Into the Rainforest

Explore the Mesolithic in Scotland's native woodlands

"Mesolithic identity was forged in woods that were both practical and symbolic resources and one of the ever-presents of life."

Graeme Warren, *Mesolithic Lives in Scotland*, 2005, 75.

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Liz Jones and Matt Ritchie

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Introduction

Imagine the world of the wild harvesters, living within the wildwoods of Scotland over six thousand years ago. Our Mesolithic ancestors were at home in their environment, hunting, fishing and gathering enough to survive and prosper. Today, Scotland's landscapes provide the best setting possible for imagining and connecting with the Mesolithic experience. Whether walking through the pinewoods of Upper Speyside, or delving deep into the rainforest of Argyll, the sights and sounds of our natural world inspire observation and reflection.

In this short archeological learning resource we focus on biodiversity and bushcraft in Scotland's rainforest. It should be used alongside Into the Wildwoods (2020). We explore the rainforest habitat and introduce the Atlantic Rainforest clan. In our creative archaeological narrative, the Atlantic Rainforest clan lives close to other coastal resources and shares their landscape with other clans. By focusing on individual characters and their activities – from hunting and trapping through gathering the wild harvest to cooking and preserving all that the forest provided – we hope to describe an 'archaeoecological' approach to learning that can be set within native woodlands local to the reader.

Place-responsive learning can form the foundation for the exploration of wider issues within **Learning for Sustainability**. 'Places' are described by leading pedagogists in *Outdoor Learning Across the Curriculum* as "locations that have been given meaning through human experience and to which people feel particular biological and social attachments. Spaces, on the other hand, have not been ascribed the same sorts of value or meaning by humans" (2024, 61).

We almost always feel connected to native woodland as places, and the roots of this connection to nature surely lie within our earliest experiences, as both a human collective thousands of years ago and as individuals in our early years. By emphasizing the opportunity for archaeological learning in the outdoors, within the rainforest, we hope to enable imaginative and experiential learning that actively responds to time, place and season.

Into the Wildwoods and its supporting resources explore the interconnected ideas of habitat networks, natural resources and seasonal change in the Mesolithic. Thinking about how our Mesolithic ancestors understood the complex habitats and ecosystems within which they hunted and gathered – adapting to and sustaining life within very human habitats – can help us understand our own place within the natural world.

Rainforest habitats

"In 1796, when Captain Cook anchored his ship, HMS Endeavour, off the coast of New Zealand, the botanist onboard, Joseph Banks, recorded in his journal that although they lay a quarter of a mile off the shore, the clamour of birdsong during the dawn chorus was 'deafening'. For the explorers following the Atlantic coastline of Mesolithic Scotland thousands of years ago, the rainforest that crowded its shores would have been just as loud with life."

Dougie Strang, *The Bone Cave*, 2023, 31.

Along the west coast of Scotland, mixed forests of oak, hazel, birch and ash – and many more species besides – can be found in the mild and wet conditions that blow in from the Atlantic. These woodlands can quite correctly be described as 'rainforests', and are home to a wide variety of birds, animals, plants, lichens and fungi. Scotland's temperate rainforest is one of our most precious habitats. Temperate rainforest is as important as tropical rainforest, but even rarer. They are mainly coastal forests with a special oceanic climate which is wet and mild due to the coastal landscape and warm ocean currents. High levels of rainfall and relatively mild, year-round temperatures provide just the right conditions for some of the world's rarest lichens, mosses and liverworts, and ferns. These plants seem to cloak every tree and boulder, every nook and cranny, and are a key element of the rainforest's timeless beauty.

The rainforest was at its peak around 6000 years ago. "Veteran oak trees, some contorted into amazing shapes by the elements, dominate the landscape," writes the ecologist Clifton Bain in *The Rainforests of Britain and Ireland*, "with their dense canopy allowing only shafts of light to reach the green and yellow hues of the mossy woodland floor" (2015, 11). But these oak trees were amongst the last of the rainforest tree species to reach our shores. In fact, the amount of oak we see in Scotland's rainforests today is probably artificially high as it was favoured and planted in the 18th and 19th centuries to produce tanbark for leather curing and charcoal for iron smelting.

The rainforest was just one element of the wildwood that gradually developed across Scotland over many thousands of years, following nature's recolonisation of the tundra left by the retreat of the last ice cap around 15,000 years ago. The wildwood spread and expanded its range in stops and starts. Along the Atlantic coast, first came birch, soon followed by hazel and pine. Oak arrived much later, reaching the south-west coasts of England and Ireland around 9000 years ago. Pollen analysis has confirmed that it reached the north-west coast of Scotland three thousand years later, aided in its spread by natural process such as that of the jay, with its tendency to collect and bury acorns much further from the tree than which they would naturally fall.

Woodland and forest gradually grew to cover most of northern Europe. New coastlines emerged as the ice caps melted and the sea level rose. As the glaciers retreated, our ancient ancestors expanded their range by following the migrating herds of reindeer further afield and exploring the emerging coastlines. They adapted to a new world, shifting from a diet focussed on reindeer meat and wild horse to one as diverse as the habitats they occupied, each ecological zone rich in varied seasonal resources.

Pollen sequences and ice core data have allowed climate scientists to model three distinct phases within this post-glacial Holocene period in Scotland:

- *Preboreal* (c. 11,600 – 10,800 years ago), a cold, dry period;
- *Boreal* (c. 10,800 – 7800 years ago), a warm, dry period; and
- *Atlantic* (c. 7800 – 6000 years ago), a warm, wet period.

