

Algonquins of Ontario

BRIDGING THE GAP BETWEEN SCIENTIFIC AND ABORIGINAL TRADITIONAL KNOWLEDGE:

Exploring Algonquin and Aboriginal relationships with the American eel



This document builds on the information contained within *Returning Kichissippi Pimisi, the American eel, to the Ottawa River Basin: Bridging the Gap between Scientific and Aboriginal Traditional Knowledge*. The Aboriginal Traditional Knowledge contained in both of these documents has been collected to complement the Algonquins of Ontario landmark paper *Returning Kichissippi Pimisi, the American eel, to the Ottawa River Basin*, originally published in December 2012.

In partnership with the South Nation River Conservation Area (SNRC) and as part of the SNRC's American Eel Project, support was provided to the Algonquins of Ontario to complete this work through Canada's 2013-2014 Aboriginal Funds for Species at Risk (AFSAR). This initiative demonstrates the value of adopting a collaborative, partner-based approach to tackle complex issues, such as the restoration of Pimisi to its traditional habitat throughout Algonquin Traditional Territory.

The collection and compilation of the Aboriginal Traditional Knowledge presented within this document was completed through the dedicated efforts of Ethan Huner, Resource Technician with the Algonquins of Ontario.

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The image of the American eel was created by Tony Amikons, Algonquins of Pikwàkanagàn First Nation.

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American eel remediation is a rapidly evolving area of practice. Literature and guidance continue to be published with the gathering of emerging sources of Aboriginal Traditional Knowledge (ATK), stories and oral histories. This 'living' document will be revised as new information and practices become available.

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The Algonquins of Ontario (AOO) dedicate this document to the Elders and the Ancestors who knew the eel so well. The AOO especially recognize the people who shared their family stories, knowledge, anecdotes, and personal experiences about the eel during this project. Their knowledge will assist the AOO's ongoing efforts to bridge the gap between American eel science and Aboriginal Traditional Knowledge and restore the Algonquin cultural connection to this sacred creature, Pimisi. The AOO also acknowledge all Aboriginal peoples who continue to work to preserve their cultural relationship with the eel. The eel connects us to our traditional waters, and to each other. May our children and our children's children forever have eel in their lives and in their waters.

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Bridging the Gap between Scientific and Aboriginal Traditional Knowledge:

Exploring Algonquin and Aboriginal Relationships with the American eel

Algonquins of Ontario in Partnership with the South Nation River Conservation's American Eel Project as funded by Canada's 2013-2014 Aboriginal Funds for Species at Risk.

Under Canada's 2013-2014 Aboriginal Funds for Species at Risk (AFSAR), the Algonquins of Ontario (AOO) partnered with South Nation Conservation (SNC) on the SNC's American Eel Project (2013AFSAR2264). As a component of the American Eel Project, the AOO collected Aboriginal Traditional Knowledge (ATK) on the American eel towards the production of an ATK report. As part of the production of this report, the AOO collected other sources of American eel information and ATK to demonstrate the Algonquin and other Aboriginal peoples' cultural connections with the American eel within and beyond the political boundaries of Ontario.

1. Background Information

1.1 Introduction

The American eel, known as *Pimisi* in the Algonquin language (*anishnabemowin*), is sacred to the Algonquin people, a people who have maintained a cultural connection with *Pimisi* since time immemorial (AOO 2012). For thousands of years an abundance of *Pimisi* sustained the Algonquin people throughout their Traditional Territory, the Ottawa River Basin. *Pimisi* was a vital food source and an important element of the Algonquins' economic, cultural and social way of life (Whiteduck 2010). Eel also provided food, medicine, practical materials and spiritual inspiration to other Aboriginal peoples in Ontario, such as the Mississauga and Mohawk peoples residing within the Lake Ontario and Upper St. Lawrence River watershed. The Mi'kmaq of the Maritime Provinces and other Aboriginal peoples of Eastern North American, have also long shared a deep cultural connection to the American eel.

For millennia, *Pimisi* travelled unimpeded to and from the inland freshwaters of Algonquin Traditional Territory from the Sargasso Sea (AOO 2012). At Akwesasne, the Mohawk have stories that say that the abundance of eel elvers (glass eels) migrating upstream caused the surface water to shimmer (Lickers 2008). While the abundance of glass eels and larger juveniles (yellow eels) moving upstream were surely utilized and consumed by Aboriginal people, it was during the outward (downstream) migration of the large adults (silver eels) that Aboriginal peoples supplied themselves so heavily with the eel. Historical documentation from the 1600s includes a record of a St. Lawrence Iroquois fisherman spearing approximately 1,000 eels in a single night (Thwaites 1896-1901). By the early twentieth century the abundance of migrating eels would periodically force mills to be shut down in order to clear eels that were clogging their mechanics (AOO 2012). The Ottawa River, Upper St. Lawrence River and Lake Ontario and tributaries once provided eel access to vast areas of prime habitat, and the rich

supply of eel within these waters in turn provided significant benefits to traditional Aboriginal cultures.

1.2 The American eel in Ontario

Today in Ontario, the American eel is an endangered species. Past and present human impacts on the eel and its environment have resulted in catastrophic declines of the eel population throughout the province. The former abundance and distribution of the eel has now been reduced to mere relic reflections of what it once was (MacGregor et al. 2011). Consequently, there are many Algonquin people who have never seen Pimisi in their lifetimes (AOO 2012).

The American eel is close to extirpation from many parts of its Ontario range and is in serious decline in those areas where it is still present (MacGregor et al. 2013). The collapse of the eel population, at least in Ontario, has occurred relatively recently, spanning only decades. For example, the number of eels in the St. Lawrence Basin has fallen 99% from local population levels in the span of only 30 years (AOO 2012). The dramatic decline of the American eel in Ontario waters was triggered by a number of contributing factors. Historically, the most significant threats to eels were derived from the cumulative effects of eel harvesting and hydro-electric development. However, as there are no longer harvests of eel in Ontario, hydro-electric dams pose the greatest threat to the recovery of eel within Ontario waters. These dams restrict eels' access to upstream habitat and the turbines cause high mortality during the eels' downstream movements during their outward migrations.

In addition to the impact of hydro-electric dams, Casselman (2003) identifies additional factors across the eels' range which have a cumulative negative impact on the declining eel populations. These factors include harvesting practices at all life stages, habitat contamination and destruction, parasites and changes in ocean currents. In 2008, as a consequence of these past and present practices, the American eel was listed provincially as an endangered species under Ontario's *Endangered Species Act, 2007*.

In 2012, the federal status of the American eel under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was raised to "threatened" from its 2006 listing as a "species of concern". The 2012 COSEWIC Assessment and Status Report acknowledges that while the species is plentiful throughout eastern Canada, dramatic declines have taken place in Lake Ontario and the Upper St. Lawrence River. It also recognizes that the perpetuation of habitat degradation attributed to dams and pollution, as well as existing fisheries in Canada and elsewhere, may impair eel recovery. In other provinces throughout Canada, the status of the American eel varies in rank from "vulnerable" in Quebec to "secure" in Nova Scotia (COSEWIC 2006; COSEWIC 2012).

The American eel is not currently protected under the federal *Species at Risk Act, 2002* and a federal recovery strategy for the American eel has yet to be released. Under the *Species at Risk Act, 2002*, it is mandated that a recovery strategy be prepared for a 'threatened' species within two years of its listing. The AOO hope that a federal recovery strategy will recognize and apply ATK and also identify the need to preserve Aboriginal cultural relationships with the eel, as well as preserving the eel itself.

In 2013, the Ontario Ministry of Natural Resources released a Recovery Strategy for the American Eel (henceforth referred to as "Recovery Strategy") under the *Endangered Species*

Act, 2007. This Recovery Strategy underscores the value of ATK and recognizes the strong Aboriginal connection to the American eel. The following sections explore this relationship between the American eel and the Algonquin and other Aboriginal peoples.

1.3 Algonquin and Aboriginal Cultural Connections to the American eel

The relationship between the eel and the Algonquin and other Aboriginal peoples has existed since time immemorial. This ancient relationship is well documented through the course of oral tradition and the archaeological record. Archaeological evidence from sites on an island in the Ottawa River near Pembroke, Ontario dates back more than 5,500 years (Pilon 2014). These sites contained hundreds of eel remains making it the largest known eel harvesting site in North America. Currently, there are 18 registered archaeological sites at which eel remains have been found throughout Ontario (Allen 2007b). Eel remains have also been found at sites in Virginia, Delaware, and New York (Allen 2010). Remains of ancient stone fishing weirs lay scattered throughout northeastern North America, some of which date back more than 5,000 years (Prosper and Paulette 2002). Weir formations within Algonquin Traditional Territory have been found at Des Allumettes rapids on the Ottawa River near Pembroke, Ontario (Allen 2010). The combination of archaeological sites containing eel remains, and the location of stone fishing weirs demonstrates the longevity of Aboriginal eel fisheries as well as the locations for gathering eel within historically prime eel habitat.

