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# Alutiiq Fish Skin Traditions: Connecting Communities in the COVID-19 Era

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**Abstract:** The Alutiiq, Indigenous inhabitants of the coastal regions of Southwest Alaska, created garments made from fish skins, especially salmon, expertly sewn by women from Kodiak Island. Traditionally, Alutiiq education focused on acquiring survival skills: how to navigate the seas in all weathers, hunting, fishing and tanning animal skins. Today, many Alutiiq people continue to provide for their families through subsistence fishing, honouring the ocean and navigating difficult times by listening to their collective wisdom. This paper describes the series of fish skin tanning workshops taught by June Pardue, an Alutiiq and Inupiaq artist from Kodiak Island that connected participants in Alaska Native communities during the COVID-19 isolation months. Through an online platform, June passed on expert knowledge of the endangered Arctic fish skin craft, assisting participants in coping with the pandemic crisis by tapping into their knowledge of the natural world, cultural resourcefulness, storytelling abilities and creative skills. Brought into the digital age, the fish skin workshops strengthened connections among Alutiiq and Alaskan craftspeople while establishing new connections with an expanded network of fashion designers, museum curators, conservators and tanners. Finally, the paper highlights how fish skin Indigenous practices address the United Nations Sustainable Development Goals (SDGs) regarding poverty, health and well-being, gender equality, clean water and sanitation, decent work and economic growth, social inequality, responsible consumption and production, climate change and maritime issues.

**Keywords:** alutiiq indigenous peoples; fish skin craft; traditional knowledge; education for sustainability; United Nations sustainable development goals



**Citation:** Palomino, E.; Pardue, J. Alutiiq Fish Skin Traditions: Connecting Communities in the COVID-19 Era. *Heritage* **2021**, *4*, 4249–4263. https://doi.org/10.3390/heritage4040234

Academic Editors: Claire Smith, Lilia Lucia Lizama, Israel Herrera and Alok Kumar Kanungo

Received: 13 September 2021
Accepted: 15 October 2021
Published: 6 November 2021



## 1. Alutiiq Indigenous Peoples and Fish Skin

### *1.1. Alutiiq Indigenous Peoples*

As noted by Rachel Mason [1], *Alutiiq* is a relatively new term that has been used since the early 1980s to refer to both the language and culture of the group of Alaska Native people indigenous to the Kodiak Island Archipelago (Figure 1) on the southern coast of the Alaska Peninsula and the lower tip of the Kenai Peninsula. Some archaeologists believe that the ancestors of the present-day Alutiiq have inhabited the land for over 7000 years [2].

With a subsistence economy largely dependent on the marine environment and its animal resources, the island and coastal regions of southwest Alaska provided access to a range of fish species, especially salmon, used in the past for clothing production. Archaeological data indicates that Kodiak's first settlers harvested salmon throughout the prehistoric era, with increasing intensity over time. About 900 years ago, Alutiiq people established large villages along major salmon streams where quantities of fish could be harvested [3].

When the first Europeans arrived in Alaska, Alutiiq culture was flourishing. In 1741, Danish explorer Vitus Bering (travelling on behalf of Russia) landed on Kodiak Island in the northern Alutiiq territory, and by 1760, Russian fur hunters were regularly trading with Alutiiq people [4]. Russians exploited native labour for their mammal hunting expertise

exporting and eventually exhausted Alutiiq fur skin resources. Local seamstresses were forced to rely on skins with little value to the export fur trade, particularly fish skins and bird skins to make clothes for their families [3].