The gradually improving climate over the long term brought changes in vegetation – from open scrubby tundra in the Late Upper Palaeolithic to extensive woodland in the late Mesolithic, a huge expanse of wildwood containing and neighbouring an extraordinarily diverse mosaic of different habitats. The wildwood contained numerous open glades created by grazing animals, and joined open uplands, wide, meandering river valleys, broad estuaries and intertidal coastlines. This learning resource is set within the later *Atlantic* period, at a time of a warm, wet climate and at the peak of the rainforest habitat.

However, it may be easier to consider the timeline in human terms. During the Late Upper Palaeolithic period (c. 15,000 – 11,500 years ago), small groups of hunters could be found on the fringe of the mountainous ice cap, following the migrating reindeer to the summer calving grounds in the tundra. During the Early Mesolithic (c. 11,500 – 10,200 years ago), groups of pioneers began to explore the coasts and river valleys of the lowlands; and by the Middle Mesolithic (c. 10,200 – 9000 years ago) they had begun to spread further across the landscape. By the late Mesolithic period (c. 9000 – 6000 years ago), the diverse hunter-gatherer-fisher lifestyles described in *Into the Wildwoods* had truly taken hold, with almost every habitat niche being exploited.

The people who lived within the late Mesolithic rainforest habitat were skilled at hunting, fishing and gathering plants, nuts and berries. They were always on the move, making use of seasonal resources, sometimes coming together in large groups or communities and sometimes staying in smaller family groups. They made use of nature to make their tools and clothes and camped each night in temporary shelters.

Today, the Alliance for Scotland's Rainforest is working to restore and expand the the remnants of Scotland's rainforest, to allow it to thrive for future generations. "One of the most appealing aspects of the Atlantic rainforest is the natural diversity in structure and species composition" notes ecologist Clifton Bain. "Continuous woodland cover persisting over thousands of years has maintained a wildlife array that has been lost elsewhere. On the ground, our recent glacial past has left a wide range of soil conditions, rock textures and dramatic water features, resulting in a rich and varied woodland habitat" (2015, 16).

An amazing array of mosses and liverworts (collectively known as bryophytes) and lichens inhabit the rainforest: over 300 lichens and 70 bryophytes species grow on oak trees alone. Add to this incredible diversity a great variety of fungi, ferns and flowering plants, and a huge number of insect species, songbirds, bats and other mammals. "These are places not just for the dedicated naturalist," writes Clifton Bain, "but for anyone who needs recharging in this hectic modern world" (2015, 60) – and for anyone seeking to connect with the Mesolithic wildwoods of our ancient past.

Archaeological narratives

"The connection between twenty-first century narrative and the communities that lived in Scotland eight thousand years ago is grounded in shared place and shared materials. The hard evidence of the past is in the earth itself, in the landscape and the archaeology."

Margaret Elphinstone, *Voices from the Silence*, 2020, 63.

An archaeological narrative includes creative interpretation and accessible artwork, and emphasises the importance of imagining key moments or past experience. Books such as Michelle Paver's *Wolf Brother* (for younger readers) or Margaret Elphinstone's *The Gathering Storm* (for older readers) are really useful in setting the scene and imagining the Mesolithic experience. Visiting archaeological museum collections and viewing Mesolithic artefacts can also help, and can be included within creative interpretation and artwork.

The archaeologist Donald Henson noted that "the Mesolithic can be the source for potent stories of human life, if only we can learn how to craft better narratives" (2020, 103). It can feel relatively easy to imagine the life of the Mesolithic wild harvester, living within the wildwood; but it is just as easy to lose focus and accidentally introduce aspects of the modern world.

Creative archaeological narratives are rooted in an understanding and interpretation of the evidence. For example, although evidence of clothing from this period is very rare, there is every reason to believe that our ancestors were able to fashion clothing that was well made, comfortable and fit for purpose, out of a wide range of natural materials. So our Mesolithic characters are clearly well-equipped and are very well-dressed. Similarly, our ancestors may not have had maps in the modern sense, but they did think spatially, carefully planning their activities in order to best move through their landscape, gathering and exploiting seasonal resources.

As archaeologist Caroline Wickham-Jones wisely reminds us "whether the construction of narrative involves imagination or invention, the parameters of the context need to be accurate" (2020, 49). By all means use modern maps, matches and pocket-knives during bush craft activities – just remember to describe the journey through Mesolithic eyes, the heat of the embers in a Mesolithic fire pouch, or the sharp cutting edge of a Mesolithic flint blade.

Ola is one of the characters used to illustrate the Coastal Estuaries clan, one of five habitats described in *Into the Wildwoods*. Ola's outfit is a bird-skin parka based on an Aleut item from the Smithsonian Museum. It is likely that bird skin was also preserved and worn in Mesolithic Scotland, as well as mammal and fish skin. Her blunt arrows have been found in waterlogged Mesolithic sites from Denmark, and are thought to have been especially good for killing birds. The blunt wooden tip did not damage the plumage which was then particularly valuable for fletching arrows and for turning into decorations for clothing and other objects. Other artefacts have been woven into the narrative, such as the Clowanstown wicker fish trap and the amazing Tarradale harpoon. Characters like Ola and her cousin Niko are accessible and authentic. They help to underpin archaeological learning and understanding and inspire a human connection, and their imagined clothing is a key element of this process.