The ancient relationship between the American eel and the Algonquin and other Aboriginal people is also demonstrated by places-names, which remain in use today. On the Ottawa River, two such Pimisi-specific location names include Pimizi Bay near the town of Mattawa, Ontario and Pim-missi Pow-waw-ting (Eel Rapids) on the Ottawa River in Northern Quebec (Allen 2010). Throughout the Maritimes there are numerous locations where the local Mi'kmaq language refers to eel and places where specific eel fishing activities took place. For instance, the name for one particular Mi'kmaq community is Eel Ground First Nation in New Brunswick.

The seasonal availability of eel to Aboriginal cultures was predictable by location, timing and was reliably abundant. Eel was easy to catch and to preserve. During its migrations, the eel was present in large enough quantities to support large congregations of people (Weiler 2011). Allen (2007) posits that the availability of large concentrations of eels may have even influenced Aboriginal settlement patterns and village development in central Ontario prior to 1400.

Within various Aboriginal peoples' diets, eel was a food staple (Morey 2013; Weiler 2011; Scheugraf and Dowd Undated). The rich oily flesh of eel provided the Algonquin and other Aboriginal peoples with a valuable high-energy food source that could be preserved for travel and winter survival. Certain Aboriginal groups such as the Mohawk considered the eel as a revered favored food choice (Lickers 2008), while some Mi'kmaq Elders have described eel as being preferred over salmon and lobster (Prosper 2002). To the Mi'kmaq, the commodity of eel has always been viewed as a gift which was to be shared and distributed among the community (Weiler 2011). The gift-giving of eel has a firm place in early American history as well. Eel (and a bounty of turkey, corn and squash) was presented by the Wampanoag people to the Pilgrims during the famous first American Thanksgiving feast in Plymouth (Gaines Undated).

Beyond its nutritional value, the eel provided Algonquin and other Aboriginal peoples with many other benefits. Eel was a valuable trade item, provided many material uses and applications, and held various medicinal uses (AOO 2014). The eel was also a source of spiritual inspiration to various Aboriginal people and in fact is considered sacred among the Algonquin and Mi'kmaq peoples. Eels were used during ceremonies and rituals— a practice which continues today

among the Mi'Kmaq. A more thorough compilation of the Algonquin and Aboriginal relationships and traditional uses of the American eels are provided in Appendix A.

1.4 Sharing and Comparing the Aboriginal Cultural Connections to the American eel

Through a shared cultural experience with the American eel, the Algonquin people are connected to other Aboriginal peoples throughout the American eel's range (AOO 2012). For example, although the Mi'kmaq and the Algonquin peoples are separated by long distances geographically, they had historic interactions with one another. For both peoples, eel has been a significant food source as well as an important element in their social, cultural, spiritual and economic ways of life (Whiteduck 2010; Weiler 2011).

The strength of the Aboriginal relationship with the American eel varies today between Aboriginal peoples. For instance, as a result of the drastic decline of the eel population in Algonquin Traditional Territory, the Algonquins have all but lost any physical relationship with Pimisi. As the numbers of eels in the St. Lawrence have decreased, Lickers (2008) observes that the Mohawk people are forgetting the importance of the eel. Where eels were once considered a revered food they are now regarded as a 'messy' catch. By contrast, certain Mi'kmaq communities continue to have access to populations of eel in their territories, and are able to fish and consume eels like their ancestors before them. As such, these communities maintain a strong cultural and physical connection to the American eel today.

1.5 Aboriginal Traditional Knowledge and American eel Recovery

Aboriginal Traditional Knowledge offers the Aboriginal perspective of observing, understanding and explaining the natural world (Weiler 2011). This 'way of knowing' is both scientific and philosophical in its application. Weiler (2011) describes ATK as a *“collective body of knowledge based on long-term observation and hands on experience and... transmitted through oral tradition and example.”*

In Ontario, the collection of ATK has been used in conjunction with scientific research to enable the American eel recovery team to establish the historical abundance of the species within Ontario and to document its drastic population decline (MacGregor et al. 2010). The value of ATK as it contributes to informing eel recovery science is recognized throughout Ontario's Recovery Strategy. In fact, many of the “Approaches to Recovery” listed in the Recovery Strategy reference the significant value of ATK. For example, Approach 7.1 commits to, *“Share and collaborate effectively with Aboriginal communities and integrate ATK into recovery planning and implementation.”* Approach 11.1 reaffirms the commitment to *“Work to gain more insights from ATK and further integrate ATK with western scientific knowledge of eel ecology”* (Table 2: “Approaches to American eel Recovery in Ontario” in MacGregor et al. 2013). ATK will continue to play a strong role in the recovery process to address important knowledge gaps such as historical habitat conditions as well as to track present and future changes in eel populations.

The importance of collecting and communicating ATK to support the scientific method for recovery of the eel cannot be overstated. The AOO believe that by continuing to collect and communicate ATK, Algonquins and other Aboriginal peoples can continue to assist western science in eel recovery strategies. Collecting and communicating ATK is not only important to

supplement eel recovery science, but is also critical to raising public awareness of the plight of the eel and the Algonquin and Aboriginal cultural connection to it.

The gathering and sharing of ATK is essential to preserving the Algonquin cultural memory and relationships with Pimisi as well as to learn from cross-cultural Aboriginal experiences with the eel. ATK is vital to reviving Aboriginal cultural relationships with eel, just as science is vital to preserving and restoring populations of eel.

Those that knew the eel and knew them well are fading quickly into the past. Traditional eel knowledge, like the eels themselves, becomes increasingly endangered with the passing of time and the passing of Elders. Therefore, it is all the more important for the American eel to be protected and recovered within the traditional waters of its historic range, and for the eel to find its way back into the living memory of current and future generations of the Algonquin and other Aboriginal peoples.

2. Algonquins of Ontario 2013-2014 American eel ATK Collection

2.1 Project Summary

As a component to the South Nation Conservation project entitled, “*Distribution, Abundance and Migration Routes, Historical and Current, of American Eel in Eastern Ontario*” (AFSAR Number 2013AFSAR2264), the AOO conducted American eel ATK interviews. In addition to conducting ATK interviews, a review of print and online literature was completed to gather additional information and further document the Aboriginal cultural connection to the American eel.

All of the American eel interviews were conducted between November 2013 and January 2014. Five interviews were conducted with individuals from Algonquin communities in Ontario. Two interviews were conducted with Aboriginal people from other communities within and outside of Ontario and two interviews were conducted with non-Aboriginal peoples within and outside of Ontario.

The interviews, compilation of American eel information and the production of this report will help to raise awareness of the Aboriginal cultural relationship with the American eel and more specifically, the relationship between Pimisi and the Algonquins of Ontario within Algonquin Traditional Territory.

2.2 Interview Collection Methodology

At the outset, the AOO’s role in the SNC American Eel Project was reviewed and approved by the Algonquin Negotiation Representatives representing the ten AOO communities. These communities include the Algonquins of Pikwàkanagàn First Nation and the Algonquin communities of Antoine, Bonnechere, Greater Golden Lake, Kijicho Manitou Madaouskarini (Bancroft), Mattawa/North Bay, Ottawa, Shabot Obaadjiwan (Sharbot lake), Snimikobi (Ardoch) and Whitney and Area.

Through word-of-mouth, the AOO identified 21 potential sources of ATK. Attempts were made to contact each source by telephone or e-mail to confirm whether or not the contact held American eel ATK and if they would be willing to share their knowledge in an interview. Of the 21 identified sources, 13 sources were successfully contacted.

Of the 13 people successfully contacted, 9 sources were available to participate in an interview. Depending on the logistics, interviews were conducted in-person, by telephone or by e-mail either at the time of the initial contact or scheduled for a later date. There were no time constraints in which to complete interviews. In-person interviews lasted up to two hours, telephone interviews lasted from 15 to 45 minutes, and e-mail interviews were completed either through a single e-mail response from the interviewee, or through multiple communications.

Before each interview began, verbal consent for the release and use of the information collected was requested from the interviewee (Appendix B). The Standard Interview Template (Appendix C) outlines the specific questions posed during the interview. These questions aimed to focus the scope of each conversation. The information collected during the interview was written on the Standard Interview Template and recorded with a voice recording device when practical. Notes were transcribed from voice recordings and all notes were compiled as soon as possible following the interview.

Following the preparation of a draft version of this report, the interviewees were given the opportunity to review the information they had provided. Follow-up correspondence with interviewees to review the information took place between December 2013 and March 2014. Any necessary edits were made prior to finalizing the report.

