons. First, lampreys are hard to find in the Nez Perce region. Many lamprey eaters could not have lampreys to eat unless they could frequently go

downstream to find lampreys or have relatives who could provide them. Second, influenced by the culture outside, or because of personal taste, many young people think lamprey is too oily, and it is a very unusual food. However, Easton thinks lamprey is good to eat, and he prefers to have them cooked on a fire. As he said, "I know they can be super oily, but cook it over a fire, it's less oily". Even though he likes lampreys, he might only eat them two times every year.

Sienna Rueben is another university student I met. She learned a lot of things about lamprey from her grandfather, but she has not heard of very many people being able to fish for them or find them today in the Nez Perce region. The only place that she knows that lampreys were held was at the Cherrylane Hatchery.

Mr. Charles Axtell once could get some eels from an old friend who worked in fisheries conservation. His old friend used to go to streams and caught salmon and eels. This old friend knew that Charles likes eels, so he brought Charles about 20 eels every time when he went to streams to fish. Charles received eels from this old friend every year. "And he passed away a couple of years ago. So, I haven't had any eels for a couple of years." Then Charles smiled; he said that he could do that himself, get eels down there. But I feel that his age probably makes it difficult to drive or boat hours to streams to catch eels.

Mr. Gordan Higheagle is the one who could frequently access traditional food because his children and relatives who fish a lot could send "canned stuff and eels and smoked salmon...a couple of this and a couple of that, I get to taste them all the time, so I don't forget it."

Nez Perce people treat eels as a delicacy; once this delicacy was plenty on this land. They never exploit it, and they share it. This philosophy forms a part of respect to nature, and also a way to maintain the ecosystem for long-term survival. As Gordan told me:

That's our rule. This is what we're, we're growing up with. Um, eel is one part of all of them. All of them that, that food. And where I got from it was that my brother, his name was Larry Macfarlane. He taught me a lot of stuff about hunting and fishing and taking care of the games and everything. He taught me all of the things, but the biggest thing that was taught me was that we only take what we need. We never take any more than that. And then we share it too. I mean, we don't want, it's not just for individuals to eat, and [we] share it. There's always that intent. We look out for each other because we're all one big family and family looks out for the family. So it was always that emphasis, and I remembered the emphasis of that he placed upon me was that, um, that, you know, we're basically [have] a responsibility that we have to ensure that the resource keeps coming... That was the big thing in my mind that what I learned about in eels... Everything is one piece of that puzzle... what we do and how we survive. And so that was, that was always stressed upon me, that when I was younger, [a] boy, [a] little guy.

Nez Perce people have consumed lampreys for so many years. This delicacy carries not only nutrition, but also memories of a way of life, memories of places, memories of family experience, and memories of how they deal with nature. Along with the disappearance of Pacific Lampreys in the Nez Perce region, these memories might also disappear in the future. One of my participants, Mrs. Loretta Halfmoon, told me that many people have no idea how to catch and cook eels:

They don't know how to catch it... When the yield has gone up on a fall, you catch the bottom one.

They don't know how to cook it either...They barbecue it, and all the oil goes down...then you can put barbecue sauce, or you can put other kinds of sauce. You know, if they poured beer on it, it probably would taste really good.

Before I begin to talk about the lamprey consumption culture in non- Native American communities, I want to point out some mistaken ideas when some people think about Native American ways of life: we cannot arbitrarily say "it is/isn't O.K. for A to do this because B, C, D, E do/don't do this." The correctness and rationality of one people's specific social activity cannot be proved or denied by other peoples' attitudes on the same activity—many people have realized that "deny" is not right but still are practicing "prove". For example, we must not say "it is reasonable for them to eat lampreys because others in Europe and Asia also eat lampreys." We must not say this because they eat lampreys due to their way of life which developed from their experience with nature and their spiritual belief—there is no relation with others' attitudes on lampreys.

I clarify this because some people might think I am going to juxtapose Native American consumption of lampreys and others' consumption of lampreys in order to support the Nez Perce ways of life. No. Here, I just want to show that lampreys could be good food for people. When Euro-Americans came to the Northern U.S. for fur trading in the early 19th century, they consumed Pacific Lampreys as food. In 1812, Robert Stuart led the men of the Astor party on a voyage up the Columbia River. They traded with the Umatilla Tribe. In Robert Stuart's narratives, he wrote, "Saturday 25th This day we found intolerably hot, and after coming 15 miles stopped at an Indian Village where traded 4 horses having in the course of our [today's] journey

procured 5 others. Here we got some Lamprey eels, which with a kind of chub seem peculiar to these waters above the Falls. Stayed here the 26th" (Stuart, 1812). Earlier fur trappers not only consumed lampreys as food, but also used them as bait for capturing coyotes.

Lampreys once were widely consumed in Europe. In Roman ages lampreys were already considered as "regal food"; at that time, lampreys were not only considered as functional food but also as unusual pets (Renaud, 2011). Finely cooked lampreys were exclusively for noble classes. The most famous story about lampreys in Europe might be the death of Henry I of England. According to the chronicler and historian of 12th century England, Henry of Huntingdon, Henry I of England, ate too many lampreys and felt ill after that. His condition grew worse after a week, and he finally died (Warren, 2003: 467-468). Although we are not sure about the authenticity of this story, in medieval Europe, both Sea Lampreys and European River Lampreys were indeed regularly captured and consumed by British noble classes. "They were especially appreciated during fasting periods because their taste was considered much meatier than that of most other fishes" (Docker, Hume & Clemens, 2015: 7).

In 1200, the city of Gloucester was fined by King John for "forgetting to send him a lamprey pie at Christmas" (Docker, Hume & Clemens, 2015: 7). In 1242, King Henry III was reported to pay a large amount of money for lampreys (Skinner, 2012). In the 18th century, "lampreys (particularly the European River Lamprey) came to be exploited more and more efficiently in England and, given their apparent abundance, declined in value—culturally and monetarily" (Docker, Hume & Clemens, 2015: 7). Queen Elizabeth II received a baked lamprey pie when she was coronated in 1952,

in her Silver Jubilee in 1977, and in her Diamond Jubilee in 2012 (Renaud, 2011).

Lamprey were also consumed in other regions of Europe (Figure 5.2, 5.3).



Figure 5.2. “Lamprey à la Bordelaise”

Picture from Lover of Creating Flavours

<http://www.loverofcreatingflavours.co.uk/2015/03/eat-more-fish-lamprey-a-la-bordelaise/>



Figure 5.3. A lamprey pie

Picture from

<https://www.npr.org/sections/waitwait/2012/06/03/154196783/a-parasite-fit-for-a-queen>

Asian people also have a long history of consuming lampreys. In China, lampreys are consumed in northeastern regions. Although they are not a popular food, in traditional Chinese medical theories lampreys were considered as medicinal food that is good for the human body. In the book *Medical Fauna of China* (1979: 123), a traditional prescription for using lampreys was recorded. It described lamprey meat as “clearing and activating the channels and collaterals” in the body; it was used to “clear liver and improve vision”; and was described as “nourishing blood and eyes.” Consuming cooked lampreys or applying ground lampreys could treat hemiplegia, nyctalopia, and swollen eyes. In Japan, there is also a long history of consuming lampreys, and lampreys are still widely consumed today. In the *Standard Tables of Food Composition in Japan* published by the Japanese Ministry of Education, Culture, Sports, Science and Technology, the ways of cooking lamprey and its nutrient content are recorded. Among Japanese folks, lampreys are considered as medicine for treating blindness. Today in Japan, there are special shops and restaurants that sell only lamprey products (Figure 5.4, 5.5).



Figure 5.4. Japanese lamprey products shop and restaurant

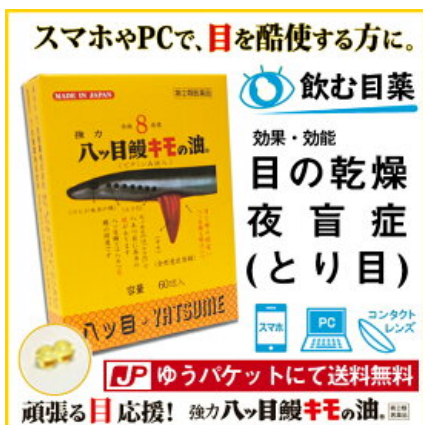


Figure 5.5. Japanese medicine made of lamprey and cooked lamprey

In New Zealand, most New Zealanders have very little knowledge of lampreys today. However, in the past Maoris considered lampreys as a great delicacy and developed advanced techniques to catch them. One method is called the lamprey-weir or *utu piharau* in the Maori language. These lamprey-weirs were “commonly used on the Whanganui River and consisted of large wooden barriers built on the shore with gaps spaced along them, [when] the river was in flood the lamprey would swim up the edges of the river and then reach the barrier” (James, 2008: 17). Sometimes the lamprey-weirs could be built and functioned in a very sophisticated way, shown in Figures 5.6 and 5.7.

Another recorded method is the *whakaparu piharau* which was also a type of weir “made of stones and lined with ferns and grass; [the] *whakapua* was a bracken mat pegged on the riverbed. When enough *piharau* (lampreys) were caught, it was rolled up and taken ashore” (cited from *Te Ara*, a government online encyclopedia of New Zealand).