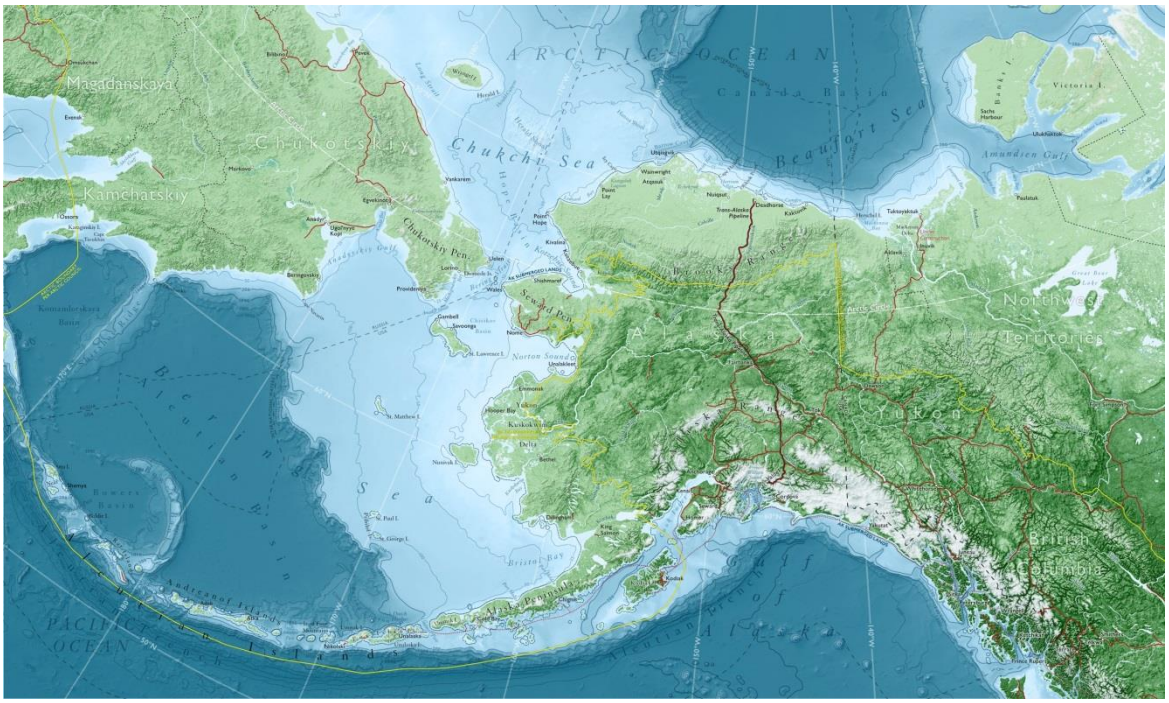


**Figure 1.** Alaska Peninsula and Aleutian Islands. *Crossroads of Continents*. Huffman. AK Audubon. 2017.

The arrival of Russian missionaries in Kodiak in 1794 and "institutionalised education" also had negative consequences for the Indigenous population. Missionaries attempted to supress traditional spiritual practice by banning shamanistic rituals, although some elders kept information about these rites. Traditionally, Alutiiq shamans, as healers and spiritual practitioners, made contact with the supernatural world [1]. The Russian education system attempted to eclipse the practice of the traditional Alutiiq culture which focused primarily survival skills: how to navigate the seas in all weathers, hunting fishing, or even how to repair your fish skin parka while out in the Arctic wilderness.

When Russia sold Alaska to the United States in 1867, Alutiiq lives were in peril. The Karluk River on the west side of Kodiak Island, one of the richest salmon streams in the world, had long been used as an exploitable fishery resource by Russians and Americans. The first cannery in Karluk was established in 1882 (Figure 2). Salmon, the staple of the Alutiiq diet, became a highly desired commodity, feeding the American economy. The industrial expansion of the salmon fishery quickly led to overfishing and a dramatic decline in salmon resources that had supported Native families for generations [1].

During the American period, Alaskan traditional clothing styles were viewed as backward by the newly arrived Americans who introduced manufactured Western clothing styles. Gradually the need, desire and respect for Native-made clothing disappeared [5]. Although fish remained an important food supply, by the mid-20th century, the use of fish skin clothing dramatically declined, with fish skin boots and parkas being replaced by rubber boots and commercially manufactured rain gear.


**Figure 2.** The Alaska Improvement Company. Salmon cannery at the mouth of the Karluk River. Kodiak Island. Alaska, USA. NARA. Kodiak Historical Society. 1889.

In the 1990s, the Kodiak Area Native Association (KANA) began to take greater control of salmon resource management and several Alutiiq communities implemented salmon hatchery programs, developing a firm economic base, balancing subsistence and commercial fishing. Although the technologies used to harvest and process fish have changed with time, Alutiiq people still rely heavily on fish and the tradition of handling the fish respectfully from initial capture to consumption has been passed from one generation to the next.

### *1.2. Alutiiq Fish Skin Traditions*

During the eighteenth century, an Alutiiq wardrobe included garments made from animal skins, especially sea otter, seal, bird, caribou, ground squirrel and various species of fish. These garments were expertly sewn by women from Kodiak Island. Specifically, the skins of salmon, cod, herring and halibut were used to make clothing, straps, bags and shoes. Women spent countless hours working during the dark winter months, by the light of oil lamps, to turn these natural materials into durable and beautifully decorated clothing.