2.3 Interview Descriptions

The interviews were conducted between November 2013 and January 2014. A total of nine interviews were conducted for the purpose of this project. Two interviews were conducted in-person, four by telephone and three through e-mail correspondence. Two interviews were conducted with non-Aboriginal peoples and one interview did not result in information considered to be ATK. Any interviews that did not provide information considered to constitute ATK or interviews which occurred with non-Aboriginal people have not been identified as ATK within this report.

In cases where ATK and other information were deemed to be outside the scope of this project, this information has been omitted from the report.

For the purpose of the report, the interviews conducted have been divided into the following subsections:

- ATK Interviews with Algonquins of Ontario Community Members (5 interviews)
- Other ATK Interviews (1 interview)
- Local Knowledge Interview (LTK) (1 interview)
- Other American Eel Informational Interviews (2 interviews)

Within these subsections, the content of individual interviews are provided under a number of general headings, including: Summary, How and When Eels Were Caught, Locations of Eel, How Eels Were Used, Other Eel ATK, Other Eel Information and Post-Interview Reflections. The Summary is an interview synopsis, and the Post-Interview Reflections provide the interviewer's comments and additional insights. In some cases the degree of information provided during a number of interviews did not necessitate grouping content under multiple headings.

Historical documentation of the American eel as well as third party information were provided during the course of one email interview. This additional information and historical documentation is included as Appendix D.

2.4 ATK Interviews with Algonquins of Ontario Community Members

ATK Interview: Doreen Davis, Shabot Obaadjiwan (Sharbot Lake), December 4, 2013

Summary: This interview was conducted in-person. Doreen is the Chief of Shabot Obaadjiwan, the Algonquin community in Sharbot Lake, Ontario. Doreen has spent her lifetime in the bush and is an avid hunter and angler. Doreen remembers seeing an eel between 10 and 20 years ago. Her relatives caught them – she remembers her uncle catching them often. She saw her parents catch eels and cook them on the fire when she was a kid. She has eaten eel herself. When she was young, she saw older people catch them and throw them up on the land and watched the eel move across the ground and back to the water.

How and When Eels Were Caught: Doreen stated that people, including her nephew, are “*catching them [eels] regularly when fishing.*” She also said that “*people caught eel during the ‘mudcat’ (catfish) run in the spring.*”

Doreen relayed firsthand that eels were caught, “*in lakes while fishing for walleye.*” Walleye were the intended target, but by “*casting into shallows around islands where the walleye are going in to feed in the evening around dark, you would get eel as well.*” Doreen also explained that around these islands there were “*sandy bars which are good for eel.*” Although eels were not the target of the fishing, and almost always caught incidentally, Doreen’s family members were “*never surprised when an eel was caught.*”

Locations of Eel: Doreen described many of the locations that she knew where eels were caught, including in lakes throughout Sheffield Township during the summer. Doreen still remembers that her parents “*caught eel and cooked them on the fire*” at 14 Island Lake and Fourth Depot Lake where “*people still catch them there.*” According to Doreen, eels were also caught in Mink Trap Lake where her family “*always got them there,*” as well as Sigsworth Lake, Hardwood Creek near the town of Verona, the Bellrock Mill at Verona, the Napanee River, the Rideau River, and Sharbot Lake. Doreen also noted that “*other people see and catch eel below the Bellrock Dam.*”

Doreen also provided her understanding that “*the eel that inhabit all the lakes and wetlands are part of the catchment for the Napanee River, and that these eels would be coming from the St. Lawrence and Lake Ontario eels, not Ottawa River eels through the Rideau.*”

How Eels Were Used: Doreen remembers her parents “*catching eel and cooking them on the fire*” when she was a kid. In this case, eels were used as a food source. She commented that “*it was mostly the older people who would eat the eels they caught.*”

Doreen also explained that her Uncle Paul “*knew how to use eels*” (see also Interview with Jamie Deyo). Paul had been involved in a chainsaw accident and “*...almost cut his hand off. He always had eel skins around, and he wrapped them around his wrist.*” She was not sure if the eel skin helped with the pain, swelling or movement, but she said that “*he must have known exactly what it did because he always had skins to use.*”

Doreen explained that his knowledge of how to use eel skin and what it would do for him would have been passed on to him from people like Fred Antoine and Paul's Grandmother, Maggie Mercer. She said that *"they were well-known medicine people, and people came from far away to get their medicines, and that they knew about eel medicine too."*

Other Eel ATK: Doreen outlined her belief of how and why she thought the American eel in her area are faring better than eel in other areas. She said *"eels are still healthy in this system [Local water bodies which drain into Lake Ontario] compared to the Ottawa River,"* because *"eel and fish can get past the man-made locks."*¹

Other personal beliefs described by Doreen include ways in which eels move through her local landscape. She believes that eels *"have the ability to cross watersheds and maybe these eel can move between the two watersheds [St. Lawrence River via the Napanee, and Ottawa River via the Rideau River system] through all the wetlands, ponds, lakes and streams in this region... they're all interconnected."* She also believes that eels must be able to *"...travel underwater, underground, from lake to lake, because there's too much land and rock between some of the lakes with eels in them...from the stories I was told I believe that eel can move underground through aquifers or passages."*

Doreen remembered another specific experience she had with Pimisi as a child: *"When I was a kid I remember seeing older people catching eels and throwing them up on the land and they'd go right back to the water across the ground just like they had legs."*

ATK Interview: Jamie Deyo, Shabot Obaadjiwan (Sharbot Lake), December 4, 2013

Summary: This interview was conducted in-person. Jamie is a member of Shabot Obaadjiwan, the Algonquin community in Sharbot Lake, Ontario. He is also Chief Doreen Davis' nephew. Jamie was interviewed simultaneously with Doreen at the Shabot Obaadjiwan community office. As an avid outdoorsman and year round angler, Jamie provided many comments about the presence of the American eel in the intact small lakes, ponds and wetland drainages in the region around Sharbot Lake, including that eels are being caught during the catfish run in the spring and while ice fishing in the winter. He shared ATK regarding the medicinal uses of Pimisi. Jamie has never eaten an eel, however, he stated that it was mostly older people who would have kept the eels they caught and ate them.

How and When Eels Were Caught: Jamie commented on the abundance and the consistency of catching eels while ice fishing after dark with glow-in-the-dark lures and using minnows as bait. Jamie predominantly fishes for walleye and eels are not the target of his ice fishing. Eels are also being caught while mudcat fishing in the spring. Jamie is catching *"all different sizes of eel"* during the winter and approximated, with his hands to represent length, that the sizes varied from 12 inches to 3 feet. Jamie knows many people *"who catch lots of eels while ice fishing in the same way"* (see "Post-Interview Reflections" below).

Locations of Eel: Jamie stated that eels are *"all through the local water systems such as all the Depots Lakes throughout Sheffield and Camden Townships, Mink Trap Lake, Sharbot Lake, Smithfield Lake, from Verona to Parkham."*

How Eels Were Used: When Jamie was asked if he knew of some of the ways that eels were traditionally used, Jamie replied that eels were used for *"sustenance and healing purposes"* and

¹ In the Ottawa River Basin, dams and barriers do not provide passage.

that eels have the ability to “*move through places with very little water*” and “*can travel underground.*”

Regarding eel as sustenance, Jamie was asked if he had ever eaten an eel. He replied that, “*I never did eat one myself but I know people who did...it’s mostly the older people who ate them. If they caught eels, they were the ones that would actually keep them and eat them,*” adding that “*mostly people just threw them back in.*”

With respect to the healing properties of the eel, Jamie shared a story about his Great Uncle Paul, “*Paul always had eel skins hanging or drying on the railing of the porch.*” Jamie explained that Paul had almost cut his hand with a chainsaw and it had been reattached through surgery. “*His hand never did heal properly...he always wrapped it with an eel skin.*” When Jamie was asked if he knew what the eel skin would have done for Paul, Jamie replied that it “*might have acted like a poultice or something for the pain or the stiffness and swelling... it might have been the oils coming out of it that helped out with the pain.*”

Other Eel ATK: Jamie also believes that eels must have the “*ability to move through places with very little water between water bodies,*” and he thinks that “*...they can make underground movements*” (see “Other eel ATK and Information” under Doreen Davis).

Post-Interview Reflections: Jamie may or may not be catching eel while ice fishing. During the interview, Jamie stated that he referred to eel as being the same thing as ling. Burbot, also known as ling, ling cod, and eelpout, are a heavily sought after ice fishing species and can be caught using the methods described by Jamie.

American eels are reported to become completely inactive (in a state of torpor) and submerge themselves in mud when water temperatures are below 5 degrees Celsius (COSEWIC 2012). Nonetheless, the possibility that eel may be active during the winter and caught during ice fishing events should not be ruled out. Other scientific observations suggest that the American eel may be active and feeding during periods when it should be in torpor (COSEWIC 2012).

Seeking further photographic evidence from anglers like Jamie in that geographic area may help to identify definitively the species being caught. It is also important to document that in certain regions and local communities, these two species of fish may be referred to as one and the same. Regardless of species confirmation, Jamie’s comments raise interesting questions regarding Pimisi’s overwintering behaviours.