This replica wicker fish trap was made by master basket maker Joe Hogan. It was based on the careful excavation and conservation of an amazingly well-preserved example that was discovered at Clowanstown in County Meath, Ireland. The original is now on display in the National Museum of Ireland. "Many different skills and knowledge, both ancient and modern" notes the exhibition caption, "of the basket makers, archaeologist and conservator are represented by these traps, and patience is the common thread."

"Over my tunic and leggings I had this cloak – the very one I'm wearing now. See how it's plaited from all kinds of reeds, rushes, grasses, bark-twines? See how they make patterns with their different colours? Yes, you can look – you little ones can touch if you like. I dreamed this cloak in Salmon Moon when I first went Go-Between. It took me until the end of that winter to make it. In my dream I saw how the colours of the different twines changed as I moved. Like this! I wanted my cloak rough and smooth, soft and shiny, dark and bright, thick and delicate – all these things at once. And so it is – no, don't stop her – let her feel it! That way she'll remember even though she's so small – the children and I don't have much longer together – I want her to remember. When I dreamed my cloak I saw how the little bright spirit-catchers of shell and bone and stone glinted between the threads. Look, you can see them in the firelight now! I saw the snakeskin with the spearhead mark between its eyes woven into the plaited rushes down my back. No you can't see that. I'm not going to stand up and turn my back on this warm fire! Remember I'm just a poor old woman. You'll have to wait until tomorrow. Anyway, I gathered everything I needed, and slowly I made my cloak until it was exactly how I had seen it in my dream. After four years it was already much mended, but no one knew that, because as the moons passed I gathered as many spirit-homes – claws and bones and teeth, polished speaking-stones, memory shells, dream webs, shining-light-stones, all with animal souls sleeping inside – as any other Go-Between. Whenever I moved, the spirit-homes glinted and rippled in the light to show they were alive."

Margaret Elphinstone, *The Gathering Storm*, 2009, 206.

Roe deer antler, perforated teeth, and tusks from the shaman's regalia, Bad Dürrenberg, Saxony-Anhalt

Sometimes their clothing allows an even deeper insight into the Mesolithic experience. “When Mesolithic people wore animal clothing, they attempted to see the world from the point of view of animals or spirits” explains archaeologist Chantal Conneller. “When we practice archaeology, we attempt a similar exercise, to see the world from a Mesolithic point of view. This may have been a very different world, a world of spirits and animals that could act like people, a world where places and things had intentionality [i.e. were believed to have mind and agency], and where the flow of life-force between people and things was carefully balanced [i.e. such as a reciprocal relationship or predatory behaviour]” (2022, 65).

So when we try to interpret the archaeological evidence we must try to ‘think Mesolithic’. For example, the unusual grave of a thirty-five year old woman was excavated in 1934 at Bad Dürrenberg in Saxony-Anhalt, Germany. The grave dates from around 8500 years ago. The grave goods included a regalia of roe deer antlers and the perforated teeth, tusks and bones of bison, wild boar and deer. A polished piece of bone, probably worn around the neck, is made from the throat bone of a wild boar. Other items (not shown here) include the shells of tortoises and freshwater mussels, and a unique container made from the leg bone of a crane, which held high-quality flint microliths ready for use as arrow tips and knife edges. Osteoarchaeological analysis of her skeleton has revealed pathological anomalies in the formation of the bones at the base of her skull and the top of her spine – anomalies that can cause pain, involuntary movement of the limbs and eyes, double vision, abnormal physical sensations and a tendency to faint. Could such ‘gifts’ have made her an important person in her community? Archaeologists Duncan Garrow and Neil Wilkin argue that “these unusual attributes and her exceptional burial in an isolated grave packed with possessions or offerings suggest that she was a powerful, revered individual, and plausibly a shaman.” Could the polished throat bone of a wild boar have been “a symbol of this extraordinary woman’s ability to communicate with spirits?” (2022, 35).

◄ **The Shaman of Bad Dürrenberg**

Seasonal rhythms

The seasons affect the lifecycle of the trees and animals in the rainforest – and therefore also the people that relied on them for survival. Each part of the forest offers something different throughout the year: the rivers that teem with salmon in springtime, the trees and bushes that bear fruits and nuts in late summer, the animals in the woods that grow fat in autumn, and the mountainsides and moors where the reindeer eat moss in winter. There is a yearly cycle of activity related to the changing seasons, with different places to camp at different times of year, with the clans returning to the same places year on year.

Mesolithic people lived much more closely with the seasons and had far greater knowledge of their natural resources than we do today. While we rely on tinned or frozen food or food brought from overseas to provide us food all year round, they were reliant on what they could gather, hunt and store from the forests, rivers and coastlines where they lived. What do we gather from the hedgerows today? What can we make from it? Who grows their own food or gathers their own firewood?

Although we can get what we want all year round, only a few generations ago bananas were a novelty and strawberries were not available unless it was summer. Try and look at what is in season next time you go to the supermarket or try growing your own vegetables. Eating locally and seasonally reduces carbon emissions as produce is not flown in from other countries. Visiting the same woodland over the course of the year, in different seasons or even over six weeks, you will notice changes in the vegetation, light and bird activity, and can help you tune into natural changes. Taking a photo or recording sounds each time you visit can be a good way to capture this and help recall back in the classroom. Take a picture of a different flower every time you visit in the spring and summer. Remember, different species flower at different times of year. Watch flowers turn into fruits and observe how different species are ripe at different times – the raspberry in August, the blackberry in September and the hazelnut in October.