Alutiiq used the skin of salmons to construct resilient, windproof parkas (Figure 3), ideal for Kodiak's maritime environment. A parka could be used as a bed, as a blanket and even as a house while travelling; that way, Alutiiqs were not afraid of damp, frost or wind [6]. Parkas were circulated through trade and travel and were regarded as coveted gifts. Festival hosts presented parkas to visitors at the end of winter gatherings. Before warfare, leaders distributed parkas to the members of their raiding party and parkas were considered valuable loot when taken from raided villages.

**Figure 3.** Alutiiq doll wearing a fish skin parka, gloves and boots. Alaska State Museum. Juneau, AK, USA. Artist: June Pardue. 2012.

For Alutiiq peoples, garments hold spiritual significance. As significant art pieces, they express the creativity and identity of the seamstress; as talismans, they provide a spiritual connection between people and animals, serving as both personal amulets and portraits of the Alutiiq universe. Through traditional tanning, processing and sewing, Alutiiq women believe it is possible to transfer the "spirit of an animal" into a garment made from its skin [7]. Hickman [8] describes fish skin parkas as a key component in shamanistic ceremonies preparing for the first fishing of the season. They were pieces of artwork that expressed the identity of their owner and forged a close spiritual connection between people and animals.

Historically, Alutiiq people dressed the dead in their best set of fish skin clothes, assisting them on their journey to the other side and enhancing their visibility in the spirit world. In this way, clothing both signalled and supported the transformation of the dead [7].

Recent cultural revitalization movements have strengthened craft traditions for Alutiiq people. Similar movements have occurred elsewhere among Alaska Native people. The Kodiak Area Native Association and the North Pacific Rim Health Corporation have developed a cultural heritage program supporting programs contributing to cultural identity [1]. Fish skin was once used as a common material in the Aleutian Islands; today, the number of Alutiiq artists continuing this tradition keeps growing. Many Alaska Native artists are making choices to preserve and pass on their Indigenous traditions and skills, such as fish skin tanning and sewing, so that these traditions remain a vital part of Alaska Native culture and identity [9].

## 2. Alutiiq Fish Skin Workshop during COVID-19 Isolation: Case Study

### *2.1. Project Creation*

The research is investigated through Elisa Palomino and June Pardue's current practices as educators. Elisa Palomino supports fashion design students engaged in the sustainable use of fish skin as an alternative raw material for fashion and June Pardue is an

educator in Indigenous cultural skills teaching in major Alaskan universities and over 25 rural locations across Alaska.

Before the arrival of COVID-19, Elisa had collaborated with three different Arctic and Sub-Arctic indigenous communities (Ainu from Hokkaido, Japan; Hezhen from Heilongjiang province, China; Athabascan from Alaska, U.S.) and she had created four fish skin tanning workshops across the Arctic [10]. Through their fish skin tanning practices, they had shared with her the knowledge of living in harmony with nature and with each other to navigate the hardest of times. In 2019, Elisa received a Fulbright scholarship to research Indigenous Arctic fish skin clothing at the Arctic Studies Center (ASC) at the Smithsonian National Museum of Natural History in Washington, D.C. and the ASC, Anchorage Museum in Alaska where Aron Crowell and Dawn Biddison introduced Elisa to the 2018 "Sewing Salmon project". In a series of video recorded workshops, Alaska Native artists met to learn and teach methods and cultural knowledge about fish skin processing and sewing through studying historic fish skin objects and through sharing and comparing techniques they developed [11]. June was part of the "Sewing Salmon project" and simultaneously ran many fish skin tanning workshops in Alaska also featured at the Anchorage Museum Arctic Studies Center web platform [12].

During the COVID-19 lockdown, Elisa kept asking herself: "Are we prepared to learn from this crisis?" "Who can we look to for inspiration?" "Where can we find a real model of resilience?" As Westerners, we have much to learn from Indigenous Peoples. Despite centuries of cultural assimilation, they continue to maintain a close connection with nature, resisting the standardization that comes with globalization. The Arctic Indigenous Peoples' vital relationship with the environment and essential dependence on the animals that support a subsistence lifestyle—including economy of materials and the spiritual role of fish skin—resonated with a variety of issues emerging during the COVID-19 pandemic lockdown.