ATK Interview: Jim Richmond, Shabot Obaadjiwan (Sharbot Lake), December 6, 2013

Summary: This interview was conducted by telephone. Jim is a member of Shabot Obaadjiwan, the Algonquin community in Sharbot Lake, Ontario. He is an experienced angler and has spent a significant amount of time fishing the local streams, rivers, and lakes in the Sharbot Lake area and beyond. Jim has caught eels in the past and can provide information on locations where they were caught. Jim has prepared and eaten eel. The last time Jim saw an eel was 10 years ago. Jim remembers that eels were caught on a regular basis between 10 and 20 years ago.

How and When Eels Were Caught: Jim explained that the only times that eels were caught locally in the rivers were “*during the mudcat run*” with “*hook and worm rigs*” and that they were a “*fairly common catch in the rivers in the spring.*” In the fishing spots Jim knew, he said that eels were “*a regular catch before 10 or 20 years ago.*”

Locations of Eel: Jim said that he had “*caught eel on the Rideau River at Colonel By Lake which is the first lake on the Rideau River.*” Colonel By Lake is the first lake on the Rideau River, or the last, from the confluence of the Rideau and Ottawa Rivers. Jim has also caught eels at the Lower Brewers dam (lockstation) on the Rideau. At this location, Jim remembers that “*eels would stack up quite a bit during their runs.*” Eels were also commonly seen and caught at the Kingston Mill.

How Eels Were Used: When asked if he knew the ways that eels were used traditionally, Jim responded that he was “*only aware of eel being used as food.*” He himself had eaten eel. When asked how he would prepare the eel, Jim replied that he “*barbequed them*” and went on to elaborate that he had “*barbequed eel a number of times over the fire and on a barbeque.*”

Other Eel ATK: When asked if he knew when exactly in the spring that the eels were being caught, Jim shared from his knowledge and experience that “*eels were only caught after the water temperature was 57-58 degrees Fahrenheit [13-14 Celsius]... coinciding with the ‘mudcat’ run... you knew that the run was on when the cherry trees were blossoming.*”

Post-Interview Reflections: This ATK represents Aboriginal awareness and knowledge of seasonal patterns and natural events. Jim’s awareness of visual indicators, like cherry tress blossoming, may coincide with increased water temperatures which may dictate the movement of catfish. His experience beginning to catch catfish at particular times and at particular water temperatures raises a number of questions about eel behavior. Do eels become active in the spring at the same water temperatures that trigger catfish movements? Do eels become active earlier than temperatures that trigger catfish movements, but are not detected because people are not yet fishing for catfish and therefore are not catching eels incidentally?

ATK Interview: Jeff Driscoll, Algonquins of Greater Golden Lake, December 10, 2013

Summary: This interview was conducted by telephone. Jeff is a member of the Algonquin community of Greater Golden Lake and lives in the town of Petawawa, Ontario. He has a long history of fishing both the Petawawa and Ottawa Rivers. His experience with Pimisi was as a child in the 1970s, catching eels in the Petawawa River. He said that he did not try to catch eel but that it “*was a common catch when fishing.*” Jeff knew that other people caught them around that same time period in the Petawawa River. Jeff also said that his grandfather “*would catch eels around the islands in the Ottawa River across from the mouth of the Petawawa River.*”

ATK Interview: John Chartrand, Greater Golden Lake, December 17, 2013

Summary: This interview was conducted by telephone. John is a member of the Algonquin community of Greater Golden Lake and lives in the town of Petawawa, Ontario. He shared personal experiences of spending summers of his youth fishing on the Petawawa River, and catching eels with members of his family at three different locations.

How and When Eels Were Caught: John remembers that eels were “*caught in the summer time...while fishing for catfish in the evenings at dusk.*” John said that he and his family were never trying to catch eels when fishing. When John was asked if he remembered what size the eels were that he and his family were catching, John replied “*we never caught small eels... they were all really big.*”

John described a feeling or a sense of when you knew you were going to catch an eel. It seemed to John that “*when the catfish stopped biting, you knew you were going to catch an eel.*”

Once when we were up at [Half Mile Rapids], we were fishing at dusk and the catfish just stopped biting, and sure enough, we caught an eel. My grandfather said it always just happened like that too.” John continued, “maybe the catfish knew there was eel coming into where they were feeding, and the catfish took off and disappeared for a while or something, and the eel moved in.”

Locations of Eel: John provided three locations on the Petawawa River where he had caught eels: Half Mile Rapids, Big Eddy (above Third Chute), and near the mouth of the Petawawa, below First Chute. John described the location above Third Chute (also known as Big Eddy or Railroad Rapids) where he remembers that he and his brothers and cousins would go fishing and where an eel was caught: *“The eel was caught from shore above the rapids where the stone cribs are.... they [the stones piles of the cribs] used to be a lot bigger back in the fifties when there was a log boom that went right across the river there.”* The remnants of these stone cribs are still visible at this location.

Referring to the first reach of the river below First Chute, John said that *“sometimes both eel and sturgeon were caught at the mouth of the Petawawa by the golf course at the point just below the first chutes ... We were mostly fishing for pickerel [walleye] then...but sometimes we would get sturgeon and that is where we caught an eel too”* (see “Post-Interview Reflections” for comments regarding Lake Sturgeon). John went on to explain that this location has changed over time and that *“there wasn’t always those little islands there at the mouth, they kind of built up over time [through sediment deposits] and grew over with trees and plants...”*

Other Eel ATK: In recounting the events around his family outings at Big Eddy, he remembers, *“I used to go with my cousins and other family to pick cranberries, duck hunt, catch bullfrogs, and fish above the rapids at Third Chutes [also known as Big Eddy or Railroad Rapids].”*

John recounted his reactions as a youth catching the first eel he had seen. Referring to the eel caught near the log boom above Third Chute *“I didn’t want to handle it or take it off the hook, so I ran with it on the hook up the road all the way back home to show it to my father.”* The eel which John caught at Half Mile Rapids made it back to his house alive, *“we kept it in a metal wash tub overnight...those eels are hardy because it was still alive and moving around in the tub when my grandpa came up the next day. He taught me how to kill eel then...to stab it behind the head with the small blade of a jackknife. It was quick and clean.”*

Other Eel Information: John also relayed information of Aboriginal use of eel that he had read in an old version of Encyclopedia Britannica. In that volume, according to John, there was reference to a *“Cherokee ball game in which the players rubbed their legs with turtle shells to make their legs stronger and more protected, and the players wore wetted eel skins on their bodies to make them slippery and harder for other players to get a hold of them.”*

Post-Interview Reflections: The traditional knowledge that John’s grandfather passed down to him as a youth demonstrates the important intergenerational sharing of experience. John’s grandfather’s experience as a fisherman allowed him to understand and predict from his experiences that eels would be caught just after catfish stopped biting. That knowledge was also confirmed by his grandson when John was talking to him about the experience catching the eel at Half Mile Rapids.

This ATK raises questions about catfish and American eel interactions. Is the American eel in some way influenced or attracted to the location where catfish are feeding, to catfish feeding activity itself or by the bait or fishing technique being used? Do eels wait until catfish feeding

activity has succeeded before moving in? If in fact catfish disperse when eels move in, are eels then more aggressive than catfish while hunting/feeding?

Bringing his live eel home along with the story of how he caught the eel allowed John to learn firsthand from his grandfather. John's grandfather showed him how to kill the eel efficiently, so that he could then do it himself. The technique he demonstrated for John came from his own experience with the eel.

John also provided ATK concerning Lake Sturgeon – another culturally important species to the Algonquin and other Aboriginal peoples – specifically with respect to locations, fishing methods and other sturgeon fishing history on the Petawawa River. This information is not included in this report, but has been documented for future use.

2.5 Other ATK Interviews

ATK Interview: Jerich Morey, Aroostook Band of Mi'kmaq, Maine, December 4, 2013

Summary: This interview was conducted through email correspondence. Jerich is an elver fisherman in Maine.

Eel ATK: Jerich said that “...*the eel had been a large portion of the Mi'kmaq diet traditionally.*” He shared one ATK story passed down to him from his uncle David Sanipass of Maine who told him that, “*Before going to battle, our [Mi'kmaq] warriors would feast on eel to get energy.*”

Post-Interview Reflections: This Mi'kmaq ATK compares to Algonquin ATK documents which outline that the Algonquin people would gather and feast on eels before long voyages and portages into their winter hunting grounds. It is also known that feasting on eels creates a feeling of relaxation and induces rest. Perhaps the deep rest combined with the energy gained from consuming eel was needed for such physically demanding undertakings, such as going to battle or long, arduous journeys.