Foraging for wild food can be fun and delicious but make sure that you forage sustainably and responsibly. Take a guidebook and only pick what you are sure of – don't pick rare plants and be aware of poisonous lookalikes! *The Forager's Calendar* by John Wright (2020) is a brilliant seasonal guide to nature's wild harvest. Remember, only take what you need and always leave some for others and nature.

The Atlantic Rainforest clan lives close to other coastal resources and shares their landscape with other clans. By focusing on individual characters and their activities – from hunting and trapping through gathering the wild harvest to cooking and preserving all that the forest provided – we hope to describe an 'archaeoecological' approach to learning. By imagining Mesolithic life in the rainforest habitat through our shared experience of seasonal flora and fauna we may better understand and appreciate life in the wildwoods all those thousands of years ago.

	Siimo
What are they doing?	Fixing small triangular flints to thin hazel rods to make arrows with the pine resin that Pihla has brought from the pinewoods. He uses sparrowhawk feathers to fletch them. To make bird arrows he strips the bark from pine branches and makes supple wands with rounded heads fletched with crow feathers.
What do they think of their home?	Siimo enjoys the challenge of tracking prey through the forest, following the signs and staying quiet. He is good at hunting wild boar and birds. He can recognise the birds from the woodland and the coast from their calls.
How old are they?	Siimo has strong enough hands to knap flint for making arrows but is still learning.
What do others think of him/her?	Pihla is impressed by Siimo's knowledge of different bird songs and calls.

"The careful forager behaves with good manners, taking only what he or she needs, leaving some for others and more than enough for the continuation of the species."

John Wright, *The Forager's Calendar*, 2020, 14.

	Pihla
What are they doing?	Setting traps for smaller animals, like squirrels and pine martens, whose fur is useful to line winter clothes. They are more easily spotted when the leaves are off the trees. She takes the skins to Oihana and the meat to Plamen to dry or to cook on the fire.
What do they think of their home?	Pihla watches the animals she traps, to know which part of the forest they move through. Her clan has a camp in the pinewoods but camps near the coast with the Rainforest clan in the colder months.
How old are they?	Pihla is a young adult. She is teaching Siimo ways to track and trap smaller prey.
What do others think of him/her?	Siimo thinks Pihla would be good to hunt with as she is careful and quiet as she stalks in the woods.

Hunters and trappers had to be good at tracking prey. They would watch out for animal prints, broken branches, or glimpses through the trees. Smaller animals like pine martins and squirrels could be caught in traps and blunt arrows would kill small birds while protecting their feathers.

- Cup your hands behind your ears to practice listening like a deer. Can you hear better? What sounds can you hear? Maybe you can recognise bird calls like Siimo? Many of the most characteristic birds in the rainforest are summer visitors and the time of their return can be fairly accurately estimated. The arrival of the wood warbler was probably used as a point on the calendar! Can you build your own songbird calendar?
- Try being careful and quiet like Pihla by making a single step very slowly and then putting your foot down stealthily, heel first. How slow can you go? Practice using your peripheral vision by moving your arms out to the sides and moving them up and down while looking straight ahead. You'll get better at spotting the smallest movements – just like a Mesolithic hunter!
- Practice creeping silently with games like **Granny's Footsteps**.
- **Track and trail**. In two groups take turns to leave a trail. This could be pine cones and stick arrows. Give the trail setters a 10-minute head start then the trackers follow the trail to find them. You can make it harder by setting blind trails along the way but don't forget to leave your trail setters enough time! Make it more interesting by having the hunters follow the deer that they have shot with an arrow but is still alive – can they follow the trail of blood (flour) before the deer gets away!
- Try camouflaging some or all your body. How easy is it? Does it depend on the time of year? How would you use camouflage to set up a trap? A red squirrel is perfectly camouflaged in the colourful Autumn leaf litter.
- **Animal detective.** See if you can identify animals in the woods by their prints and tracks. You can also try making your own. The Field Studies Council have a great set of laminated guides to help you identify animal tracks (among other things). In groups decide which animal you'll be and make a trail for other groups to follow and work out the animal and what it has been up to! You can add in other clues (feathers, nibbled pinecones, fallen nest) to help and it's a good idea to practice making the tracks in clay or sand first so that they are easy to read.

Spring’s fisherfolk

The return of longer days would have been welcome to the clans, as they waited for the first plants to emerge, and the leaves start to emerge from the buds on the trees. Blackthorn is one of the first to blossom (before the leaves form) in April, with Hawthorn following (after the leaves) in May or June. Hawthorn leaves can be eaten and the berries made into syrup in the autumn, when you can also make a syrup from the sloe from Blackthorn. These syrups could be sweetened with honey, although the Mesolithic palate may have been used to more sour tastes. There are lots of hedgerow plants that can be eaten in spring, like wild garlic, nettles, dandelion, wood sorrel, and lesser celandine. Elderflower heads can be used to make cordial or a naturally fermented non-alcoholic ‘champagne’ (be careful to seal the bottles properly so that they don’t explode!). Pollen from all these plants has been found in peat deposits dating from the Mesolithic.

Birch bark may also have been collected as this was useful for making containers. Pine and birch sap tapped from spring trees was mixed with ground charcoal and beeswax to make glue for fixing flint blades.

Nesting birds would have provided eggs, with younger people climbing trees to take these. Egg collecting used to be popular, but we now know that it is important to leave nests undisturbed. Collecting eggs from wild birds is now illegal.