Figure 5.6, An old lamprey weir, picture and description cited from *Te Ara*
 “This utu piharau (lamprey weir) is on the banks of the Whanganui River, shown here in the late 1800s. Lamprey weirs were built around March, before winter rains swelled the river.”

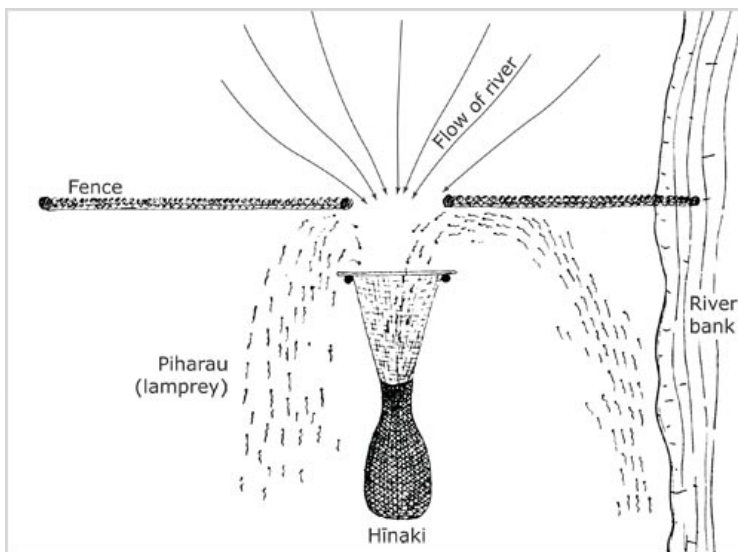


Figure 5.7, How lamprey weir worked, picture and description cited from *Te Ara*
 “This diagram shows how piharau (lamprey) were caught using a weir. Piharau would swim upstream, staying close to the river bank. When they hit a fence jutting out from the bank, they would search for an opening to get upstream. As they tried to get through the gap, the sudden force of the current would sweep them into the weir.”

Lampreys are good food for Native Americans and also for many others around the world. There are potential markets in both Europe and Japan where wild lampreys are imported. Today in Europe, far fewer people still eat lampreys than in the past. In

the U.K., rather than popular food, lampreys have become popular baits for angling. Commercial catch is still the main way British lamprey suppliers are involved. The market maintains a large demand for lampreys; meanwhile the government has imposed fishery restrictions on lamprey commercial catches. Therefore, a certain amount of lamprey is imported to support domestic markets. In the U.K., the lamprey market has had enough force to “[alter] the source of lamprey supply, a pattern frequent in the wildlife trade” (Foulds, L W & Lucas, C M, 2014). Figure 5.8 shows the British lamprey-bait supply chain. Actually “there are no formal data on imports and exports,” and many suppliers did not know where their lampreys come from. “[S]imple but poorly known markets can drive international, largely unregulated, supply of conservation species, often to the ignorance of regulatory authorities,” as Foulds and Lucas argued (2014).

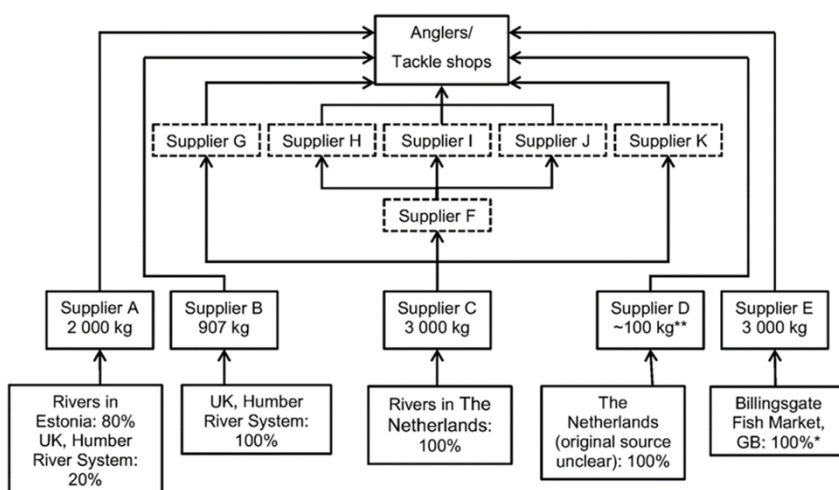


Figure 5.8, Current lamprey supply chain of bait market in U.K. Picture from Foulds, L W & Lucas, C M

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0099617>

In Japan, as mentioned earlier, the construction of dams and flood control significantly changed river systems, which made it difficult for lampreys to grow and

breed. According to the Alaska Trading Company of Japan (2016), the catch volume declined year after year during the Showa 60's (1985-1995), and the amount has been decreasing to such an extent that it cannot be confirmed in year of Heisei 20 (2008). In Ebetsu City, which has a long history of lamprey consumption and probably the strongest lamprey culture in Japan (Figure 5.9, 5.10), the catch volume of lamprey experienced a very sharp increase and decrease during 1980s and 1990s. Around Hokkaido Island, where Ebetsu City is located, lampreys were commercially caught since the Meiji Era (1968-1912); this source once supplied most lampreys for the country. But today, Japan annually imports a large volume of lamprey from Alaska (Figure 4.11), where people catch a vast number of wild lampreys in the Yukon River (Bodony & Galena, 2015).



Figure 5.9, A well lid in Ebetsu City, showing a traditional way of catching lampreys



Figure 5.10, The cages used to catch lamprey, also shown on the well lid above



Figure 5.11, Lamprey fishing on the Yukon River, Alaska

We have seen that many regions around the world have a lamprey culture. The consumption of lampreys is not merely a hobby or a delicacy of a group of people; it is a way of life that many nations have learned through their fight for survival. It is in the history of America, Asia, Europe, and Oceania. Today, in such an age that resource materials are far more abundant than before, people have more choices for more efficient and convenient foods. Some people choose to change, and some people still decide to stay with old ways or a part of old ways. Among the Nez Perce

there have been many meanings attached to lamprey consumption. As elders always told me, "this is our way of life," the consumption of lampreys has become an inalienable part of Nez Perce identity, firmly grounded on Nez Perce land.

We might think the lampreys are still abundant in America. However, what happened in Ebetsu City and the Colombia River taught us that the population of lampreys in a certain region can collapse in a very short period under the impact of human activities, including dam construction, water pollution, and heavy fishing. In Ebetsu City, collapse occurred in just ten years; in Elsie Lake, the time was even shorter. The impact of rapid declines on ecosystems is still not clear. Thus, this thesis requests recognition of the Pacific Lamprey and strongly stresses the necessity of the restoration of their population.

The Nez Perce have a large and advanced fishery and are already involved in lamprey protection and restoration. There is no doubt such a program could promote the current ecological system in and around the reservation and might also provide potential commercial opportunities.

Chapter 6: The Cultural Significance of Pacific Lamprey and Its Restoration in Nez Perce

On January 24th, 2019, I finally had the opportunity to formally meet with the lamprey restoration team. After almost two hours driving through the narrow and slippery roads in the mountains (later, I was told that GPS chose a "back way" for me), I finally arrived at the Nez Perce Fishery Program in Orofino, 20 minutes later than the appointed time. What I did not expect was that the two men waiting for me there were Euromericans. It was not the first time I saw Euromericans working in tribal offices, but it still surprised me. David P. Statler, Director of Resident Fisheries, has been working for the Nez Perce Tribe for 35 years; he formally retired eight days after our first meeting. After a brief greeting and self-introduction, David showed me the *Pacific Lamprey Habitat Restoration Guide*, produced by McNary Fisheries Compensation Committee, and pointed at the cover page. There I saw Elmer Crow's picture. I heard the story of Elmer Crow from the filmmaker Patricia Keith who inspired me to think about my special relationship with the tribe before I went to Orofino. Elmer was one of the earliest people who decided to do something for Pacific Lampreys, and he and his family were devoted to the lamprey cause for more than ten years. Many people call him Eel-mer, or Eel-man, but he did not like the nicknames, as Mr. Charles Axtell told me later. Elmer and his family members worked with people in the lamprey protection team, including David and Tod; they collect lampreys in the streams closed to the ocean in summer and release them in the Nez Perce region in the second spring, allowing them to access their traditional spawning areas.

David told me that they have a Facebook page and a website for Pacific Lampreys. They want to use social media to present the true value and meaning of the Pacific Lamprey, but I went to the Facebook page and saw just a small number of visitors.

To help me know more about Elmer and his plan, David showed me a video called *The Extinct Fish* (it is also called *Why Pacific Lamprey Matter to Columbia Basin Tribes*). "He was a good food resource; he was easy to catch; he was plentiful. Eventually, he was one of us" as one elder said in the video. Then Elmer said, "how do we let something at least 450 million years old go extinct, shame on us, the whole bunch of us, for not paying attention to what was going on." In the video, Elmer kept calling lampreys "my brothers" – "my brother eels are cool," as he said. Elmer's words indicate that the Nez Perce people's desire to protect Pacific Lampreys is due to not only their ecological significance and the need for food resources but also other reasons; I would say, cultural reasons.