2.6 Local Knowledge Interview (LTK)

LTK Interview: Auggie Stencil, Town of Petawawa, December 11, 2013

Summary: This interview was conducted in-person. Auggie was a lumberman who had worked at a lumber camp at the Odenback Lumber Mill and at the camp at Radiant Lake in Algonquin Park in the late 1980s. Auggie shared his personal experiences about catching eels at Radiant Lake, which is part of the Petawawa River.

How Eels Were Caught: Auggie personally caught eels in Radiant Lake in the 1980s. He said that “*eels were caught during the summer,*” and when asked what time of day was the best for catching eels, Auggie remarked that it was “*always in the evening around dark.*” Auggie was usually fishing for pickerel [walleye] and catfish when he would catch eels, and he remembers that “*they were usually caught on minnows.*” He also remembers that “*Radiant [Lake] was a really good lake for catfish.*”

How Eels Were Used: Auggie recalls that not everyone who caught eels would eat them, and that other people at the camp just threw them back in the lake. However, Auggie did in fact eat

any eels that he caught. He remembers that the eels were “*fried or roasted on the fire*” and that “*eels tasted a lot like catfish...their flesh was very firm with not too much taste to them.*”

Post-Interview Reflections: This interview is included within this report because the Petawawa River is sacred to the Algonquin people. It is one of the major tributaries to the Ottawa River which remains unimpeded by hydro-electric dams. This interview provided documentation of the eel from an additional reach of the Petawawa River, and complements ATK documentation of the presence of the eel in other reaches.

2.7 Other American eel Informational Interviews

Interview: Jeff Beaver, Alderville First Nation Snimikobi, November 19, 2013

Summary: Jeff Beaver is from the Algonquin community of Snimikobi, and resides in Alderville First Nation. Jeff provided this information in an email in response to a voicemail left by the interviewer. Jeff indicated that the last time eels were caught and cooked at Hiawatha First Nation [across Rice Lake from Alderville First Nation] was in 1821. He suggested that it would be valuable to try to connect with members from Hiawatha First Nation. For additional American eel ATK and information, Jeff referred to reports by Bill Allen.

Interview: Larry Hilaire, Wildlife Biologist, Pennsylvania, December 17, 2013

Summary: This interview was conducted through email correspondence. Larry Hilaire is a Wildlife Biologist for the Delaware Water Gap National Recreation Area, National Park Service in Milford, Pennsylvania. The Delaware River was the heart of Lenape-Delaware Traditional Territory and is bordered by Delaware, New Jersey, Pennsylvania and New York. Larry is very connected to traditional Lenape-Delaware culture. Larry understood that eels were an important food source for the Lenape and provided some traditional eel fishing methods. He did not think that the eels were revered as sacred by the Delaware-Lenape, as they are for Algonquins. Larry provided excerpts from literature and historical documentation of the Lenape-Delaware and the American eel. Larry also provided additional ATK and historical information on behalf of third party contacts (see Appendix D).

How and When Eels Were Caught: Larry provided information about how eels were fished from historical accounts, writing that “*generally both eels and shad were important food sources and were captured using eel pots – woven baskets placed in the outflow of the constructed fishing weirs. Seine-nets were also constructed and used.*”

Other American Eel Information: Larry also wrote that “*eels were not considered sacred [to the Lenape] in the sense you described in your note as far as we know.*” Larry communicated that two of the six nations comprising the Six Nations Iroquois Confederacy, the Tuscarora and the Onondaga had an eel clan [the Seneca are also known to have an eel clan].

Post-Interview Reflections: Although many Aboriginal peoples held historic and long-lived cultural connections with the eel, it is interesting to note that perhaps not all such peoples considered the eel as sacred. It is also important to note that where eel were historically abundant, other ‘sea-run’ fish species were also important to Aboriginal peoples. For instance, the American shad, as well as the American eel, were highly valuable to the Lenape-Delaware on the Delaware River.

The additional historical references provided by Larry and the third party contact document the Lenape-Delaware using specialized spears and torchlight to harvest eels at night in the summertime. These references also depict the harvesting of large numbers of eels using constructed weirs and traps and that eels were sold to early settlers. Full documentation and additional information is provided in Appendix D.

3. Reflections on ATK Interviews and Other American eel Information

The ATK and other American eel information that was collected during this project helps to further demonstrate the longstanding relationship between the Algonquin and other Aboriginal peoples and the American eel. The importance of documenting traditional medicinal uses of the eel, passed down over the course of generations, and still being practiced in recent times by the Algonquin people, cannot be overstated. Recording this body of knowledge is critical to ensuring that it remains available for future generations of Algonquins. The same holds true for the ATK from other Aboriginal peoples, within their families and their communities.

American eel information collected during the ATK interview process also raises many questions regarding eel behavior and biology, including the eel's daily/seasonal activity and movements, interactions with other fish species such as catfish, habitat usage and winter activity. Future ATK and other scientific research may shed additional light on a number of these areas. Recording eel fishing knowledge such as the locations of eel, habitat type, and the timing of these eel catches continues to help paint a local historical picture of American eel life history in locations and areas where eels are now either absent or in sharp decline.

The ATK collected from Algonquin members of Shabot Obaadjiwan included experiences of catching eel in the Rideau River/Canal system, and tributaries within the Napanee River watershed which drains into Lake Ontario. Within these waterways, Algonquins who were interviewed last remember personally seeing or catching eel between 10 to 20 years ago. Other information suggests that some people continue to see and catch eel within these waterways.

Lake Ontario and its Ontario tributaries have been less impacted by hydro-electric development (MacGregor et al. 2010). There is the assisted eel passage at the Moses-Saunders Hydro-Electric Facility on the St. Lawrence River between Massena, New York and Cornwall, Ontario and recent stocking programs have introduced yellow eels into Lake Ontario. A combination of these factors may have contributed to the relatively recent reports of eel sightings and catches from the Rideau and other tributaries to Lake Ontario and the upper St. Lawrence River.

In contrast, the Ottawa River and its tributaries have been impacted by over 50 hydro-electric developments. ATK from Algonquins who were interviewed from the Petawawa River area last remember seeing or catching eel from 35-45 years ago to over 50 years ago. The Local Knowledge Interview placed personal experiences with the eel on the Petawawa River 25-35 years ago.

The varying degrees in which Aboriginal peoples in Ontario have been able to maintain their cultural relationships with the eel may correspond to the lack of physical contact with the eel as a result from the drastic decline in eel populations. Aboriginal peoples in Eastern Canada may be able to maintain a stronger cultural tie to the American eel as there are fewer hydro-electric developments and more stable populations, which thereby allows people to uphold a physical relationship through the harvesting and consumption of eel.

4. Moving Forward

The collection of ATK and production of this report, as funded by AFSAR, enables the AOO to raise the profile of the Algonquin cultural connection to Pimisi as well as gain a greater understanding of eel knowledge from other Aboriginal peoples. Various Aboriginal peoples are connected to one another through similarities in their historical cultural experiences with the American eel. Unfortunately, the ability to maintain historical cultural experiences with the eel is largely related to current population levels. The depletion of eel stocks in Ontario has led to a significant loss of Aboriginal collective memory about the extensive use of eels (Allen 2007b) and severed the connection between the Algonquin people and this sacred animal (AOO 2012).

Not all Aboriginal peoples have experienced the catastrophic decline in eel stocks or the degree of cultural loss attributed to such a decline. There are Aboriginal communities who still have access to stocks of eels and are able to maintain a cultural relationship with the eel. While the Mi'kmaq for instance have more stable populations of eel within their Traditional Territory than the Algonquins, Denny and Paul (2010) warn that, "... *the situation in Quebec and Ontario are indicators of what is to come... the eels we have here today may not be here for our children and grandchildren.*" In the words of Allen (2007a), "*failure to preserve eel in the homeland of a people is akin to an assault on the identity of these peoples.*"

It is critical that the American eel be returned to Algonquin traditional culture, and to the lives of other Aboriginal peoples in Ontario. As political momentum builds in Ontario, the door to implementing eel recovery will soon be open. The primary goal of the Recovery Strategy is to re-establish the species in a wide variety of waters throughout its historical range in Ontario by 2150 and at abundances that will restore cultural relationships and natural heritage values (MacGregor et al. 2013). When the Government of Canada decides that it is necessary to develop the federal recovery strategy for the American eel, the AOO urge the government to honour the significance of the Algonquin and Aboriginal cultural connection to the eel and to consider the value of ATK in restoring and protecting the eel and its habitat.

Preserving Algonquin ATK and the cultural memory of the connection to Pimisi within Algonquin Traditional Territory is an Algonquin responsibility. Preserving and restoring the American eel within historical waters and securing a place for the eel for future generations are responsibilities we all share. In the time of eel abundance, traditional culture compelled Aboriginal peoples to share the wealth of this important resource amongst family and community members. Eel knowledge was shared from generation to generation. In this spirit of sharing, it is now important that Aboriginal peoples continue to share their cultural experiences and knowledge of the eel with government agencies, stakeholders and other Aboriginal communities.