By sea or river the clan would gather seaweed, crabs, lobsters, mussels, eel, trout and shellfish such as cockles, limpets and periwinkles. All these shells have been found in Mesolithic shell middens (rubbish heaps). Other plants that are found at the loch shore include wild carrots and silverweed, which can be dug up and the roots eaten.

- Celebrate the return to spring camp and fishing by making a **model raft**. You can use reeds if you have them or sticks. Spend some time learning the knots you’ll need first. Try a clove hitch to attach the cord to the vertical sticks. Then use a simple single lash to attach each of the horizontal sticks (although you could also use square lashing). For a reed raft, try weaving. Tie a long piece of string to the end of the raft so you can launch it on a pond or river and bring it back. Perhaps you can see what cargo you can carry.

- For a bigger project you could try **coracle building**, or a basket-sized model coracle. You'll need some willow withies cut in late autumn. You might be able to cut some from municipal bushes and dogwood is also good for this. Make a circle to form the top of the boat, then attach the frame using square lashing and curve it around to the other side. Repeat to form an open frame or lattice pattern. Depending on what you have available and the size of the coracle you could use leather, tracing paper or tarpaulin to stretch over the frame for the hide. See how it floats and what it can carry. Does it work better than the raft? Why?

Food from the seas, lochs and rivers would have been important to people in the Mesolithic, who lived mostly near to the coast. Older folk and those unable to hunt such as Plamen and Eduk would have taken the children to the shore to collect shellfish and seaweed from the rocks as the tide withdrew. Older children and younger adults such as Gabi and Siimo would have fished the river. Eduk could have used a coracle or raft to transport wood and skins when moving camp for the summer.

	Gabi
What are they doing?	Fishing for trout in the river. She has a harpoon made of bone and checks the fish traps. In the winter she'll help cut hazel poles to make a new fish weir.
What do they think of their home?	Gabi loves being on the river and especially following it to the sacred waterfall during the long days of sunshine. She is looking forward to the clan gathering and rebuilding the fish weir in the spring.
How old are they?	Gabi is an older child who doesn't need much looking after anymore. She works alongside Siimo on the river but is not yet old enough to paddle the coracle alone.
What do others think of him/her?	Siimo is always impressed by Gabi's cheerful spirit – and by her fishing skills.

Trout are found in the cooler water and pools below overhanging trees. Trees growing next to a river are called riparian woodland. Projects by Forestry Land Scotland and others are restoring this river ecology by planting trees alongside rivers and burns to provide shade for fish and increase biodiversity – and beavers were initially reintroduced to Knapdale in Argyll but are now found in several river catchments around Scotland. Beavers are natural engineers, and by building dams and their lodge homes they can create new wetlands, restore native woodland and improve conditions for a wide range of species including dragonflies, otters and fish.

The fishers also used a digging stick to collect wild carrot and silverweed roots from the loch shore. They would also have collected eggs from sea birds. Simple fish traps could be made with a bramble branch with grubs or water snails on the thorns placed across a narrow stretch of water. They would have used the woodland for making digging sticks, harpoons and fish traps.

- You may not have a loch or the sea near your woodland but you may have a pond or a small burn. You could try pond dipping to see how many species you can find and see how healthy your water is – don't forget to include the birds *on* the water. The Field Studies Council produce excellent waterproof guides on recognising freshwater species. You'll just need some fishing nets (or plastic sieves), plant trays, magnifiers and your wellies!
- If there is a burn or river in your woodland you could help to clear up any rubbish but get in touch with the owner first and make sure you can do it safely. There may be signs that the river course has been altered in the past to catch fish – things like fish weirs and salmon ladders – these are similar to the fish weirs and traps built by Mesolithic people.
- You can make a simple fishing rod using a stick, some twine and a small pinecone. Ask what Mesolithic people would have used as fishing line and bait? What other ways can you catch fish? What else can you eat from the loch, river or sea?

Gabi fishes by the coast and along the rivers and streams but she couldn't do it without the trees! In winter the hazel is cut down to make poles and to weave fish traps that they can put into the river in the spring. Willow and alder grow by the water providing shade. Dugout canoes of pine and oak have been found in Scotland and coracles would have used flexible willow or hazel to make a frame that was then covered in skins.

- **Stick game**. Everyone finds a stick, probably about arm's length. But some will have smaller and bigger ones. Take turns to think of new uses for your stick – once the obvious ones have been said, be imaginative – you might come up with something useful! It's a good ice breaker and the idea is to see how things can have many uses and leads into the following activity.
- **Tree safari**. In spring see how many trees you can recognise from their leaves. Explore as you go or set off in pairs for 10 minutes and see how many different leaves you can find. Then find out how many things the trees were used for! The leaf could represent all the uses of the tree – birch could be young leaves to eat for spring, wood for smoking meat or fish, bark for making ties or cups, inner bark can be used ground to make flour, sap. Birch bark is strong and water resistant, almost like cardboard in its pliability, and can therefore be bent, cut, and even sewn. Native Americans used birch bark as a material for canoes, wigwams, scrolls, ritual art, musical instruments, containers for food, and even clothing. Look out for hazel stands or the black buds of ash in winter.
- **Meet a tree in winter**. You'll need blindfolds (buffs work well or putting hoodies on backwards!). In pairs take turns to spin your partner round a couple of times and then lead them to a tree. Feel round the bark, its girth, the moss on the roots, if you can feel any branches – could you climb it? The idea is to become familiar with it so you can find it again when your blindfold comes off. Once you have done that, try and identify it (with a book) using the bark and the shape, the buds, or the fallen leaves / nuts around the base. You can also do it when the leaves are on the tree when recognition is easier.
- **Tree spirits**. In summer use natural clay or mud on the trunk of a tree and stick leaves, feathers, flowers in to make faces for tree spirits. In Wolf Brother the people thank the forest for giving them what they need to live and so this is a way of celebrating the time you have spent in your woodland.
- **Leaf art**. In autumn get creative with rainbows, spirals, mandalas, using the autumn colours to create amazing and intricate temporary decorations on the forest floor. Remember to take a photograph!