> *"Resilience is the capacity of individuals, societies, cultures, economies, and ecosystems to reorganise and recover from change and disruption in a way that enables them to retain their identity and develop further."* [13]

A means of responding to the critical issues posed by the COVID-19 lockdown emerged in the proposal to co-host an online fish skin tanning workshop with June Pardue, a highly respected Alutiiq and Inupiaq artist from Kodiak Island, Alaska (Figure 4). Meeting in 2019 at the Smithsonian's Arctic Studies Center in Anchorage, Alaska, Elisa and June stayed in touch by social media. As educators, the lockdown presented similar problems in engaging students, both in Alaska (for June) and in London (for Elisa).

One the biggest challenges the COVID-19 emergency has created has been how to teach studio-based, hands-on courses online. Although universities around the globe have suspended classes and transitioned to remote teaching, distance learning is not easy for students who learn by making, requiring access to studios and workshops. As a response to digitalised education, Elisa wanted students to learn a new craft and start working with their hands again. Craft-based skills need to prevail in the context of massive digitalization during this specific period in history. Craft has the power to stimulate, inspire and soothe us—an important reason to keep making with our hands through this difficult period. Although online craft courses are not a new phenomenon, this fish skin platform offered possibilities for students from a range of backgrounds and nationalities to come closer despite the physical distance. Technologies such as Zoom online classes have helped to resolve contemporary issues, including the lack of connection during lockdown. Furthermore, lessons learned in lockdown will be imbedded into their practice for good.

Students had been in isolation on their own or with families for up to 12 weeks. It was paramount to bring them closer despite the physical distance. The goal was trying to support students through this difficult time keeping them inspired and connected. Engagement was also really important at a time where students were suffering from the lack of structure associated with the traditional classroom experience. Students missed the

peer support they received by being in the studio with each other, since so much additional learning goes on during that time.


**Figure 4.** Alutiiq fish skin tanning workshop in isolation flyer. May 2020.

The first fish skin workshop involved fashion students, an amateur leather tanner with knowledge on tanning technology and a museum curator expert in fish skin artefacts with experience in working with craft communities. After the initial workshop, June has taught more than twenty fish skin workshops amongst different Alaska village tribes and communities. As a result to all her commitment with fish skin tanning, June has recently been awarded a fellowship from the Rasmusen Foundation of Anchorage, Alaska. The contemporary struggles of Arctic Indigenous communities are often reflected in the loss of Indigenous practices. Indigenous technology, knowledge and cultural resources, such as those related to fish skin tanning, remain relatively inaccessible to students in Alaskan schools. Through the workshops, knowledge of fish skin tanning has provided students with specific skills and brought them closer to nature.

Focusing on what fish skin heritage means to different Arctic Indigenous groups and how they may value fish skin heritage differently, the workshops aimed to engage with cultural diversity and audiences with different abilities and areas of expertise, including museum curators, amateur tanners and young Indigenous students. Traditional knowledge of fish skin craft offers important opportunities for greater access to cultural heritage. In particular, fish skin heritage provides new opportunities in (re)connecting Arctic communities with common cultural heritage, which was removed through processes of colonialization and assimilation. The fish skin workshops brought into the digital age could make new and sustainable connections between the virtual world and craftspeople.

### *2.2. Participants*

Over a two-week period, Elisa and June publicised the initial fish skin workshop by reaching out to students, museum staff and amateur tanners, and through social media around the Arctic, by inviting Native students from remote communities around Alaska.

After the initial workshop (Table 1), June was invited to teach remotely in several Alaska Native institutions where she usually teaches in person. Non-profit institutions provide financial support to encourage heritage programs, creating opportunities to make Alaska Native technology more accessible in the state. This support for artists and tradition

bearers to pursue their work provides awareness of Alaska Native culture, reversing the negative impacts of colonization by reinforcing Indigenous traditions and encouraging pride in a culture that has been previously controlled by dominant globalising cultures [9].

**Table 1.** Description of the diverse roles and skills of the participants in the Alutiiq fish skin workshop in isolation.

| Participants | Expertise | Provenance |
|---|---|---|
| Researcher | Lecturer in fashion, textiles and sustainability with experience as a fashion designer in the luxury industry, enabling a process of embedding sustainability within educational programmes. | UAL, UK |
| Craftsperson | Carrier of Indigenous fish skin heritage, expert in fish skin tanning technology. | AK, USA |
| Students | Students with knowledge on tanning technology and environmental activism. | Worldwide |
| | Leather tanners with knowledge on tanning technology. | Worldwide |
| | Members of the Alaskan Indigenous community. | AK, USA |
| | Museum curators, experts in fish skin artefacts with experience in working with craft communities. | UK; AK, USA |