The AOO will strive to continue to document and compile ATK concerning the American eel. This report will be used by the AOO to communicate the Algonquin and Aboriginal cultural relationship to the eel in order to raise awareness of the plight of the American eel. The beloved Algonquin Elder, Grandfather William Commanda (1911-2013) once said, "*Today the plight of the Eel must Awaken us to the crucial need to transform our relationship with Mother Earth and All Our Relations, and awaken us to the pivotal role of Indigenous Peoples in this process*" (Undated).

Acknowledgements

We thank all those who made important contributions to this paper by taking the time to review earlier drafts and provide their thoughts and valuable feedback.

Personal Communications

The following individuals made special contributions to this report by personally sharing their knowledge and resources, and we thank them:

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Appendix A: Specific Aboriginal Values and Uses of American eel

Various Aboriginal cultural connections to the American eel and traditional uses are explored below. This compilation builds upon information contained within *Bridging the Gap between Scientific and Aboriginal Traditional Knowledge: Returning Kichissippi Pimisi, the American eel, to the Ottawa River Basin* (AOO 2014) and raises awareness of the Algonquin and other Aboriginal peoples' connection to the eel within Ontario waters and beyond.

Eel as Food

ATK and historical documents reveal that there were extensive Aboriginal fisheries for American eel in many areas of the eel's historic range, and that the eel was a very important food source to a number of Aboriginal groups. The key to the food value of the American eel lies in its high fat and protein content. In centuries past, the high energy value of eel provided the Algonquins and other Aboriginal peoples with a preferred food for travel (Allen 2010). In Algonquin Traditional Territory, a rich supply of eel could be secured, consumed or preserved for travel at the locations which served as access points to long interior voyages. Long ago, the Mi'kmaq consumed eel to gain energy in preparation for battle (Morey 2013; Kraft 2001). Eel is also known to cause relaxation and sleep after consumption (Denny and Paul 2010). Perhaps it was the combination of the rest brought upon by the consumption of a good meal of eel, and the later increase in energy that benefited traditional Aboriginal culture in preparing for arduous tasks.

Through various methods of smoking, eel flesh is easily preserved, allowing it to be carried along as travel food or stockpiled and stored for future consumption. In *Algonquin Traditional Culture*, Whiteduck (2002) writes that "*Eel were known to be smoked by the Algonquins, Montagnais, and Attikamek... Archaeologists have noted that Archaic peoples who had used Morrison Island on the Ottawa River, had stockpiled smoked eel for winter use.*" The Algonquins were known to survive on stores of smoked eel long into the harsh winter months and this aided their survival during particularly lean times. Citing Thwaites (1896-1901), in *Otonabee Pimisi, American eel (Anguilla rostrata) on the 'Journey to the Land Between'*, Allen (2007a) provides early Jesuit documentation of Aboriginal peoples along the St. Lawrence River cutting slits in the eel when smoking it so that the smoke would penetrate deep and preserve them for later use. As a last resort survival food, Allen (2007b) states that smoked eel skins offered the final hope of surviving starvation during times of famine. Even clothing that had been soaked in eel oil to waterproof it such as moccasins and outerwear, could be eaten as a last resort (D. Whetung to W. Allen in Allen 2007b).

The Mi'kmaq in Atlantic Canada used eels in stews, baked them, and also smoked and preserved them for later uses (Prosper and Paulette 2002). Eel is still a highly regarded food source by the Mi'kmaq. Through ATK collections, Mi'kmaq Elders have even said that they would choose a meal of eel over salmon and lobster (Schuergraf and Dowd Undated). The Mi'kmaq still offer eel as part of their powwow celebrations today, and eels are an important part of mid-winter feasts (Denny and Paul 2010). Other Aboriginal peoples from Atlantic Canada and the United States continue to consume eel in modern times. In her article, Gaines (Undated) includes ATK from a Wampanoag man who describes how he eats the eels he catches by spear-fishing in winter. He brings "*the eels home and skins them cuts them into 2 ½ inch chunks, then rolls them in flour or bread crumbs [and] fries them in butter.*"

Aboriginal eel Fishing Techniques

The former abundance of eel throughout its historical range supported many Aboriginal fisheries encompassing both marine and inland freshwater systems. Traditional Aboriginal eel fishing techniques took advantage of the predictable times and locations when eels congregated and could be harvested in large numbers, such as during migration and overwintering. Eel fishing methods relied on the knowledge, awareness and utilization of natural landscape features, weather events, eel life cycles and eel behaviors. In this way, eels were harvested in large quantities by various methods including spears, stone weirs, wooden traps, baskets and nets. Often, combinations of these methods were employed. The harvesting of eel was often a communal activity. Gaines (Undated), writes that the Wampanoag of coastal New England were “*very sociable, and would go to catch eels as a group, enjoying the camaraderie of the hunt, working cooperatively to secure a larger catch.*” In most historical documentation of eel fishing methods, eel fishing is cited as being undertaken by more than one person.

Eel Spearing

Spearing was a commonly employed eel fishing method by the Algonquins and many other Aboriginal peoples. Specialized eel spears, and the methods used while spearing, are historically documented among the Algonquin, Lenape-Delaware, Montagnais, Mi'kmaq, St. Lawrence Iroquois peoples and likely many others.

Eel spear designs and methods used varied between summer and winter eel harvesting. Spearing eel during summer months was a visual process and was done at night. A torch light was used in order to see the eel. The summer eel spear included a long pole tipped with a two pronged spearhead with a central spike. With a thrust, the eel was forced past the prongs and impaled by the spike. The eel could not slip off the spike because of the shape of the prongs on either side of the spike (Weiler 2011). In *Algonquin Traditional Culture*, Whiteduck (2002) presents Jesuit documentation (JR: 308-310) from Quebec in 1634 describing an eel spear used by the Montagnais. The spears consisted of a pole with an iron point and two curved [barbed] wooden sticks [prongs] on either side of the point. When the spear was thrust, the eel would be forced between the two prongs and be impaled by the iron point. The curved prong which then closed behind the eel would prevent it from getting away. This documentation as provided by Whiteduck further details the act of spearing eel:

“This harpooning [spearing] is usually done at night. Two savages enter a canoe – one at the stern who handles the oars [steers] and the other at the bow, who, by the light of a bark torch fastened to the prow [bow] of his boat, looks around searching for the prey, floating gently along the shores of this great river [St. Lawrence River]. When he sees an Eel, he thrust his harpoon [spear] down, without losing hold of it, pierces it... then throws it into the canoe [lifts it in to the canoe] while impaled on the spearhead. There are certain ones who will take three hundred in one night, and even more, sometimes very few. It is wonderful how many of these fish are found in this great river in the months of September and October” (JR 6:308-310).

The Algonquins were also recorded spearing other fish in the same fashion, via canoe, and flaming birch bark torches at night (Whiteduck 2002). Kraft (2001) provides historical documentation from Moravian Missionary David Zeisberger (1910) of the Lenape-Delaware along the Delaware River spearing eels with specialized spears and ‘split-pine’ torches on a summer night in 1710 (see Appendix D for full quotation).

In contrast to summer eel spearing, winter eel spearing was tactile and involved a different strategy as well as a different type of eel spear. For winter spearing, a longer pole tipped with a wider spear head with more barbed prongs narrowly spaced was used. This method involved using a long spear to prod muddy bottoms of water bodies to find submerged eels through a hole in the ice (Weiler 2011). The wider head with more prongs allowed for the potential of snagging more than one eel at a time and to cover more area when probing. It is undocumented whether Algonquin and other Aboriginal peoples in inland fresh water environments partook in wintertime eel spearing, or in the same manner as Aboriginal peoples harvesting eel in marine estuary environments.

Eel Weirs

The efficiency of constructed weirs in supplying Aboriginal peoples with large quantities of eels is also well-documented in the historical record. Citing Thwaites (1896-1901), Allen (2007b) provides observations from early Jesuits marveling at Aboriginal weir engineering which could hold five or six hundred eels. Weirs took advantage of natural features on the rivers and modified the environment to increase efficiency. The weir was also used in combination with other eel fishing technologies such as nets, pot traps, and spears. In *Otonabee Pimisi, American eel (Anguilla rostrata) on the 'Journey to the Land Between'*, Allen (2007a) describes that, “*The combination of natural bedrock ridge and stream cobble placed strategically to channel the movements of the eels enhanced the success rate of spearing eels at such locations... Sometimes a net was set in the path of the diverted stream flow to capture eels.*” Along the Delaware River in the Eastern United States, historical Moravian documentation describes that the Delaware-Lenape would catch a thousand eels in a single night with a combination of stone weirs and pot traps (Zeisberger 1910 in Kraft 2001).