Summer’s wild harvesters

Mesolithic people would have taken advantage of the longer, warmer days for fishing or hunting trips, moving camp in summer to be closer to the loch shore, river or more open countryside. Summer was abundant for berries – wild raspberries, wild strawberries as well as plants and herbs such as mint and sorrel.

Fat hen, plantain and good king henry are all frequent finds in environmental archaeological deposits. The leaves from fat hen and good king henry would have been eaten raw, perhaps while out walking, hunting or gathering.

Honey would have been gathered in late summer from nests in trees. Late summer also brought blaeberries among the heather and yarrow, whose leaves were gathered for medicinal qualities.

- Make your own **nettle cord**. Mesolithic people could have used different materials instead of the cotton, twine or plastic ropes we use today. Make sure you use gloves to collect the nettles, picking them as far down the stem as possible. Pull off all the leaves and the hairs on the stem. You will need to experiment with different nettles, because some are too soft at the top and break easily, while others are too tough at the bottom, making them difficult to work with. Take care not to tear the outer layer of the stalk as you remove the leaves. This is the part of the nettle that will be used for the cord. Use a rag to gently rub up and down the length of the stalk to remove the fine hairs. You only need the outer fibres of the nettle, so you need to remove the inner pithy layer. This layer is quite hard and provides the structure of the nettle. Open out the stalk by splitting it in half along its length, taking care not to cut all the way through. Once you have split the stalk along its whole length, open it out by using your thumb. With one hand hold the base of the flattened length of nettle in front of you, and with the other hand break the inner pith by bending a section down towards the ground. The inner pith will break and you can now peel it off and discard it. You will now see that the nettle is made of four fibres visible as strips along its length. Try to keep these intact and let your fibres dry for a few hours before making your cord.

To make your cord, split the four fibres in half lengthways. Then make one long strip of fibre by overlapping (by about 10 cm) a thin end (the top of the nettle) with a thick end (the bottom of the nettle) and twist them together, rolling them with your thumb and forefinger. Hold the long strip you have just created at the midway point and allow the fibres to fall so you have equal lengths on either side. Hook this midway point over an anchor point, or ask a friend to hold it between their fingers and thumb. Hold one strip in each hand between thumb and forefinger and roll the fibres to the right. Then cross the right hand over the left (like a plait) and roll again. Repeat the process until you come to the end of the fibres. You can make the cord longer by twisting in additional strips as you plait. Remember to twist a thick end into a thin end to keep the cord a consistent thickness. Once you have plaited the length of cord you need, remove from your anchor point and tie a simple knot in the end to secure.

- Summer is a good time to **practice your skills**. Spend some time improving your knots and ways to use your new cord! There are lots of useful knots but good ones to start with are a clove hitch, square lashing, figure of 8 and reef knot. Try using your cord to hold a pendant or plaiting some strands to make a bracelet. Or use it for trying branches or twigs together when making crafts or making a shelter. You can make a simple drawstring pouch from a circle of cloth, leather or old rubber waterproofs, which will work like hide. Punch or drill some holes evenly around the edge and thread through your cord and draw together. If you use two cords you can pull it apart as well as together. You can use your bag to collect tinder, so you always have some dry materials with you, or to collect summer fruits.

	Eluta
What are they doing?	Many of the plants used for food and medicine can be collected and used when fresh and the clan knows all about them. Eluta is drying some herbs to keep over the winter in case of sickness. She is making a paste to paint the clan marks on people's faces for the clan gathering.
What do they think of their home?	Eluta knows all the woodland and lochside plants and trees and where to gather the best nuts and fruits. She feels connected to the rainforest and feels kinship with the Great Oak, which patiently accepts and remembers the clan's most special stories. She has stores of dried herbs for medicines.
How old are they?	Eluta is a grandmother many times over. As medicine woman she is teaching her daughter to help look after the clan when she is gone.
What do others think of him/her?	Some of the children and young people are slightly afraid of Eluta. Everyone respects her and trusts her knowledge and wisdom. Nobody likes her nettle tea.

Eluta spends much of her time making baskets and bags from reeds and willow wands for gathering plants. While many of the clan eat berries and leaves from bushes as they go about their day, plants are also gathered for communal meals. Many containers are needed for the great hazelnut harvest in the autumn. Eluta has a good journey map in her head of where the seasonal fruits and mushrooms are. She watches and waits for the weather and knows if there will be a good harvest or when plants will be ready early or late. She collects yarrow for wounds and herbs to make teas when there is sickness or fever. Moss is used to staunch blood and birch bast (the fibres inside the bark) can be used as a bandage.

As well as plants for food and medicine, plants would have been collected for festivals and celebrations. Maybe children would have made dandelion crowns in spring or collected wildflowers in summer. We don't know how Mesolithic people treated family members when they died, but perhaps their burial ceremonies used special flowers or plants. The medicine woman may have been a celebrant at births, when people became an adult or helped prepare the body after death.