The online workshops for remote communities around Alaska were taken both by artists and young students. Families and parents participated with their younger generations during the live classes, reinforcing the strong connections amongst Arctic communities. One of the Alaska Native Corporations' Educational Programs paid for an Elder to take June's class so that she could learn the ancient skill to begin her fish skin tanning industry. Ellen Carlee, curator at Juneau's Alaska State Museum who participated in one of the workshops, shared photographs on her Facebook page (the most common social media for Alaska Native artists) of fish skin artefacts stored at Alaska State Museum so the rest of June's students could benefit from them (Figure 5). Following the workshop, Ellen processed fish skin with several friends in Juneau and gave a lecture to some conservation students at from New York University on Alaskan proteins used in material culture, encouraging them to try experimenting with fish leftovers from dinner.


**Figure 5.** Juneau Alaska State Museum curator Ellen Carrlee's Facebook page after her fish skin workshop with June Pardue.

## 3. Workshop Content

### *3.1. A Lecture on Historical Fish Skin Artefacts in International Museums*

During the workshop, Elisa introduced a series of fish skin artefacts from archives and museum collections around the Arctic that she has studied during her previous fieldwork (Figure 6). These objects, created by artisans throughout the nineteenth and early twentieth centuries, reveal Arctic peoples' intimate relationship with their environment through fishing and skilfully processing the fish skins. Fish skin objects from the Arctic and Subarctic regions reflect everyday items of clothing, bags, boots, mittens and skin scrapers for preparing hides. Today, these artefacts are highly valued and sought after by the native descendants of those who created them for their artistic value, craft and representation of cultural development and humanity adapting to a wide range of environmental conditions [14].


**Figure 6.** Images from the lecture on historical fish skin artefacts in international museums.

### *3.2. Storytelling*

June and her husband Charlie share a childhood spent travelling between ancestral fishing camps. During the workshop and while engaged in the mechanical processes of tanning the fish skins, June often passed on elders' stories, sharing environmental, ancestral and spiritual knowledge. These narratives brought teacher and students together, inspiring warmth and intimacy, further emphasizing the need to keep the fish skin tradition alive within younger generations.

> *"Oral history does more than provide information about the past, it brings the past into correspondence with the present, providing scope for imagining new."* [15]

June uses personal anecdotes about living in the Arctic, often weaving traditional stories passed down from her elders with her own life stories, including tales of long harsh winters where people gathered at home around the fire. Listening to elders' stories reinforces the importance of storytelling in terms of cultural survival of oral culture.

### *3.3. Subsistence Partnership*

June Pardue and her husband Charlie harvest salmon during autumn. Using fish skin to make traditional Indigenous artefacts is an extension of the subsistence activities that she takes part in with her family. June stressed the importance of the combined efforts of husband and wife in their subsistence partnership with the raw materials and tools for processing the skins provided by Charlie, as hunter/fisherman and husband, and the expertise and labour of tanning the skins provided by June as the seamstress/wife. This partnership has long sustained the social structure of Arctic Indigenous societies.

Arctic fish skin clothing is, therefore, produced through the combined efforts of fisherman and seamstress.

Tanning skins, which consists of scraping, soaking skins in rotten brains or urine and hanging them outside, is considered women's work. In the past, Alutiiq women tanned skins with urine collected in large wooden tubs stationed outside their houses, relying on the ammonia in the urine for one or two days to remove excess oils and break down any remaining fat. Then, they rolled and left them in a warm place to sit until the flesh and scales could be easily scraped away [3]. Today, tanners have modified the technique, using lye or another soap or detergent. Once the skins are clean, they are worked for hours by manual manipulation, massaging and stretching the skins until the fibres break down, becoming soft and pliable.

## 4. Fish Skin Tanning and Dyeing

### *4.1. Materials*

June and Elisa agreed to use materials not too difficult to access during lockdown. Students were asked to go to parks and woods to gather bark from willow, alder or oak trees for tanning and obtain fresh beets from stores (Figures 7 and 8). Students used fish skins locally available to them. For example, Charlotte Ridley, a conservator from the Horniman Museum in London, used sea bass fillets from Waitrose supermarket (Figure 9) while Joe, an amateur tanner from Minnesota, used trout skins he had caught himself