Rethinking the “respect” in the First People stories

Pacific Lamprey is not an influential cultural icon, but it helps form Nez Perce traditional culture with many other old ways of life including hunting, fishing, fruit gathering, root digging, singing, dancing, praying, and storytelling. Of course, Nez Perce culture is far more complicated than these, but these activities are the typical ones. During the communication between Nez Perce culture and European American culture, we can see that many new things have intersected with Nez Perce traditional ways of life; together these construct the Nez Perce life today. These new things include Christian religions, new education systems, new collection and consumption of means of subsistence (like jobs and food stores), and new media. However, there

are core values that accrued from many years' life experiences and are still carefully kept and practiced among the Nez Perce. These core values could last long and work for the continuity of identity, and the connection between the old generation and the young generation. "Respect" probably is the most important value. It is the integration and condensation of many aspects of traditional cultural foundations such as religion, food collection, and inner community relationships. Today, many old ways of life are not as frequently practiced as before, but "respect" is well inherited as a significant and special part of Nez Perce identity, and as a connection with tradition. It still guides the life of the Nez Perce people. I believe that the lamprey is related to the traditional cultural, which is inherited as a connection with the past and has traditional connections to identity; it is still tightly fastened to the idea of respect. This is one of the reasons why the Nez Perce people want to protect the lamprey. Next, I look at the issue through four aspects.

People who are familiar with the Nez Perce culture often know the story that Coyote created human beings. In case some readers might be not familiar with details of this story, I quote the story told by told by Mari Watters (1991, sited from Lifelong Learning Online):

Coyote...was going upstream. Coyote is a-a-lways going upstream. And... he's going upstream, and he's going along the Clearwater and he noticed...that Salmon...were having some difficulty there, so, "I'll build a fish ladder so that the Salmon can go upriver and feed my people."

And so he's busy working along there, And...a Magpie flew over and says "Wha-a-t's you doing, Coyote?" And Coyote looked up and says "I-'m-m building a fish ladder for the fish to

go up, you know, to feed my people." And...Magpie looked at him, "Ah-h-h-h, there's no reason for the fish to go up there. The Monster, Its-welks, ate them all up." He's up in the valley, near Kamiah." And Coyote says, "Oh-h-h-h, that's what happened to them. Oh, no wonder nobody's been around to help me."

So ... he starts up that way and he stops along the way and he takes a sweat bath. He cleans himself up re-e-al nice, you know, and he says, "Well, I'd better sweat really good to get my power, and also to clean myself in case the Monster...if he should eat me he won't find me repulsive!" And so he takes a sweat bath.

And along the way he's going up over ...the Camas Prairie, and he stops and he gets some flint and makes some knives, flint knives, and makes something to start fire and he grabs some...dry moss and things.

As he goes along, he gets some...camas and some...elderberries and other...serviceberries and things like this and he puts them...all in his...pack. And...he gets himself and he's on his way, and he's making these ropes out of hemp.

And he goes along, ah-h he's thinking of a plan. He said, "Oh-h-h, I miss all my friends. I was wondering where Fox went, you know, Oh-h-h."

So he...gets up to the top of the prairie, "Well...I'd better tie this rope around Mason Butte..." And he goes and ties it around there, and he goes up and ties one rope around Seven Devil Mountains, and the other around ... Cottonwood Butte... And he ties them around his waist And Coyote gets up to the Breaks and looking into Kamiah, and, "Ah-h-h, I don't want him to see me right away." So he covers himself...with clay and he's sort of...hard to see And he pe-e-eks over the side there, you know, and spreads the weeds...and grass and what not and lo-o-oks over and sees the Monster. Monster has just eaten a whole bunch, and he's sort of laying there ... sleeping, with his head on his hands, you know, sleeping away, "ah-ah-ah-ah." (whispering voice). Coyote yells out, (whispering voice) "Its-we-e-lks, Its-we-e-lks...!" (loud

voice). The Monster looks around, "Who's that? you know, who's that calling me?" He looks around...over...the Breaks, and he can't see anybody. Coyote is well-camouflaged... And...he says, "Who is that?" And Coyote says, "It's me...!" (louder) Monster looks, "'It's me'? Who's 'It's me'? I don't know anybody named, 'It's me' ...!" And Coyote stood up and he said "It's me, Coyote." (loud voice) "Oh-h-h, there you are. What are you doing up there...?" "Well, I come down and we're...going to test our powers out. We're going to ... see who's going to draw each other in... " And the Monster, "Haugh, haugh, okay, alright, you go first. We'll do it three times..." So Coyote gets up there and he checks his ropes, you know, and he's all tied up nice. And he goes "Ooh-ooh-ooh-ooh!" And the only thing that happens is that maybe a hair on Monster's ear... wiggles around. "Haugh, haugh, haugh." Coyote yells down at him "It's your turn, Its-welks, you try to suck me in." So Its-welks opens his mouth and, "Ooh-ooh-ooh-ooh!" And the Coyote starts going down but the ropes hold him back.... "He-e-e-y! He's got a lot more power than I thought, you know!" "Okay, it's your turn." And Coyote gets up there, "Ooh-ooh-ooh-ooh!" A-a-a-nd nothing happens, you know Monster goes "Hey-hey-hey-hey, haugh haugh haugh. I knew he couldn't do anything, you know. He thinks he's got power. I've got more power." And Coyote says "Ok-a-ay, it's your turn." So...Its-welks, he opens his mouth and drives in the biggest air. "Ooh-ooh-ooh-ooh-ooh-ooh." And with that Coyote cuts some of the ropes and starts sli-i-ding down the hill, you know. And the Monster's just about got him, maybe the next time... "Your turn Coyote." And Coyote, "Ooh-ooh-ooh-ooh." And no-thing happened and Monster's sitting there, "Hey-hey-hey, haugh-haugh-haugh." "Ok-a-ay get ready now!" And he opens his mouth, "Ooh-ooh-ooh-ooh-ooh."

And Coyote goes flying through the air, he reaches into his backpack, and throws out the roots and berries he brought with him. And he says, "Soon, the human beings will be coming, and they will find these and be happy!" And Coyote went scootching into his mouth, you know "Aam-aam-aam-ay-ay-ay." Its-welks lies down... and he's content there. And Coyote is inside, he gets his flint and makes a little torch. And he goes along, and...sees all these animals, all these friends ... and what not and, "Hello hello." And they're glad to see him, some of them are jumping up and down.

And Old Grizzly Bear comes up, Bear comes up, "Gra-ah, r-a-a-ah!" "What are you doing here? I was going to save the people. You didn't have to come down." And Coyote looks at him, "What are you getting so worked up for? You are so ferocious to m-e-e, why are you doing that?" And pushed him in the nose, you know, pushed him back out of the way. And that's why the Grizzly Bear has a different kind of nose than the Black Bear!

And...he's going along with his light, you know, and Fox ran up to him. "Fox, how are you?" "I'm doing just fine! I was wondering when you were going to come and save us." "Well, I need some help. You go and get all the boys together, and you have them gather all the bones of all the dead people, and put them by all the openings, and then have them gather a-a-ll the wood and bring it to the heart. But you have to show me where the heart is, you know."

And so Coyote goes on. Fox runs on, and tells all the boys, and they gather the bones of the dead people and they put them by a-a-ll the openings, you know. They gather wood, and they show him where the heart is...

But on the way there... they run into Rattlesnake, and Rattlesnake is just mad...and rattling, "Chish, chish, chish, ... wish, chish, chish... What are you doing here? I was going to save the people. I'm the one who has the power." you know. And Coyote says, "Oh, you are so ferocious to everybody else, and to me! you know. Ah, you are nothing but a pest!" And stepped on his...head, and that's why a Rattlesnake has a flat head. And he says, "From now on, you're just going to be a pest. And you'll really be... scared of people and you'll run away when they come by. But... sometimes you'll be brave and they'll kill you." And that's what happens to rattlesnakes today!

But he found the heart. Coyote takes pitch from his backpack, and starts a fire with the gathered wood under the Monster's heart. He jumped on the heart. Took one of his five knives out and he starts cutting away at the heart. Smoke begins to come out the Monster's eyes, ears, nose and back end. And as he cuts into the heart. Its-welks, Monster, "O-o-oh, I'm getting heart burn. O-o-oh, I knew I shouldn't have eaten that Coyote, O-o-oh." And he opens

his mouth and some of his openings. And...a-a-ll the boys throw out the bones, as many as possible. And he keeps cutting, and every time he'd do that the Monster, Its-welks, "O-o-o-oh, o-o-oh." And Coyote keeps cutting, and everything he does, that Monster, "O-o-o-oh," and everything opens up and the boys throw out more bones. Coyote breaks one knife, and then another, and finally he is down to his last knife, and what not. Coyote keeps cutting away at the heart. And he says to the people, "As soon...as he opens up again, you all run out and I'll run out too ..., and he'll be dead." So he cuts it and cuts it and cuts it, and finally the last knife breaks and the heart falls off. And the Monster goes, "O-o-o-o-oh!"