- **Plant safari**. Set off on a walk and take it in turns in your group to 'spot' a plant. What could you use this for? What do we use instead? See how far you get in 10 minutes or until everyone has had a turn. Go back to base and see if you can remember all the plants. How far did you have to go to get different plants? This will tell you how rich your habitat is. How many of the plants would have been around in the Mesolithic? Think about how resourceful Mesolithic people were and the time they would have spent on making things and craft as well as getting food.
- **Scavenger hunt**. This can be done in any green space such as a park, footpath or cemetery. Either give the group a time limit to find 10 different objects or give them a list of things to find – they can tick these off or photograph them if they are scarce or are whole trees! This will improve their observation skills – essential in the Mesolithic - as well as their appreciation for the biodiversity and beauty of their local place.

Eluta gathers plants for medicines as well as foraging for food. Moss is used to staunch blood, while yarrow is used like a poultice on wounds and flowers in late summer. Lichen, bark and berries can be used to make a dye. You don't have to be an expert – a good guidebook will help you identify some of the plants in your woodland and what they can be used for. Plants are also useful to make baskets. Have a go at knots, plaiting, and weaving – all these skills were essential activities for hunter-gatherer-fisher lifestyles.

Yarrow leaves are good for stopping minor wounds from bleeding. They are feathery and grow from late summer on roadsides and grassland. It is antibacterial and analgesic as well – that means it numbs the pain and speeds up healing. Our ancestors knew this and, in *Wolf Brother*, Renn and Torak always have some yarrow leaves with them – you can crush the leaves in your hand and pack them onto the wound, holding the poultice in place with a bandage.

Everyone knows the most common medicine from plants – dock leaves rubbed on nettle stings! You often find these growing together. Plantain is another common plant which is great at treating bites and stings as it is antibacterial and anti-inflammatory. The leaves can be chewed or crushed with water and then placed on the affected area as a compress. It works straight away on nettle stings!

- You can make **herbal tea** with lots of different plants – try nettle, wild thyme, water mint and even pine needles to find your favourite! Let the herbs sit for 2-3 minutes so you get the full flavour. Try adding some honey for sweetness.
- **Dandelion honey**. Celebrate one of our most popular flowers! The whole plant can be eaten – tubers, stalk, leaves and flowers. Collect 100 dandelion heads and soak overnight in 350 ml water and the juice of half a lemon. Next day put through a sieve and discard the flowers. Add 315 g sugar to the liquid bring to the boil and simmer for 15-30 minutes until it thickens, then pour into a jar.
- Make a **spider web dream catcher** using clove hitch and square lashing. You can collect leaves, feathers, pinecones and flowers to weave into your loom or dream catcher – or use colourful autumn leaves to make a headdress.
- **Practice plant ID**. See if you can find any other Mesolithic plants in your wood, such as lesser celandine, primrose, wild garlic and wood sorrel. What else is there and how did it get there? Some good plant identification guides will help with this, and *Flora Celtica* (2004) has some good information about the origins of plants and their uses. If you are in the rainforest on Scotland's west coast, get to know the mosses, ferns, lichens and fungi as well!

Autumn’s campfire cooks

Autumn is a time of preparation and preservation for the winter months ahead. The clan is heading to the clan gathering for the hazelnut harvest, where they will also trade with the Highland Pinewoods clan for small animal skins. If they are lucky, a whale will be washed up on the shore and they can work together to share its meat, blubber and oils for winter food and fat. Hazelnuts will need to be roasted in pits to store over winter, fish and meat will be dried over the fire and autumn fruits such as apples, sloes and brambles can be gathered and stored. Crab apples are sweeter when dried and they can be added to winter stews for sweetness. Fungi are abundant – although many are poisonous, the edible ones would often crop up in the same places every year and people would know where to look. It’s also possible to eat oak moss, a kind of lichen abundant in the rainforest, as well as bugs and grubs living on the dead wood in the leaf litter – all valuable nutrition to see you through the winter. With the leaves off the trees, small mammals like squirrels are easier to see and they are busy collecting their own winter stores – perhaps they were hunted or traps set for them as extra meat and furs.

- **Pemmican**. This is a mixture of animal fat, dried meat and berries – Renn carries something similar in *Wolf Brother*. It is a preserved food that could be eaten cold and would be full of energy for the winter. It was an important part of indigenous cuisine in certain parts of North America and it is still prepared today. It would have been made with whatever meat was available – such as deer, salmon or duck in Mesolithic Scotland. The meat is dried and chopped, then mixed with animal fat and dried berries. You could try making your own with dried beef mixed with suet and dried berries such as blueberries or cherries. The mixture should be packed tight and allowed to cool. Renn carries slices or chunks in a bag.
- **Fruit leather**. Use 4 cups of berries / apple and put in a covered pan on a low heat, with some lemon juice or honey if you like. Cook until the fruits release the juices and combines together (you can also use frozen fruit). Blend and / or strain through a sieve to get rid of the seeds and make a smooth paste. If it’s still runny, cook a while longer, it should be like a puree. Evenly spread this out smoothly with a spatula onto a baking sheet. Bake at 100˚C, leaving the door partly open for 2-3 hours or in the sun! It’s ready when its tacky, not sticky, and not hard or it won’t roll up. Roll it up and cut it into sections, store in airtight container.