**Figure 7.** June's willow, alder bark and beet root tanned skins with handmade scraping tools and Ulu knife (bottom).

**Figure 8.** Skins tanned with alder bark left to dry.

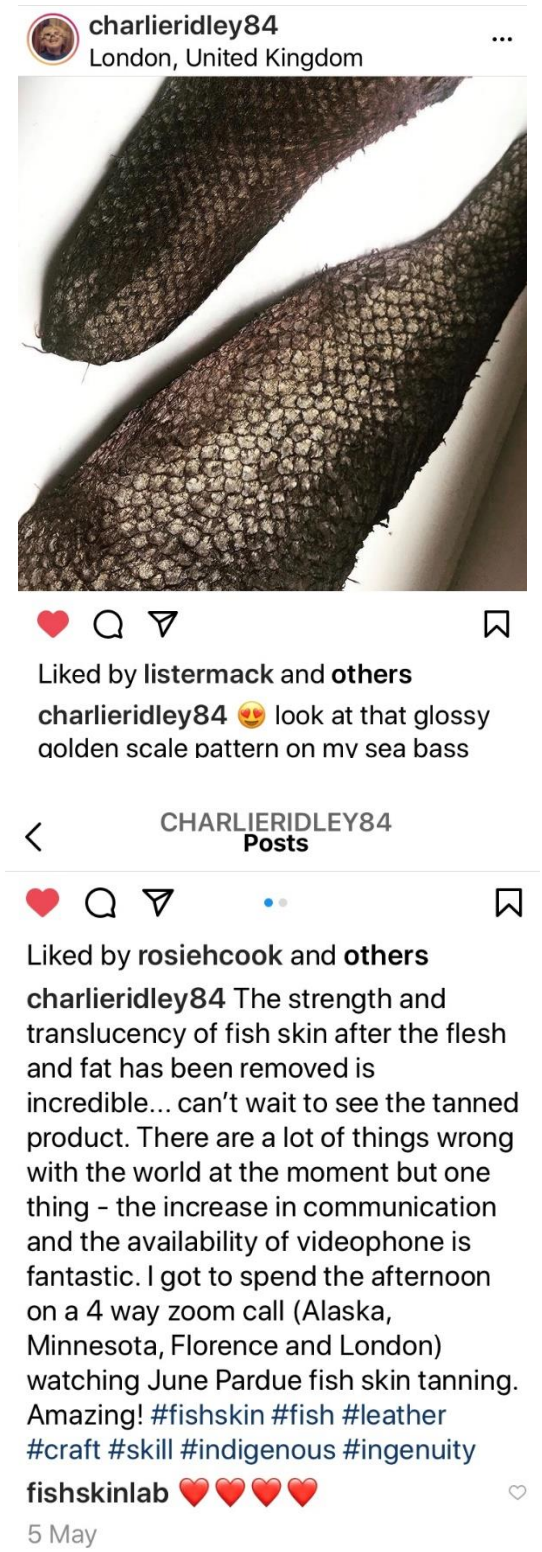


**Figure 9.** Two sea bass fillets from Waitrose tanned by Charlotte Ridley, a conservator from the Horniman museum in London.

We cut off the skins from the fish as close to the skin as possible without cutting through it. We scraped the flesh off the skin with a metal spoon or butter knife (Figure 10). June used the traditional Ulu (Figure 7), a knife with a semi-circular blade used by Native

women across the Arctic for over three thousand years. After rinsing the fish skins in cold water, we soaked them in soapy water, leaving them to sit for a whole day.

**Figure 10.** From left: Seth Hobson, Sea Hobson and Renae Zackar scraping fish skins. Photo by Ida Nelson.

### *4.2. Tanning Solution*

During the initial workshop, June instructed the participants in using a bark solution to tan the skins. We peeled the outer part of the tree branches with a potato peeler (Figure 11). As June noted, the middle part is not used since it is full of sugar and it will ferment the tanning solution. Peeling four organic beets, we added them to the tanning solution to soften the fish skin. This provided a beautiful red tone (Figure 8). We placed the bark and beet peels into a pot and poured water to fill the pot, bringing the tanning solution to a boil. After adding a spoonful of non-iodine salt to the tanning solution, the mixture of bark and beets was simmered for 5 h and then left to cool overnight.

**Figure 11.** Linda Hobson (left) and Seth Hobson preparing willow bark. Photo by Renae Zackar.

The tanning solution was generously applied to the skins in the evening, and they were left to soak overnight, stirring them to make sure they were completely immersed. Skins were removed from the bark solution in the morning, then we rubbed coconut butter on the skins and pulled them with our hands in all directions. Fish skins were stretched as they dried and we rubbed them again to soften them. Afterwards, they were set aside to dry for an hour, making sure that they will not harden. Skins were then rubbed and pulled until dry and soft.