And with that ... everybody runs out..., out of his nose, out of his eyes, out of his ears, out his mouth, out of the back end... And ...Muskrat...was the last one to run out of the back end. But he was slo-o-ow... And as the Monster died he closed his back end...over the Muskrat's furry tail, beautiful furry tail. And Muskrat, "Oh, no!" And he's sitting there, pulling his tail, and he's pulled all his hair off. And Coyote looked at him, "And now what will you do? You're always being the last one out. You'll be just a scavenger the rest of your life!" That's why Muskrat doesn't have any hair on his tail...!

And at this point...the...animals all are standing around. And...he starts ...cutting the Monster up. And gets some blood, and ... sprinkles it on the bones ... and a-a-ll those...dead people come to life. And everybody's going, "Yeah, yeah, yeah," you know. Monster's all dead, and ... with the help of his friends, they cut up the Monster, and they throw different parts into different areas. The feet landed over toward Montana and that's where the Blackfeet came from. Part of the head he threw over to another part of Montana, and the Flatheads, you know, came over from there. And ... part of the tail, they threw over to ... the Umatillas. And they threw some south, the Navajos..., and the Shoshone, and every place...else. They threw part of the belly over into Montana and that's the Assiniboine...the "big bellies!"

And ... ah, he was busy just throwing meat every which way, parts of the Monster. And Fox comes up to him and says ..., "What about the people here? ... You forgot all about them."

The only thing left was the heart, the kidney, and a breast. I guess the Monster was a woman. Anyway, and he says, "Oh, I forgot a-a-ll about that ... Go get some water from this clear ... river, the Clearwater [River]." And he got him water. "Now pour it over my hands." And Coyote washed his blood off, you know, and it dripped down. He said, "Where this blood ...lands and with this heart will grow a people... They'll be strong. They'll be brave. They'll have good hearts. They will lead good lives. And these will be the Nez Perce ..." And that's where the Nez Perce came from.

This story basically tells us where Nez Perce people came from. Based on my interviews, I found that Nez Perce people know this story, and many people believe in it whether they were born into a Christian family, the Seven Drums family, or the original Nez Perce Medicine People Belief family. It seems many of the stories of the Creator and First People are widely recognized among the Nez Perce. These stories "have been tightly bound since time immemorial as a legitimate form of understanding" (Kovach, 2010: 95). Stories reflect not only the historical knowledge, but also current knowledge, and they firmly fasten the knowledge with places. Oral tradition, as Kovach argues, is "to be congruent with tribal epistemologies that honor [indigenous] rich ancestry" (Kovach, 2010: 95). As an education method, stories, including the stories of First People and the stories of life experience, significantly shape people's attitudes toward nature. The story told by Leroy Seth and Allen Pinkham might provide more direct insight into the relationship between the Nez Perce people and other animals:

All of our relatives, the ones that there are underground, on top, and in the air, in the water. All of our relatives...that a long time ago, all the animals used to talk to each other. It's like we are. They enjoyed the life that way. All the different, all the different living things, like I said,

from the grounds to the air to sea, everything, the wind, everything, everything could have a voice; everyone could talk. Then the day came when they realized that the people, two legs, of were starving, didn't have any clothes, didn't have anything to eat. So, all animals had a big council, council meeting. And they said, well, we'll have to make a sacrifice of our bodies. I don't know what kind of rules they put on the people, the two legs. But they said if you respect all of us if you're going to wear my skin for yours to keep you alive and warm and respect that, then they'll be good. It'd be like a good trade, like Indian trade. Same way with all the other things, the food...especially the salmon and how there they are gifted to us, but in return they wanted respect. And that's one of the most important [word] in her Indian country. Respect, one must respect himself so that he can respect others. So for the closing, for the food, for the knowledge, all the things that we share that they've shared with us taught us how to live, how to fight, how to make family, all these different things.

----- Leroy Seth

When elders try to teach children the knowledge of animals, they tell them stories about the reasons why certain animals have their unique shapes. However, these stories tell not only about appearances of animals, but they also contain deeper meanings. Here is a story called "A meeting between Creator and the Animals" told by Allen Pinkham (Landeem & Pinkham, 1997: 4-7).

So Deer, he comes and says, "I want to have horns that come up and branch out, and I want to have big ears so I can hear well, and I want to have a little short tail with a black tip on it. These new human beings when they come can use my horn to make arrows and flint knives, and they can use my hide for clothing to keep warm, and they can use my hooves to make rattles to sing their songs with." So Creator said, "You act the way you want to act, and that's the way you will be," and that deer is what we call mule deer today...Then Eel came out and said, "I don't want to look like the Steelhead or Salmon or Trout. I want to be long, and when I

rest, I want to put my mouth on the rocks. But I'll come up the river every year, and they can use my flesh for food." So this is how the fish became qualified.

----- Allen Pinkham (Landeem & Pinkham, 1999)

Every nation has its stories that reflect the human-nature relation they believe in. As a child of schoolteachers, I learned a lot of old Chinese stories that reflect the human-nature relation in our culture. But none of those stories reflect similar ideas as Nez Perce stories. I want to share five very old and short Chinese stories that maybe every Chinese knows from an early age. By reading both the Nez Perce stories and Chinese stories, people might find some dramatically different ideas toward nature.

The first four stories are related to each other. They might have been created about two thousand years ago in early Han Dynasty. The first one is called The Divine Farmer Tastes the Herbs:

In the very ancient age of tribes, before the first Chinese dynasty, there was a tribe leader called Shen-nong, literally meaning "Divine Farmer" or "Agriculture God", he invented many farming skills and taught them to people; he also used his own body to test plants, looking for edible plants and useful medicines. His works helped people survive, but he died by eating poisoned plants.

The second is called Jing-wei Fills up the Eastern Sea:

After Shen-nong's daughter Jing-wei drowned and died when she was playing in the East China Sea, her indignant spirit became a colorful bird and determined to fill up the sea for revenge, so every day she carried stones and tree branches, and then threw them into the sea.

The third one is Hou-yi Shoots the Suns

Then many years later, during the reign of Yao (an ancient tribe-league leader), there were ten suns in the sky. The suns are sons of two gods. They came out in daytime and night, so it was very hot. Rivers dried and crops died. Beasts came out from mountains, rivers, and forests, and people were killed by beasts. Then the outstanding archer Yi decided to save people. He walked a long way and climbed up on a very high mountain. He shot down nine of ten suns with his powerful red bow. Then people could survive.

Then it is the Great Yu Controls the Flood

Also, during the reign of Yao, maybe after nine suns were shot down, people frequently suffered during floods. A respected man, Gun, was commanded to control the flooding. He spent nine years building dams along the riverbanks, but he finally failed. Then Gun's son Yu successfully created a canals system that allowed water to release into seas and fields. Because of Yu's contribution to controlling floods, later he was elected to be the new tribe-league leader.

The last popular story called "The Foolish Old Man Removes the Mountains" and was created about 2400 years ago.

The 90 years old Yugong (his name literally means a foolish old man), lived beside two huge mountains. Yugong was annoyed because the two mountains blocked his way out, so he decided to dig the two mountains away. He immediately led his family to dig with their simple tools. The task looked impossible, but Yugong believed there would be a day that his offspring could finally remove the mountains. His decision and action moved the God, who removed the mountains for him.

I heard many times that Chinese people say that rather than always obeying the gods' will, there are many Chinese stories telling how people fight with gods and how

they fight with nature for survival; this makes Chinese mythology and old stories unique. I grew up with these stories, and I was always told that human beings could and must defeat the bad gods, nature, or destiny for a better life. However, the Nez Perce's stories present me with totally different ideas about the relationship between people and nature. Their ideas are impressive to me because they are totally opposite from the ideas that I am familiar with. The Nez Perce people know that the Creator created this land for both people and other creatures. They know animals, the First People, sacrificed their bodies for the two legs. Rather than fighting with nature and taking everything that they need, it is Nature's initiative to kindly provide help to human beings. Nature asks nothing for repayment except respect: do not exploit and disturb Nature too much. Those stories describe to us how the Nez Perce people have learned and practiced the living philosophy that is passed from their family, ancestors, communities.

Power from nature

Since Coyote killed the monster, saved other First People from its belly, created the Nez Perce people on the land under his feet, and taught them how to survive, the Nez Perce people have lived on this land for many generations. During this long history, animals provided people not only with food and clothing, but also power and knowledge. Let us start from a piece of the story from Silas Whitman:

Lamprey... provided sustenance for the stories they told about it. But they (some Native Americans) say, they claim if you are able to eat the heads of the eels, you'll become like the eels, be able to dance, move around, become slick. And so they said that's how it is, that's

how you become a good powwow dancer ... because a special person can bite the heads up, so it gives you powers, ability. So, it's almost like every day acts in some tribes.

I did not feel strange about this story when I was listening to Silas. When I was little, elders often told me that if I want to become smart, I need to eat more walnuts because they are good for your brain. People believe in this because the shape of the walnut core looks like a brain. Similarly, women think eating Chinese quinces can enhance breasts because Chinese quinces look like female breasts. All of these traditional ideas about food make me feel familiar with Native American culture. However, I still doubt my understanding of the power of the eel. In my later conversation with participants, I raised this question. This is one of the few times I asked questions in all my conversations with elders, but I did not get much information. Then I turned to some existing studies. I did not find more information about the spiritual power of lampreys, but I accessed some knowledge of the *weyekin* belief, although this might not relate to Silas' story. I think the old belief of *weyekin* might, to some extent, indicate the Nez Perce people's attitudes toward all animals, including the Pacific Lamprey.