There are many remnant Aboriginal stone weir structures that have been found in rivers in New York, Pennsylvania, Maine, Nova Scotia and Ontario. Some weir structures date back more than 5,000 years (Prosper and Paulette 2002). A few examples of remnant weir structures of both stone and wooden-stake construction have been found across historic eel habitat in Ontario, including but not limited to Eels Creek, the Madawaska River, and locations along the Ottawa River.

The name for one Algonquin First Nation in Quebec on the upper Ottawa River is *Mitchikanibikok Inik* (Algonquins of Barriere Lake) which means ‘*People of the Stone Fence or Stone Fish Weir*’ (Mitchikanibikok Inik 2014). The name for ancient eel fishing technology and the cultural connection to traditional fishery practices is engrained in this Algonquin community’s identity through its name.

Other Traditional Eel Fishing Methods

In her article “Eel Fishing,” Gaines (Undated) references an unusual eel fishing method quoting an April 1621 Pilgrim documentation of a Wampanoag named Tisquantum (or Squanto), “*who in the afternoon... went to Eel River, and by treading in the mud, caught with his hands alone, as many fat eels as he could bring back...*” Other historical accounts of New England’s Wampanoag’s fishing techniques include the uses of basket traps, “*in some places baskets were used to catch the plentiful eel. Narrow necked baskets were submerged to the bottom where the eels would swim into the dark interior to hide. With a quick flip they were hauled ashore.*”

Eel as a Material Item

The eel provided the Algonquin and other Aboriginal peoples with many practical uses. The tightening properties and durability of the eel's skin made it useful as a binding material for sleds, moccasins and clothing and for tying spearheads and harpoon heads on to shafts (Prosper and Paulette 2002). Murray Whetung, an Elder from Curve Lake First Nation, described that a sleeve of eel skin could also serve as a bow-grip when it was slid over hunting bows and tightened in place as it dried (Allen 2007a; Allen 2007b). It is understood that the author is referring to the 'grip' or 'handle' of a bow. The tightening properties of eel skin would have also been used as a strengthening 'bandage' when wrapped around the bow wet. As it dried and tightened it would greatly increase the bows draw-strength.

Eel skin even found its place in the traditional games of different Aboriginal peoples. The Cherokee were known to have applied wetted eel skin to their bodies during a ball game to make themselves slippery to an opponent (Cantrell 2005). Due to its durability, eel skin was used in support of another Aboriginal ball game, lacrosse, in which the eel skin was used to make the ball (Allen 2007a; Allen 2007b).

Aesthetically, eel skin was also reportedly used as hair ties (SRSF 2002; Cantrell 2005). Cherokee women would tie their hair up with eel skins to make it grow long (Cantrell 2005).

Eel oils possessed practical uses as well. It has been suggested that eel oil could be applied to the hair and body to defend against the weather and as a hair wash to strengthen hair in the same manner as bear oil. Eels were a more readily available supply of fat than that of the bear. The oils were also applied to buckskin and fringe to waterproof it (Allen 2007a; Allen 2007b).

Eel as a Trade Item

Eel provided various Aboriginal peoples with a valuable trade item. Allen (2007b) explains that in the 1620's Champlain reported that Aboriginal people were very skilled at fishing eel and were hard bargainers in trade. Champlain subsequently bought 1,200 eel with storehouse goods at a rate of 10 eels for 1 beaver. Kirby Whiteduck, Chief of the Algonquins of Pikwàkanagàn First Nation, has said that the eels were also used for trade with settlers or presented as a gift (Whiteduck 2011). Historically, eels were used between different Mi'kmaq communities to acquire potatoes and other produce from farmers (Schuergraf and Dowd Undated). Among the Mi'kmaq, the gifting and sharing of eel is still common place among communities and families who harvest eel (Weiler 2011).

Eel as a Medicine

The eel was revered for its medicinal values by various Aboriginal peoples. The skin was of particular importance for medicinal applications. Eel skin was removed during the cleaning of the eel as a whole piece. While the skin remained moist and flexible, it could be wrapped around a sprained wrist or an ankle as a bandage (Weiler 2011). Its tightening properties made the eel skin a useful brace for sprains (SRSF 2002). Allen (2007a) reports ATK from an Elder, Murray Whetung at Curve Lake First Nation, that the tightening quality of eel skin made it a useful splint for broken bones when needed.

Lacey (1993) describes a commonly known remedy for lameness which was to apply the slimy side of an eel skin to the affected area of the body. For headaches, the eel skin was tied

around the head. Lacey also writes that the Mi'kmaq people applied eel skin to the body to treat cramps and rheumatism, or worn tight against the skin to treat sprains. Reference to other Mi'kmaq medicinal uses of eel is provided in SRSF (2002) explaining that "*juniper balsam and eel skin made a good poultice for sprains*" (Lacey 1977).

Eel skin was also applied to the body to treat inflammations, wrapped around the neck to treat sore throats and to rid the body of infections as its dried (AOO 2014). Algonquin ATK obtained through interviews conducted for the purposes of this report, as well as previous ATK collections, confirms that Algonquins used eel skins as poultices for inflammation and bandages around major joints such as the wrist, and that this method has been practiced in recent times. It appears that the Algonquin Elders who knew the medicinal values and uses of eel skin always had eel skins on hand for use (Davis 2013; Deyo 2013).

It is expected that it is the oils within the eel skin which contains the medicine to treat pain, swelling, and stiffness of injury and/or arthritis in the joints (AOO 2014; Davis 2013; Deyo 2013). Cantrell (2005) writes that eel oil was used by the Cherokee to treat rheumatism and stiff joints. Eel skin appears in many cases to be applied in order to deliver medicinal oils to the affects area of the body. Citing Prosper (2011), Weiler (2011) explains that eel oil is easily rendered by boiling or frying the eel, and then collected for medicinal application. As an ointment, eel oil was helpful for earaches and applied topically to cuts to accelerate the healing process (Weiler 2011).

The American eel is considered to be medicinal as a food source as well. As eels are high in Omega-3 oils (unsaturated fatty acids), they induce sleep and relaxation, protect against type 2 diabetes, cancer, cardiovascular diseases, and are important in brain development. The Mi'kmaq consider eel to be a powerful food for maintaining good health (Denny and Paul 2010).

Eel as a Sacred Animal

Across its traditional ranges, various Aboriginal peoples have held a spiritual bond to the American eel. Allen (2007a) writes, "*Aboriginal people have long viewed the eel as a source of spirituality... as well as an object of special ceremony.*" The Algonquins consider the eel to be a sacred animal and the eel is the prayer carrier of the waters, as they travel long distances both through fresh and salt water, and through wetlands and underground passages, connecting all of Mother Earth (AOO 2012; Davis 2013; Deyo 2013).

Algonquin people honoured Pimisi through ceremony. Each year during the eel harvest season, entire Algonquin villages would gather in ceremony to give thanks to the Creator for this life-sustaining animal (AOO 2014). The Mi'kmaq also hold a 'giving thanks' ceremony of which the eel is an important part. The ceremony called 'Feeding of Grandfather' takes place at the end of January to give thanks to the spirits for surviving the harshest time of the year. In Prosper and Paulette (2007), there is a quote of Murdena Marshall (1997) describing the ceremony, "*when darkness has settled, food is put out into the night preferably on an old stump or near a tree and offered to the spirits. In days gone by eel skins and fish heads were offered. An elder would lead the family to a stump, give thanks for surviving thus far, and ask for additional assistance until spring.*"

Other parts of the eel's body were also offered during other ceremonies. Eel heads and organs such as the heart and liver were buried until fall when they were retrieved and offered in prayer for a successful hunt and harvest (Denny and Paul 2010). In order to have a successful hunt or fishing expedition, the Mi'kmaq believed an offering to the Creator was required. Citing the

poem “*Legend of Glooscap’s Door*” from the late Mi’kmaq author Rita Joe (1988), the legend says that through an opening to a hole through a cliff [Glooscap’s Caves at Cape Dolphin, Nova Scotia] eel and tobacco were left by hunters on a flat stone [Glooscap’s table at the entrance to the cave] as a gift for Glooscap to bring good luck during the hunt (Prosper and Paulette 2002).

Even the heads of the eels were saved and carried as tokens for good health. In one of the highest forms of Aboriginal reverence for the eel, “*eels were requested as a last meal by those on the verge of entering the spirit world*” to help ease the transition into the afterlife (Denny and Paul 2010).

Citing Thwaites (1896-1901) Allen (2007b) explains that early French newcomers to North America witnessed an Aboriginal ceremonial offering involving the eel in which frightened Aboriginal people were apparently throwing eels into the fire to appease the devil. This account, which is potentially biased by the religious beliefs of the observer, is contradictory to other Aboriginal spiritual taboos regarding the treatment of eel and other fish. For instance, the Huron, on the Georgian Bay of Lake Huron, were documented to have heavily scolded a Jesuit Priest who had placed fish bones in a fire and they quickly removed the bones from the fire. They believed that if fish bones were burnt then this would offend the spirits of the fish and they would be unable to catch fish in the future (Saguard in Whiteduck 2001). The Algonquins who were allies of the Huron and traded frequently with them likely shared this belief as well. Nicholas Denys in 1671 reported a similar taboo specific to the eel and the Mi’kmaq. It was believed that if an eel was roasted then they [Mi’kmaq] would be unable to catch eel at another time (Denys 1908 in Davis et al. 2004).