## 5. Fish Skin Indigenous Practices Aligned with the United Nations Sustainable Development Goals

The 2030 Agenda for Sustainable Development released by the United Nations consists of 17 goals and 169 targets, of which 73 have significant links to the UN Declaration on Rights of Indigenous Peoples [16]. In this section of the paper, we explore how traditional knowledge-based practices related to Indigenous fish skin production and use are interconnected with the Sustainable Development Goals (SDGs).

Indigenous communities throughout the world have developed valuable traditional knowledge about nature and sustainable practices, which can contribute to achieving the SDGs related to environmental sustainability. The goals on climate change adaption, sustainable management of oceans and use of water resources reflect priorities that Indigenous Peoples have always embraced to protect the ecosystems and biodiversity of their mountains, rivers and forests. Indigenous Peoples have constantly contributed towards the SDG targets on increasing awareness on lifestyles in harmony with nature [16].

### *5.1. SDG 1: No Poverty*

SDG 1 is linked to end poverty everywhere, in all its forms. Alaska Native Heritage educational programming aims to connect Indigenous artisans with marginalised communities. Thanks to their funding, artist June Pardue was able to teach several fish skin workshops across Alaska during the COVID-19 pandemic. By learning from Alaska Native Elders, younger artisans are able to improve their lives through work that values their craft and heritage, becoming agents of change in their respective communities.

### *5.2. SDG 3: Good Health and Well-Being*

The health impacts of industrial chemicals used in the leather production process has detrimental effects on the health of workers, as well as communities affected by environmental pollution, is explicitly linked to SDG 3. Contemporary industrial methods used to process fish leather employ mineral tanning agents, chrome being the most popular (a solution of chemicals, acids and salts including chromium sulphate). If not properly managed, these can impact workers' and consumers' health and will have a negative environmental impact. The traditional methods used in tanning fish skin provide an environmentally friendly process without relying on harmful industrial chemicals. This is an opportunity to revive old technologies for processing non-conventional raw materials such as fish skin.

### *5.3. SDG 4: Quality Education*

SDG4 aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable lifestyles and cultural contributions to sustainable development. The SDG target makes specific reference to ensuring equal access to education for Indigenous children. Through Alaska Native Heritage programmes, June supports the development of young Native talents, integrating Indigenous knowledge into formal education. By educating future generations of young Native Alaskans in sustainable traditional practices, Native communities are able to grow and develop, building on this ancient knowledge.

### *5.4. SDG5: Gender Equality*

The contribution of Indigenous female artists across the Arctic testifies to the vital role Indigenous women have held, and continue to hold, in Northern communities. Women's labour, often unseen and underpaid, is a vital means of support for families, communities and economies throughout Alaska [17].

### *5.5. SDG 6: Clean Water and Sanitation*

SDG6 relates to water pollution, the release of hazardous chemicals and materials, treatment of wastewater and water-use efficiency. There is a potential pollution during the dyeing and finishing process of materials such as fish leather. Sustainable innovations such

as vegetable tanned fish leather developed by June Pardue are reducing this, and these sustainable alternatives should be favoured [18].

### *5.6. SDG 8: Decent Work and Economic Growth*

SDG 8 seeks to promote sustained, inclusive and sustainable economic growth. Through the fish skin workshops, June has been increasing and disseminating traditional knowledge. Thanks to this training, micro-entrepreneurs are encouraged to grow small enterprises such as local fish leather tanneries, creating new jobs and, ultimately, building social capital. Through the Alaska Native Heritage programmes, June mentors the development of Native artisans, thereby supporting and developing their business capacities.

### *5.7. SDG 10: Reduced Inequalities*

A key entry point for Indigenous Peoples in the 2030 Agenda is the strong commitment to "leave no one behind" and "reach the furthest behind first". The fish skin workshops have promoted an inclusive philosophy sharing traditional knowledge and expanding international and professional contacts in a manner that has the potential to contribute in a significant way to reducing social and economic inequalities.

### *5.8. SDG 12: Responsible Consumption and Production*

SDG 12 commits to ensuring sustainable consumption and production patterns addressing the use of natural resources, chemical waste, fossil fuels and the integration of sustainable practices into the production cycles. The use of alternative materials such as fish leather has the potential not only to serve our material needs but also to reduce the over-consumption of certain materials threatening biodiversity. The use of alternative materials could lead to more regional sourcing of materials and more local jobs in coastal areas [19]. The key to social innovation is collaborative networks based on a new relationship with local resources and local communities [20].