Michael and Tracy Lee (2011) describe that *weyekin* refers to practice "as mystical and supernatural, denoting a reality beyond the senses, beyond our material, physical surroundings—a metaphysical (above the physical) transcendent reality outside of bodily perception," and argue that from the Western perspective *weyekin* could be understood as referring to "denote[ing] a mystical, incorporeal, or metaphysical relationship with an animal: in Euro-American terms, a 'guardian angel' or a 'saint'," and assumed that through "various religious rites and mystical experiences, an

individual discovered or was assigned an animal (later we learned that it could be any living creature, including an insect) to be a protector of sorts—a spiritual guide from which one could gain inspiration and guidance." Through their study of wolf culture among the Nez Perce, they argued that *weyekin* has its symbolic meanings referring to the metaphorical significance of the wolf in the Nez Perce cultural meaning system. In their study, they quote an explanation from the Nez Perce people:

A *weyekin* is a type of spiritual strength ... I was taught about the wolf and about some of the names like Red Wolf, Yellow Wolf, all those names like that. That's why the meaning of the wolf was there, because of the strength of the wolf. That was kind of like their *weyekin*, that's how they got their Indian name.

Michael and Tracylee also quoted the description from Yellow wolf in his own story (McWhorter, 1991: 298): "In time the candidate would fall into a comatose state of mind. It was then that the *wyakin* (*weyekin*) would reveal itself, sometimes merely as a voice, or at other times as a recognizable apparition."

Hillstrom and Hanes (2012) consider that the Nez Perce people can feel "a deep spiritual connection with the earth and sought to live in harmony with nature." Nez Perce people believe the creatures in nature closely relate to each other and to people. The Nez Perce people have personal links with nature "in the form of a guardian spirit, or *wyakin* (*weyekin*), that protected him or her from harm and provided assistance during his or her life." And they provide examples: "a person might pray to his or her *wyakin* for success in war or for help in crossing a dangerous river. A small medicine bundle containing materials that represented one's *wyakin* was often carried."

They describe how people experience *weyekin*:

Around the onset of puberty, a young Nez Perce would leave the village in hopes of acquiring a *weyekin* through a sacred experience. The youth traveled alone to an isolated place, often at a high mountain or along a river, without food or weapons, and sat upon a pile of stones and waited for the *weyekin* to reveal itself. The *weyekin* might appear as something material, such as an elk illuminated in a flash of lightning, or as a hallucination or dream. After returning to the village, the young person did not tell others of the experience but interpreted the power of the *weyekin* privately. From that point on, there were certain rules to follow in order to avoid bad fortune, but one could also appeal to the *weyekin* in times of need.

In Horace Axtell's book (2009: 57), he tells us:

It sounds unbelievable, but the powers of our old people were natural to them. It wasn't something that nobody inherited. I think about the old warriors and old people. The *weyekin*—the powers that they got from the animals—gave me another reason not to just go and kill animals for no reason at all. You might kill somebody's power." And he also emphasizes that people know their own power and others' power, but people would not often discuss power. And with their power, Nez Perce people foresee things, defeat their enemies, overcome difficulties, and survive through the predicament. That is why he would not just go and kill animals.

Probably only Nez Perce individuals could tell what *weyekin* is and what *weyekin* means to themselves. The *Weyekin* belief is collective and also individual. It is collective because it represents the belief of the spiritual power of nature and the spiritual relationship between people and nature; it is individual because individuals have their own understanding of their own *weyekin*. I have no idea how many Nez Perce people still believe in *weyekin* today. Mr. Ronald Halfmoom told me that few

people do *weyekin* today. However, I believe that people's attitude toward animals, the respect that forms an essential part old *weyekin* belief, still grounds Nez Perce culture and will be passed to younger generations through various ways of education. Although some animals like wolf and bear might be more well-known than other animals in the *weyekin* belief, I think this attitude is toward all animals, including lamprey. *Weyekin* is the epitome of how Nez Perce people understand nature: on both mundane and spiritual levels, people gain their powers from nature; they are guided and protected by nature – that is why they can survive and that is why they must respect and protect nature. Probably that was the reason Horace Axtell would not kill any animals for no reason at all, and why people would not like to see any animals disappearing from the Nez Perce region.

Eels as a part of the way of life, the wheel of life

We have seen how the Nez Perce people gain spiritual power from nature. They also learn mundane power from nature — the living knowledge, through the long-lived experience. I learned the stories about how people followed the hawks to find lampreys and how to chase animals like wolves. I think the seasonal round is probably one of the most important things that people have learned from nature. Before the end of my conversation with Silas, he asked me to see Nakia and receive some information about the seasonal round (Figure 6.1). Thus, I felt that it must be important for the Nez Perce.

The Nez Perce food cycle is something that has been fine tuned and honed over thousands of generations. The amount of knowledge that is contained in that food round, that food cycle is enormous because the people and their experience of being from this areas and originating in

this area always had to go out and look for food. Yet, they did not want to leave their homelands and be nomadic.

----- Josiah Pinkham (Interviewed by Rodney Frey, March 2002, sited from Lifelong Learning Online)

The Nez Perce seasonal round is knowledge that ensures the Nez Perce people and other Plateau Indians acquire food resources in an appropriate and efficient way. Timing and planning are the crucial knowledge of the seasonal round — collecting certain kinds of food in the right season. The seasonal round reflects the Nez Perce people's comprehensive and sophisticated biological and geographical knowledge of the land that they live on. It is crucial for survival and maintaining resources, and it passes to the younger generation through oral tradition and teaching. During the rounds, people have games, horse racing, gambling, celebration, feasts, and meetings with other families or members from other neighboring tribes (McCoy,2004:32-35).

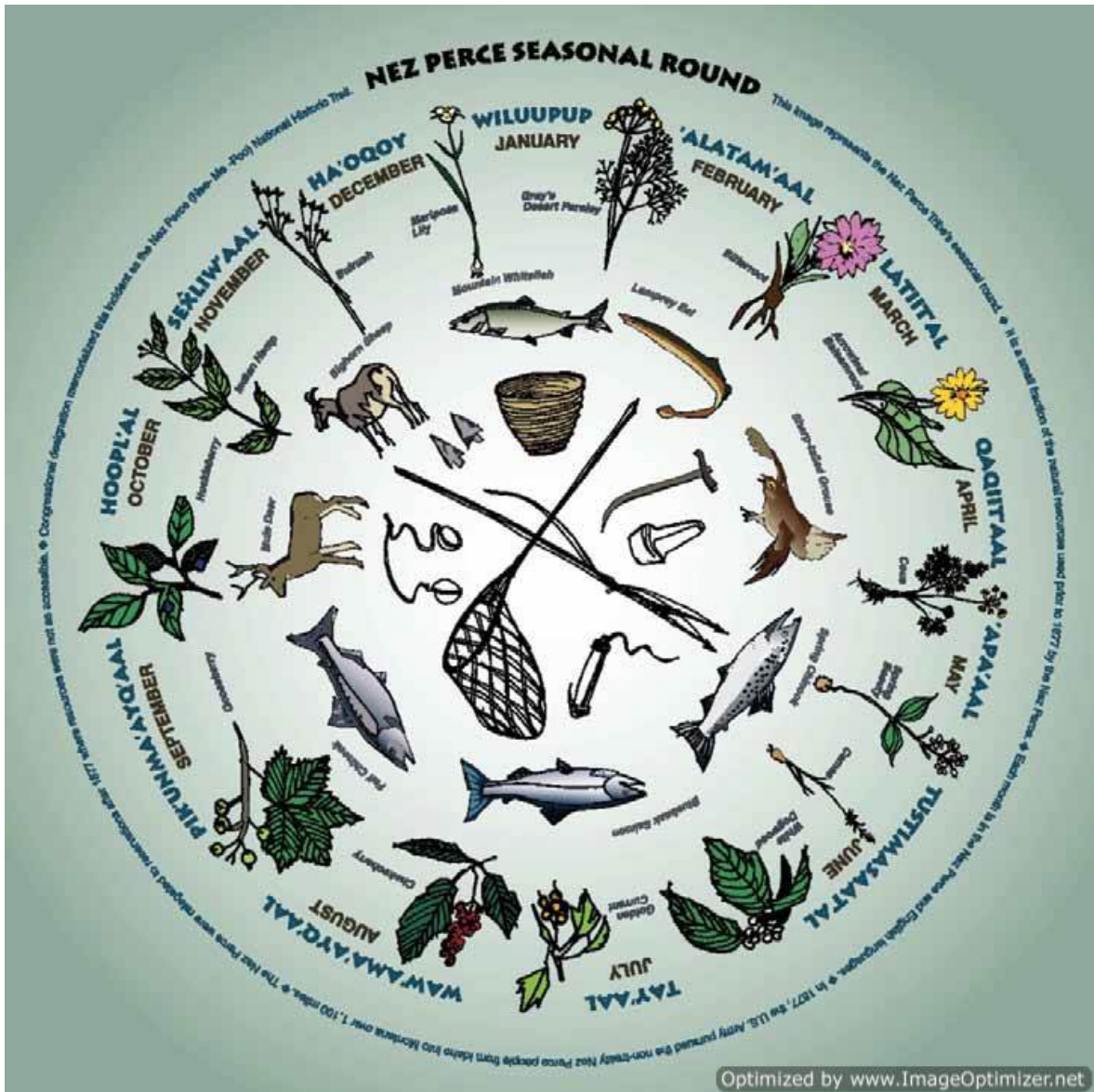


Figure 6.1, Nez Perce Seasonal Round

We were able to survive by looking at the season changes and stuff we were able to prep and plan. So that's what our life, our lifestyle was based on, was preparing for winter... we tried our best not to fish for them during their spawning season when they ready to lay their eggs and stuff because we wanted, we want to let life to create itself as it was supposed to... same with, you know, taking a female moose or elk. We tried our best not to do that because she might have been pregnant, you know, and so we just, we base on what season it was, when they

are ready to eat, when the best time, giving us enough time as well to prep and plan that (for winter).