Another example of the ancient spiritual relationship of Aboriginal peoples to the eel lies in the various legends and sacred ancient artwork such as petroglyphs and pictographs depicting serpent-like animals which may in fact be eels (Paulette 2007; Allen 2007a). Petroglyphs of horned serpents in Kejimikujik National Park may represent the ‘Great Horned Serpent’ of legend. The Mi’kmaq believe that this creature and the eels are one and the same (Prosper and Paulette 2002). Allen (2007a) suggests that in Ontario there may be reason to suspect that serpent-like pictographs in Algonquin Park, rock carvings within the Teaching Rocks of the Peterborough Petroglyphs, the Serpent Mounds [Burials] on Rice Lake, and legends and depictions of winged serpents and giant water snakes could perhaps actually be depicting the American eel.

Three Mi’kmaq legends about the eels are provided below. These legends further demonstrate treatment of the eel as a spiritual being:

The Legend of the Tidal Bore as told by Michael Francis (Weiler 2011)

In the days of Glooscap, the river water was clear and fresh until a monster Eel swam down the river and pushed all of the fishes and all the fresh water into the salty bay. Turtle told Glooscap of the cruel hardships that resulted. Glooscap gave great powers to Lobster, who grew much in size and strength and fought the Eel. The long battle stirred up much mud and many waves far up the river until the Eel was killed. And even today in Glooscap’s bay and on the muddy river, with an elbow bend, the battle scene takes place twice a day.

“Storm Maker” in *Red Earth: Tales of the Micmac* (Robertson 1969)

“One legend, ‘the Storm Maker’ (a mighty bird), tells of the plentiful supply of eels and other fish in the sea which were the main source of food for the Mi’kmaq people during the ‘hungry moons

of winter.’ This was the case until the arrival of the Storm Maker. The Storm Maker caused all the fish and eels to be swept out to sea by the wind created through the flapping of its wings. A Mi’kmaq tricked the Storm Maker and bound up its wings to prevent it from driving the fish and eels out to sea. But, a scum covered the water so that the people were unable to see the eels and fish. At this point, the Storm Maker’s wings were unbound by the Mi’kmaq after giving the promise not to cause such strong winds. The Storm Maker did create enough wind, though, to blow away the scum and allow the people to once again see the eels and fish.”

The Legend of Glooscap’s Door in *Song of Eskasoni: More Poems of Rita Joe* (Joe 1988)

*There is a doorway to Glooscap's domain
Where you throw dry punk and fish
For his fire and food.
But you must not enter
Though you may leave a gift on stone
Waiting to feel goodness.
This is the way the legend goes
So the Micmac elders say.*

*At Cape North on a mountain you whisper,
"My grandfather
I have just come to your door
I need your help."
Then you leave something you treasure
Taking three stones.
This is your luck.
This is the way the legend goes
So the Micmac elders say.*

*At Cape Dolphin near Big Bras d'Or
There is a hole through a cliff
It is Glooscap's door.
And on the outside a flat stone
It is his table.
The Indians on a hunt leave on table
Tobacco and eels.
This brings them luck, so the story goes
The legend lives on.*

– Rita Joe

Appendix B: Consent to Release Information Form



Algonquins of Ontario



SOUTH NATION
CONSERVATION
DE LA NATION SUD

You are invited to participate in “*Bridging the Gap between Scientific and Aboriginal Traditional Knowledge: Exploring Algonquin and Aboriginal Relationships with the Eel*”, an exciting project being completed by the Algonquins of Ontario in partnership with the South Nation Conservation. The purpose of this project is to collect and compile Aboriginal Traditional Knowledge (ATK) about the American eel (*Anguilla rostrata*) and help strengthen the Algonquin cultural connection to the sacred eel.

The collection of oral histories will be conducted through personal interviews throughout the Algonquin Traditional Territory in Ontario, and with other Aboriginal peoples who share a cultural relationship to the eel. The interviews will feature a series of questions focused on fishing methods, catch, preparation and cultural significance of the eel. The length of each interview will vary for each participant, allowing the length of time necessary. Following verbal consent, the interview may be recorded using a digital voice recorder. If you wish, you may refuse the recording of the interview and written notes will be taken.

CONFIDENTIALITY

The digital recordings, transcripts and written notes from these interviews will be stored electronically and will be password protected. Access to these resources will be limited to the Algonquins of Ontario. The information collected during this process will be stored indefinitely at the Algonquins of Ontario Consultation Office in order to contribute to the body of knowledge of the eel. Quotations will be used in the final document of this research. If you wish, you can choose to remain anonymous and have your quotations remain anonymous. You will have the opportunity at the end of the interview to modify any statement. When quotations are selected, they will be provided to you prior to the completion of the project for your review and approval.

Appendix C: Standard Interview Template



Algonquins of Ontario



SOUTH NATION
CONSERVATION
DE LA NATION SUD

PIMISI – AMERICAN EEL

ALGONQUIN/ABORIGINAL TRADITIONAL KNOWLEDGE INTERVIEW

NAME:

COMMUNITY:

Date:

Time:

Summary:

Interview Questionnaire

1. When is the last time you saw or caught an eel?
2. Who did you go with?
3. How did you catch them?
4. How often did you go?
5. What time of year did you go?
6. Were they plentiful?
7. Did you have a particular place to fish for them year-to-year? Can you describe this location?
8. How have these locations changed over time (eg. depth, pollution, flooding, drought)?
9. When is the last time you ate eel?
10. How was it prepared? Who prepared it?
11. Was this experience shared amongst your family? And/or amongst the community?
12. Are you aware of any traditional significance of the eel?

Notes:

Follow-up: Arrange a future time to review interview information before draft report is finalized. Interviewee to receive a final copy of report.

Appendix D: Additional American eel Information Provided During Interview with Larry Hilaire

- Larry Hilaire provided information from “Fishing” (pg. 267-272) in *The Lenape-Delaware Indian Heritage: 10,000 B.C- A.D. 2000* Kraft (2001). Larry provided reference to a quote (pg. 272), from the journals of a Moravian Missionary David Zeisberger (Zeisberger 1910: 38):

“In autumn, when adult eels migrated to the sea to spawn, the Indians caught thousands in a single night using a kind of basket weir or ‘eel pot.’ These traps were constructed with a funnel-like insert at the aperture which was set to face upstream... The captured eels were skinned and the surplus meat was dried and stored for future use. They [eels] are so fat that when fried it is as though bacon were being fried”

- Jim Rementer of Bartlesville, Oklahoma, was contacted by Larry Hilaire seeking additional information on the American eel and the Lenape-Delaware. Jim Rementer sits on the *Language Preservation Committee of the Delaware Tribe of Indians*. In Jim’s words:

“In answer to your question, although the Lenape name for eel is remembered, shoxamekw, I never heard very much about their [eels] use. Honestly I’m not sure how common they [eels] are out here in Oklahoma because I never heard anybody mention them. The word [shoxamekw] literally means ‘slippery fish.’ The first part “shox(a)-“ is the slippery part and the second part “-mekw” is the fish part. I sometimes get amazed how the Delawares were able to keep names for things they hadn’t seen for generations, words like whale, shad, and even the Tulip tree...”(Rementer 2013).

- Jim provided Larry Hilaire with historical documentation concerning the Delaware-Lenape and American eel from Ray Whritenour, a personal contact of Jim’s. Ray has edited or authored a number of books on the Lenape language including *"A Delaware-English lexicon of words and phrases: Vocabulary"* (1995). Ray is familiar with old Moravian writings, and was able to provide Jim with an account from the journals of John Readings for July 9 and 10, 1719 which referred to eel (Whritenour 2013):

“9th - this Indian town is seated on the lower end thereof in Pennsylvania and the upper end in Jersey. The lowland on both sides of the River perhaps may contain 5 or 600 acres, some of it exceeding rich, the other middling, but so invironed with hills that it scarce will ever be valuable to the Christians. To the place where the path first comes to it from Mahekkamack is 35 miles, which is close by a run side where our people had pitched their tents in which they caught several brave trouts. This night the Indians advanced from an Indian wigwam on Pennsylvania side with lighted torches in their hand, made of split pine, in No. 5, on fishing for eels which they struck with sticks shaped on purpose for it. Employ a light at dead of night, very dreadful, yet pleasant to behold. This night was rainy and cloudy.

10th - This morning the Indians brought plenty of eels caught overnight, of which we bought some which were dressed according to the best of our understanding.” (NJHS 1915)