### *5.9. SDG 13: Climate Action*

SDG 13 commits member nations to combat and curb human-induced climate change, with modern industrialised societies recognised as the greatest source of climate instability. Living sustainably with the environment for millennia, Arctic Indigenous Peoples are now experiencing the most dramatic impacts of global climate change caused by unsustainable practices elsewhere in the world [21]. Ignoring sustainable practices in salmon fishing used by Arctic Indigenous Peoples for thousands of years has led to the excessive depletion and near extinction of this species. Indigenous traditional knowledge about nature and sustainable practices can make a significant contribution to achieving the SDG 13 related to environmental sustainability.

### *5.10. SDG 14: Life Below Water*

This fish skin traditional workshop has shared new ocean-based value chains by raising awareness and partnering with Native locals to share material innovation. The capture fisheries and fish farming sectors generate enormous amounts of fish skin, typically discarded as waste. Turning fish skins into fish leather adds value to locally caught or farmed fish, creating additional employment opportunities for local coastal communities [22]. The innovative use of aquatic resources serves as a critical means of increasing sustainability in both the fashion and fisheries sectors.

## 6. Conclusions

Ancient shamans drew inspiration from nature, harmonising the fire, water, earth and air elements to navigate perilous times. In times of disorientation, distress and challenge, such as the COVID-19 pandemic, it is crucial to reinstitute balance by reconnecting with nature. The fish skin tanning workshops provided a creative practice to help participants through these challenging times, strengthening their intimate connection with nature while

also benefiting the greater community. The increase in communication and involvement of individuals from different backgrounds and areas of expertise across the planet during the COVID-19 lockdown enabled a closer connection with each other and with nature. Along with climate change, the pandemic crisis has brought a shift in perception of nature and the role of humanity as a responsible keeper. Arctic Indigenous Peoples have a lot to teach in this respect. In recent years, governments have tapped into traditional Indigenous knowledge preparing for and responding to nature disasters and health crises. As Clement [23] points out, the idea of traditional Indigenous knowledge and resilience comes from paying attention and being a part of one's environment, thereby gaining experience and learning from it collectively.

The Alutiiq Indigenous fish skin tanning workshops provided a platform for novel interventions across the disciplines of fashion, craft production and museum curation, challenging and merging the digital environment with that of crafts in this period of the pandemic. Reintroducing the knowledge of ancestral tanning practices has involved the participation of multigenerational community members. Activities around the tanning workshop, including storytelling and people gathering together, have created opportunities for young people to learn from elders, who are considered to be the backbone of Native communities. The engagement with fish skin material and objects connects the object to the place where the materials were collected and the people who inhabit that region, strengthening a distinct cultural identity [9].

Throughout centuries of colonization, Alaska Native people experienced profound sense cultural loss. Denied opportunities to learn about their cultural practices, many were made to feel ashamed of their Native heritage. Today, the resurgence in cultural pride, ethnic identity and control of resources is reshaping the future for Alaska Native people and their communities [5]. The Native-led fish skin workshop contributes to this effort, increasing access to skill development opportunities for Native youth and supporting cultural revitalization in Native education.

**Author Contributions:** Conceptualization, E.P. and J.P.; methodology, E.P. and J.P.; validation, E.P. and J.P.; investigation, E.P.; resources, E.P. and J.P.; data curation, E.P.; writing—original draft preparation E.P. and J.P.; writing—review and editing, E.P. and J.P.; visualization, E.P. and J.P.; supervision, E.P. and J.P.; funding acquisition, E.P. and J.P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research for this project has been partially funded by the AHRC LDoc London Doctoral Design Centre Award and the Fulbright UK–US scholar award.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Acknowledgments:** We are deeply indebted to the Alaska Native Heritage Programs and all the student participants in the workshops, the museum curators, fish skin tanners and elder and youth members of Alaska Native communities. We are especially grateful to Aron Crowell and Dawn Biddison at the Smithsonian Arctic Studies Center, Anchorage Museum, as well as William Fitzhugh, Director, Igor Krupnik, Stephen Loring, John Cloud, Bernadette Driscoll Engelstad and Nancy Shorey of the Arctic Studies Center at the National Museum of Natural History, Smithsonian Institution.

**Conflicts of Interest:** The authors declare no conflict of interest.

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