----- Sienna Reuben

As a university student, Sienna Reuben has her deeper understanding of the seasonal round. She thinks this old philosophy has its scientific core:

It was all done to the science of everything almost. And it wasn't like the science you see nowadays where you can go in and study and examine. We just, it was just something ... passed down through generations and, we kind of, let nature, let her take over and control and rule it. But we were just kind of like, to know and understand when the time was that it was offered to us. So everything we believe that, what we take was offered. Same thing with the salmon and the lamprey. They have offered themselves to us as a meal, a substance. And so that was kind of our way of life.

I agree with Sienna's idea. Here, I want to clarify that tribal ecological knowledge and modern scientific knowledge are not two opposing fields or non-intersecting fields. Tribal ecological knowledge could be scientific, although they were not generated as a kind of Western academic subject or presented in Western academic language. Alfred Fouillee (1986) suggested, "A science, in the broadest acceptance of the term or at least a cognition is a rationally established system of facts and ideas which, over a given range of objects, confers certainty, assurance, probability, or even doubt that knows why it doubts." When we think about this, the tribal ecological knowledge is extracted from the Nez Perce people's very long-lived history on this land; they have had thousands of years' observation, experiment, and accumulation; they are rational and systematic; the knowledge has been proved by the very long

homogenous relation between Indigenous people and nature. Just as Winona LaDuke (1994:127) argues:

Traditional ecological knowledge is the culturally and spiritually based way in which indigenous peoples relate to their ecosystems. This knowledge is founded on spiritual-cultural instructions from "time immemorial" and on generations of careful observation within an ecosystem of continuous residence. I believe that this knowledge represents the clearest empirically based system for resource management and ecosystem protection in North America, and I will argue that native societies' knowledge surpasses the scientific and social knowledge of the dominant society in its ability to provide information and a management style for environmental planning.

The traditional ecological knowledge is the *Niimiipuu Tamalwit*, the Nez Perce Heart Knowledge that is learned from the First People stories and has been practiced for so many years. It is the tribal authenticity that I was constantly seeking. Researchers recognized the importance of tribal ecological knowledge long ago. Paul Alan Cox (2000) argues that tribal ecological knowledge will play very important roles in the fields of ethnobotany, biology, pharmacology, and environmental protection in the new millennium. I would like to consider that, by so many years of practice, this knowledge became organic and further genetic, firmly grounded in daily life and guiding their daily activities and shaping their attitudes toward nature.

Back to the eels. As we can see in the chart of the seasonal round, lamprey was a very important food in winter when there was a shortage of food resources. However, today the Nez Perce people are not able to collect lampreys for food unless they go to collect them downstream close to the sea, far from the tribe, or receive them from relatives and friends. And today people do not have to collect eels for food in winter

anymore; if they want some eels, they often collect them in summer outside the Nez Perce region. The Halfmoon family would collect eels on the 4th of July at Willamette Falls, about 13 miles south of Portland, where many people from the nearby tribes liked to go. Along with the disappearance of lampreys, a lot of social activities that happened during the lamprey collecting period disappeared among the Nez Perce: singing, celebrating, cooking lampreys on an open fire with family members, enjoying the happiness, meeting with people in the community. That means the law of life has been reshaped: the sacrificing-respecting relation between people and nature has been reshaped, the relationship among people has been reshaped, and further the traditional part of Nez Perce identity has been weakened. Through Silas Whitman and Leroy Seth's words, we can feel some melancholy toward this situation:

Whitman: So it was, it was when you went out and you followed the law. Who did that now? Everybody wants it (eel). They are staying home, saying, "give me some eels, I want some eels," but they don't follow up the rules (Seth laughing). You got to go out and do something in order to celebrate what you're eating. You're done because they're giving of themselves. So you have to make you get to learn the song. You have to learn to say their prayers about what's been given to you.

Seth: Show your respect, respect.

Whitman: Don't take it for granted.

Their words inspired me to think about people's intimacy with the land. It is considered that the disappearance of Pacific Lamprey from the Nez Perce region might reduce the Nez Perce people's intimacy with this land. There were once so many activities related to eels that happened here long ago. When I talked with

elders, most of their stories happened on this land; these stories are the witness of how people were nursed by the Mother Earth, the nature. The disappearance of Pacific Lamprey might also reduce the intimacy between the old generation and the young because what they learned from elders has already become very different from what they can see today.

As mentioned before, the Halfmoon family would collect eels at Willamette Falls today, as many other people would do. But Mrs. Loretta Halfmoon told me once her two sons could catch eels with their grandfather "right here in Lewiston" and "where many of our people from here went to go get eels." Lewiston is not a part of the reservation, but it is a part of the traditional region of the tribe folks. In the past, when people described eel collection, apart from the Snake and Clearwater Rivers, they referred to places such as those "little pools," or "a creek I can't remember its name," somewhere "five miles down here"; they referred to particular locations interspersed on this land.

And my two boys would jump in on the side of the dam, and they just loved it because eels were swimming around and sticking to the wall and the rocks. And they used to help get the eels and throw them a sack. And for their grandpa to pick out.

This is how Loretta's sons caught eels with their grandfather in the past. Along with the disappearance of Pacific Lampreys in the waters of the Nez Perce region, people cannot enjoy those delightful family activities here anymore. Later, Mrs. Loretta Halfmoon described another picture to me. The Dalles Oregon is another place Nez Perce people would collect eels. The lamprey restoration team also annually collects

lampreys at Te Dalles Dam. Even there, eels are far less common than before. As Loretta said:

[W]e have to drive down there, you know, it's hard for us to get down there early in the morning. You have to be there early in the morning, have to wait in line and then get your eels. There are so many more people now; you know that they want it. So you have to kind of be in line. Wait your turn, and then you can go down there and then you can hook them out. Yeah. That's the same way at Willamette, you have to run a boat at Willamette, and then you go up to the falls, and there are rocks, all kinds of rocks there. And then the eels are underneath the rocks. So you have to have a swimming suit to get underneath there and then pull them out.

I think it can be easy to see the difference between eel collecting in the past and today. In the past, people could have eels at many places in a very easy way; “easy collecting” is a very important characteristic of eels, as elders always mentioned. This was important for survival in the past, especially in the wintertime. In the summer, eel collection is more like a game, a gaming time enjoyed with family and other people in the community – cooking eels on river banks, sucking them on arms, biting eel heads; or people might have singing, dancing and praying to give appreciation to The Creator, Mother Earth, and the eels who sacrificed their body for people. People's relationship to nature and their attitude toward eels were generated from all these activities. However, today lamprey collection has become tiring work that requires getting up early in the morning, driving for hours, or boating to somewhere outside the Nez Perce region, waiting in line, taking the eels and leaving. All those activities that could stabilize a good human-nature relation on Nez Perce land have disappeared. It is hard to say what kind of influence this will bring to the Nez Perce people, but I still want to point out two things: the traditional part of identity would be

weakened, and I could feel that many Nez Perce elders were very uncomfortable with the change in the ways of life that they were taught and grew up with.

An equal treatment

In my meetings with tribal folks, I have learned many ways that people describe the relationship between people and animals such as "brother," "family," and "one of us." I felt something more than "respect." During my conversations with elders, I noticed that they often juxtaposed themselves with those animals. Those juxtapositions include comparison, imitation, and metaphor. I would say the Nez Perce people treat animals in more equal positions than many others do. "Equal" is another attitude indicated by the stories I have learned. I will add two examples here:

Sometimes I try to get people to compare plant and animal species with their own body parts. For instance, the buffalo could be a finger, the passenger pigeon another finger, the peregrine falcon another finger, the wrist could be the sockeye salmon. If you relate these body parts to species, how many would you eliminate before you say "stop." You can get along pretty well if you lose a finger, but if you keep doing that, when is it enough? I learned this philosophy from my elders. Even Joseph himself said, "I am of the earth." Well, if you consider yourself part of the earth, you won't sacrifice those body parts.

----- Allen Pinkham (Landeem & Pinkham, 1999)

They (grizzly bears) go through, and they graze, they are omnivorous, you know, they eat meat, but first of all, they want to eat all the plant food that gives them that storage of their fat and eat the meat as support. So anyway, they go through that and they have the same diet that we do... We look at them; they're all part of our, of our lifespan. We have to have them in there.

-----Silas Whitman

To me, this equality could only occur between me and my own pets. However, it seems that the Nez Perce people can give a relatively equal position to many animals. Horace Axtell liked to talk with animals, and he felt that animals could understand his Nez Perce language. Modern science gave human beings the name "primate" which comes from the Latin term *primate*: the first rank. But I would like to think that Nez Perce people treat animals as beings in the same rank as human beings. And such an attitude probably influences the relationship between Nez Perce people and lampreys in a subtle way.

Religion and feasts

Pacific Lamprey have seven breathing holes instead of gills. Seven is a special number for the Seven Drums religion, thus making Pacific Lamprey special in the mind of some people. Pacific Lamprey is a religious food in Nez Perce tribal feasts. The Nez Perce people have their root feasts and first salmon feast in spring and berry feast in summer. As the son of a previous Long-House leader, Horace Axtell, every Sunday Mr. Charles Axtell sings and sets the table with fish, meat, roots, and berries. With his songs he thanks all animals for bringing food to all Nez Perce people in the past three or four hundred years. Lamprey was usually there along with other fish in the feasts. The first time Mr. Gordan Higheagle ate lamprey was in a feast when he was young:

It was during the spring when I was young, but I always remember how they did the salmon and the eels. They were on sticks, and they had a fire, and they're all around the fire, and the salmon was prepared that way. Yeah. And I, I had to ask... I knew what the fish was, but I

didn't know what the other one (eel) was...I was learning something, then that's what it was.

And that was my first; I remember that being my first time ever eating the eels.

However, Nakia told me that lamprey have been missed in spring feasts during the past three years. And as I know, for many Nez Perce people, especially young people, feasts are their only opportunities to try lamprey meat.

Among the Nez Perce, lamprey-eating and the protection of lamprey are not exclusive to the people with old beliefs. And the old beliefs, old customs, and old ways of life intersect with the new belief: Christianity. Nez Perce is a big multi-religion community with Seven Drums, Shaker religion, Presbyterians, Methodists, Catholics, Pentecostals, LDS Mormons, Native American church, Sundance people who follow the Sun Dance, and the original Nez Perce religion—Medicine People—as Silas Whitman told me. People with different cultural backgrounds were brought together by treaties and marriage. They formed a multi-cultural society (Sails Whitman, 2019). Although people are changing, many are not as traditional as before (Leroy Seth, 2019). But based on my research, I believe that protecting animals, including lamprey, and protecting many other traditional cultural forms are a consensus here in the mind of Nez Perce people. My participants have different cultural backgrounds and some of them immigrated from other tribes, but they all have such a consensus.

Restoring Pacific Lamprey population

The previous sections discussed some cultural reasons why the Nez Perce people want to protect Pacific Lampreys. Let us return to the Nez Perce Fishery Program Orofino Department, and see what is currently being done to restore the population

of Pacific Lamprey. David Stella and his team follow in Elmer Crow's steps and engage in the "translocation" program of Pacific Lampreys. Adult lampreys are collected in summer at different dams and brought to Cherryland Hatchery for temporary holding. Genetic samples are collected from those adults, which are then released in spring next year in their traditional spawning area. David showed me their samples, usually a little bit from the fins. Samples are analyzed at a lab in Hagerman, Idaho. They also take fin clip samples from juveniles; the samples are sent to the lab for parentage analysis in order to see if they are the offspring of the adults that were released into the streams. They found that year after year some offspring of the adults released by the team earlier returned to this area (David Stella, 2019).

The Nez Perce Fishery Program also cooperates with other tribes through the Columbia River Inter-Tribal Fish Commission (CRITFC). They attend meetings and advocate for Pacific Lamprey, trying to improve the lamprey passage at each dam. Tod brought me to Cherrylane Hatchery where they currently keep the lampreys collected from downstream last year. More than a thousand adult lampreys were kept in six big tanks and looked after. This was the second time I came here, and Tod asked me if I wanted to touch the lampreys. We opened a tank, took out a big lamprey with a dipnet, then with Tod's help, I let the lamprey suck on my hand. I could feel the lamprey was sucking and biting, but it was not painful, only a little bit itchy. I kept him on my hand for about one minute, took a photo, and returned him to the tank from my hand. I saw only some shallow teeth marks on my hand, and they disappeared quickly. At that time, I knew lampreys were not as scary as many online

pictures showed. That was my very first "disenchantment" of my previous fear of the Pacific Lamprey.

When eels or salmon were released in their traditional spawning area, Mr. Charles Axtell was often invited to sing. Charles sings the songs for blessing the journey of the lampreys and the fish. Youth and children might also join this with their family for the rare opportunity to know lampreys and experience the Nez Perce environment-protection philosophy.

Chapter 7: Why and How to Keep an Eel-tradition in Nez Perce – from the perspective of collective memory and the formation of identity

My understanding of Nez Perce stories

The purpose of this discussion relates to my feelings about Native American life stories and First People stories. As I mentioned before, the First People stories are the timeless knowledge created by the Creator and the stories directly teach Nez Perce people the knowledge of what the world is like, how it was created and why it was created. It directly defines who the Nez Perce people are and where they come from. Meanwhile the life-experience stories present how the Nez Perce people practice the knowledge that they have learned from First People stories. Rather than directly defining Nez Perce people's identity, world view and ways of life, the memory of life-experience constantly shapes these aspects. Two kinds of stories are involved in Nez Perce memory, identity, and epistemology, and they are a very important educational tool. In this section, I discuss the relationship between stories, memory, and identity, and through this discussion, I want to show that practice and participation are very important for maintaining memories and identity. They are probably helpful to demonstrate why the Nez Perce people want to keep Pacific Lamprey on their land.

As I mentioned before, Native American stories "have been tightly bound since time immemorial as a legitimate form of understanding" (Kovach, 2010: 95). Stories reflect not only the historical knowledge but also the current knowledge, and they firmly fasten the knowledge to places. They have their special role in modern times. Today, on the one hand, Euro-American culture has significantly participated in Native

American life — the schooling system, writing systems, new media — all these things might to some extent reduce the importance of storytelling in Native American societies. On the other hand, I would say the storytelling culture has been preserved and developed in the Native American community. Many of its special forms — the face to face communication, the very personal experiences that usually relate to the local community, the acquaintanceship and trust between storytellers and audience — all these factors create a kind of authenticity that other ways do not provide, and they are enduing Native American storytelling with more and more special tasks. I believe that the most important task is to carry on the Nez Perce collective memory and identity.

The Assman theory of collective memory

Both First People stories and life-experience stories carry and pass on memories. I do not think I could explain how Nez Perce storytelling constructs memory because there are so many factors involved in the construction of the collective memory of a community. I am not able to synthesize in them a logical way. During the past century, the research on collective memory has gradually turned to something less ambitious — practicing collective memory study in the research of a particular social phenomenon, focusing on details, often with other research targets together. Today, the definition of collective memory has become vaguer, and its usage has become an "umbrella" for various formats that "need to be [further] distinguished" (Assmann, 2008: 55). Under this situation, numerous theories have been brought out — a part of them tells us what collective memory is, and another part tells how it works. Among those theories, Jan Assmann and Aleida Assmann provide us the most practical

ones. Jan Assman (1992, informed by Olick & Robbins) provided four different models of collective memory:

- 1, mimetic memory: the transmission of practical knowledge from the past;
- 2, material memory: the history contained in objects;
- 3, communicative memory: the residues of the past in language and communication, including the very ability to communicate in language;
- 4, cultural memory: the transmission of meanings from the past that is explicit historical reference and consciousness.

Here, if we follow Kovach's (2012) ideas, consider Native American stories as memories and storytelling as sharing memories, we might perceive the essence of storytelling more easily. According to Jan Assman's four kinds of memory mentioned above, we can see that collective memory is produced in processes rather than moments, and the key method is communication. For example, one experienced something, and then told others, and everyone believed in it; thus, collective memory is created — it is a process of communication (Zelizer, 1995). Halbwachs (1992: 182) through which only a group of people could make memory alive because an individual would forget; one needs others to remember his/her memory and keep reminding him/her, and this group needs to be sufficiently united.

Shared memory shapes identity

From an outsider's perspective, without plenty of experience with Native American storytelling, I feel it is hard to imagine how storytelling exactly influences Native

American people. However, I feel fairly certain that sharing the memory carried by stories is important for maintaining Native American identity. Before I discuss the relation between memory/stories and identity, we should notice that scholars hardly distinguish collective memory and history; the boundary has become blurred - "the possession of historical identity and possession of a social identity coincide" (MacIntyre, 1984, cited from Olick & Robins). Actually, I would say that when people try to use "collective memory" to explain identity, this term is widely used to include everything in the mind. If we are clear with how Native American stories contain and convey knowledge of history, it would be unnecessary to distinguish the memory of history and other kinds of memories — they are both the memory of the past that relate to the community.

Halbwachs suggested that when people recall a picture in their mind, they recall an aggregation of meanings — social position, family, lifestyle, fortune... (1992: 61). Through these meanings, relationships between people are defined and individuals are connected (1992: 62). Collective memory helps us to weave a web of meanings and allows people to define themselves inside the web. Research on the transmission of memory from generation to generation (Shils, 1981, Anderson, 1991, Smith, 1986) indicates that as an ongoing process, the creation of identity seems synchronous with the creation of collective memory.

Then let us see how collective memory is created. I would like to think about the model of Aleida Assmann (2008), which tried to define collective memory in a simple but practical way. She first distinguished "mind" and "memory" to avoid the wide use of memory. She introduced Sontag's (2003) definition: "mind refers to the cognitive

part of the brain, in which general concepts are built up, where external knowledge, taken in through texts and images, is assimilated and reconstructed." And memory, on the other hand, is a kind of capacity. Assmann (2008: 51) distinguished this capacity into two forms — semantic and episodic memory. Semantic memory is related to the "learning and storing capacity of the mind." Semantic memory is created in a process, by a "collective instruction and the site of continuous learning, acquisition, and retention of both general and specialized knowledge that connects us with others and the surrounding world." Episodic memory refers to the individual experience of events; people can communicate and exchange their experience with others, but "it cannot be transferred from one individual to another without changing the quality of the experience through external representation" (2008: 51).

I would say to the readers that learning and digesting knowledge through Native American storytelling could be a process of generating both semantic memory and episodic memory: one experiences storytelling (storytelling is not only a process of passing knowledge, the process itself is also an event), digesting the stories in the community and space where the stories were happening, then later perhaps sharing them with others with some change in "the quality of the experience through external representation" or fit the old stories "effectively into each individual, unique situation" (Ong, 1982: 60).

According to Aleida Assmann's model of collective memory and identity, the process of "digesting stories" mentioned above is described as "internalization." Assmann did not explain much about the process of "internalization." Here I understand it as a process in which people examine an idea, then gradually believe in this idea, and

finally create a kind of self-discipline in both mind and body. That is an extension of storytelling. But even this could not generate identity — identity must finally be created through practice and participation (Assmann, 2008):

Each 'we' is constructed through shared practices and discourses that mark certain boundaries and define the principles of inclusion and exclusion. To be part of a collective group such as the nation, one has to share and adapt to the group's history, which exceeds the boundaries of one's individual life span. The individual participates in the group's vision of its past by means of cognitive learning and emotional acts of identification and commemoration. This past cannot be "remembered"; it has to be memorized. The collective memory is a crossover between semantic and episodic memory: it has to be acquired via learning, but only through internalization and rites of participation does it create the identity of a 'we'.

In Axtell's stories (1997), he did not achieve his "authentic" or "complete" Nez Perce identity after listening to stories from his grandmother, aunt, and uncles, or seeing his daughter in a Powwow, but only after he returned to the traditional ways of life — back to the Seven Drums religion, growing his braid, dancing in Powwow, leading in Long House — practice and participation are important for the creation of identity. Halbwachs' (1992: 92) ideas could explain the importance of participation and practice in another way. He considers history as "a high-class memory" similar to religious memory. He argued that history is selected and refined by memory, and history is simplified into powerful symbols. People remember the past, but no longer have an immediate relation with it. Those pieces of knowledge are no longer practiced in daily life; thus, they become history. Halbwachs also presented the idea of "historical memory," which includes both histories — the past not alive anymore.

On the other hand, I would call the alive past a tradition. Today, Halbwachs' idea looks a little bit simple, but it still informs us — the only way to prevent traditions (which are significant to Native American identity) from becoming history, is to practice it. Through the constant practice of the knowledge that the audience learned from stories, the knowledge in memory would become what Foucault (1995) called "genetic." That means they would be stably kept in mind and become a value and a part of the epistemological frame.

As mentioned before, Mr. Gordan Higheagle said, "I don't forget it" because he could often receiving eels from his children and relatives. What might happen if Nez Perce people have no eels to eat, especially for those young people who never tasted eels? I raised this question to Mr. Silas Whitman at the end of our meeting. "Then they will forget our tradition," he said.

We already know that eel relates to the Nez Perce's identity. But if people want to keep the eel-part in their identity, eel cannot only live in stories. Stories and memories are easily changed, even though they are remembered by groups. A society composed of groups has the capacity to reconstruct their memorized past at every moment (Halbwachs,1992: 182) — "we reconstruct it through an effort of reasoning, what happens is that we distort that past, because we wish to introduce greater coherence" (Halbwachs,1992: 183). The "past" is easily reconstructed through a specific process. We often see differences between the memory of different generations — either the story is reconstructed during communication, or the audience themselves demand a reconstruction (Halbwachs,1992; Olick&Robbins,1998). In his article, Bruce Ballenger (1997) discussed the originality

of Native American stories. Some of the stories are generated from private experience. Some others, as Walter Ong (1982: 60) argued, "consisted not in the introduction of new but in fitting the traditional materials effectively into each individual, unique situation," thus leading to "the merging of tribal and personal memory."

The disappearance of eels from the Nez Perce region will lead to the absence of the last step of the creation of identity: practice and participation. The meanings eels carried, represented, and symbolized will finally be absent from Nez Perce stories, memory, and identity. Some of those meanings could be made up of some other old ways of life that are still practiced and participated in, but it will still weaken the traditional part of current Nez Perce identity. I am not saying that people must keep their traditional part of identity unchanged. I just raise this issue for people thinking about it in an academic language that I am familiar with, although I am not sure if this language can explain this issue well.

Conclusion

The Pacific Lamprey is important for the ecosystem as a nutrition carrier, food refiner, and riverbed engineer, but its existence in the Columbia River Basin, especially in the Nez Perce region, has been seriously threatened by hydropower dams. To the Nez Perce people, Pacific Lamprey is a source of sustenance in the past and today. The use of lampreys is not unique among Native American societies; lampreys are also consumed in many other regions around the world. It has its part in Nez Perce cultural tradition and the human-nature relationships. The Nez Perce's attitude toward nature and their traditional ways of life make the Nez Perce people desire to protect the Pacific Lamprey and restore its population. The Assmann theories help us to see that the disappearance of lampreys from Nez Perce lands will lead to the absence of the last step of the creation of identity - practice and participation. And this will to some extent weaken the traditional part of current Nez Perce identity.

The Nez Perce's understanding of nature and their ways of life are learned from their long experience with this land. Many of these ideas are very scientific, and thus could help maintain a subtle balance between human survival and environment. I think many non-Native Americans have not realized this point. Meanwhile, many outsiders might think the cultural change brought by lamprey extinction from Nez Perce lands is not a big deal; after all, the world is changing every day. But from my perspective, it is a sharp cultural discontinuity that can happen in maybe a single generation. Thus, it has cut off some connection between the early life and current life, and some connection between the old generation and the young generation in one society. It makes people question their own identities, their ways of life, and their future. I think

this is another reason why the Pacific Lamprey must be protected and restored on Nez Perce lands.

Maybe some people think that the Pacific Lamprey is not culturally, ecologically or economically more important than some other animals on Nez Perce lands, such as salmon; but that does not mean we can ignore the disappearance of this 350 million years old creature from their traditional breeding regions. The issues of the Pacific Lamprey are not simpler than any other animals. As an "outsider" (Brayboy & Deyhle, 2000), who does not have much Nez Perce knowledge and only went to the reservation approximately ten times, I clearly understand my limitations. Thus, I just hope to raise the lamprey issue to the public, rather than going deep into Nez Perce culture because I was not able to do so. What I have done is to retell some of the stories that I recorded, describe some the views that I heard, present the materials that I read, and discuss some of my simple ideas toward the lamprey issues. The voice of Native American tribes toward the lamprey protection in the Colombia River Basin has not been really heeded by the public, and currently anthropological research has not seriously addressed the lamprey culture in this region; therefore I hope there are other researchers who have more Native American knowledge, more professional research methods and more time and resources who can come to the Colombia River Basin region for research of the Pacific Lamprey.

I clearly remember that, at the end of my meeting with Mr. Gordan Higheagle, as I walked him out to his van, he told me that he is teaching his two grandchildren. He is teaching one of them "respect," and teaching another one drums. My research did not involve much about educating the younger generation, but I still received many

important ideas in the stories. Silas Whitman and Leroy Seth have engaged in a series of educational programs that teach Native American culture. They teach not only children of the tribe, but also they have classes outside, including at the universities near the reservation. Many young adults in the tribe have engaged in educational programs and have taken over some works from elders. Even some very young people have become involved in simple works, participating as much as they can. Sienna Reuben is involved in a program called HOIST – “Helping Orient Indian Children to STEM (science, technology, engineering, and math)” that helps students from grades 9 through 12 learn and experience STEM fields. Through this program, many children are able to see and learn knowledge about Pacific Lampreys and participate in the lamprey release program. Easton Powauke believes young people have the same thinking as the elders; young people could be more progressive; they could incorporate old thinking with their education and keep their cultural identity. I think these ideas and actions could make Nez Perce people confident with their young generation in the protection of Pacific Lamprey.

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