	Plamen
What are they doing?	Plamen is heating water in an animal skin by the fire, while strips of meat are hanging up to dry. He has flat wooden boards for preparing food, and a hot stone for cooking fish. He is making pemmican by cutting strips of dried meat into small chunks to mix with animal fat and chopped dried blackberries. Plamen watches over the children as the young adults roam through the forest, coast and rivers for food and resources.
What do they think of their home?	Plamen knows the land well and tells the children stories about the oakwood on the hills, the coast, the rivers, and the great mountain. He also remembers the ancestors and tells tales of remarkable feats from their clan and others. He brings his stories to the campfires that ring the Great Oak at the clan gathering every year!
How old are they?	He measures his age by how many grandchildren he has. Young Kaarup is his fifth and his oldest grandchild is now an adult.
What do others think of him/her?	Everyone respects Plamen's wisdom. He resolves many problems by his knowledge of the land and what has gone before. The children think he is funny as he pulls faces when he tells his stories.

There's nothing like cooking over an open fire and eating what you have collected yourself. Try some of these recipes based on available Mesolithic resources either outside or back at home. Remember, Mesolithic cooking wouldn't have involved bread or potatoes – but see what you can come up with from your foraging trips!

- **Nettle soup.** This is a great one for a cold spring day. Make sure you have gloves to pick the tops of young nettles. They will wilt down like spinach so take plenty. Use a big pot and fry onions in some oil / butter for 5 minutes, then add some garlic and cook for 2 minutes. Chop up the nettles if possible then add to the pan. Once they have wilted add some water and herbs and bring to the boil, then simmer for 5-10 minutes before taking off the heat. For a stock you could try adding sorrel for a lemony taste, wild thyme, wild garlic or use some celery and carrot to make it a bit thicker. If people are reluctant, try tasting with your eyes closed – it won't sting! Alternatively, you can try Eluta's nettle tea.

- **Dulse seaweed chips**. Make these to accompany your trout (below) or as an easy (vegetarian) snack. Dulse looks a bit like leafy red lettuce and may be attached to rocks, its best harvested at low tide and is common on the Atlantic coast of Scotland. Pull apart any large pieces of dulse before cooking. Heat oil in a pan then add the dulse until it turns brown and shrinks, but be careful not to burn as it cooks quickly! Drain on a tea towel to soak up oil before serving.
- **Ponassed trout** or (simpler) planked trout. You'll need to gut your fish to produce a fillet, so that it looks like a kipper (or you can buy fillets if you have not caught your fish yourself). For ponassed trout you'll need a 60 cm stick, split halfway down to hold your fillet in place. Two or three small, pointed sticks can then be used to pierce through the fish, through the central stick to hold the fish in place. You can use wet string to tie the stick ends together and hold the fish in place. Dig the other end of the stick in the ground so the fish is angled over the fire to cook. For planked trout you'll need to drill holes in a small plank of wood and use wooden pegs to hold the fish in place. Place the plank next to the fire at a slight angle for 10-15 minutes. This might not be suitable for everyone, so perhaps make two fires, one cooking fish and the other seaweed chips!
- Try a **wild salad** of dandelion leaves, sorrel and wild garlic in spring or make a wild garlic pesto.
- **Baked apples** on the end of a pointed stick are a great way to get into the autumn. Peel your apple and poke the pointed stick part way through at the top end. When the apple juices start to bubble, take it out the fire and roll in cinnamon sugar. Put it back in the fire and wait for the sugar to melt – be careful, it will be very hot!
- **Roasted hazelnuts**. The trick is to slow cook over a fire with a frying pan or covered saucepan.

Winter's storekeepers

"Renn wrapped two small pieces of grouse in dock leaves and left them for the clan guardians, while Torak moved the fire to the mouth of the cave, as he was determined not to spend another night inside. Half-filling Renn's cooking-skin with water, he hung it by the fire; then, using a split branch, he dropped in red-hot stones to heat it up, and added the plucked and jointed willow grouse. Soon he was stirring a fragrant stew flavoured with crow garlic and big, fleshy wood-mushrooms. They ate most of the meat, leaving a little for daymeal, and sopped up the juices with hawkbit roots baked in the embers. After that came a wonderful mash that Renn made of late lingonberries and hazelnuts, and finally some beechnuts, which they burst by the fire and peeled to get at the small, rich nuts inside. By the time he had finished, Torak felt as if he need never eat again."

Michelle Paver, *Wolf Brother*, 2004, 120.

Winter is the time the clan needs to rely on stored food, such as nuts, dried fruits or dried meats such as pemmican. Making jam or chutney or fruit cake for Christmas are tied into this idea of preserving and making high energy foods to see you through the winter. The clan would also have been able to catch small mammals or birds for some vital protein over the winter months, but like animals, may have spent the late autumn feasting to build up their fat reserves. The autumn clan gathering is a preparation for winter, with the hazelnut harvest and exchange of furs to see them through the colder months.

Early winter is also the time to cut hazel or willow rods for making baskets or fish traps in preparation for spring, when the clan will go to the river to set new fish traps. Eduk may also cut wood for new spears or harpoons that can be worked on over winter or perhaps a new paddle. Wood is best worked when it is green or newly cut but you can soak the hazel rods in water to make them pliable again if they have dried out.

- To start a fire you need three things: heat (a spark), fuel (tinder that will catch quickly) and oxygen (air – that's why covering a fire in soil or blankets will put it out). 'Ötzi', the naturally mummified remains of a man who lived 5300 years ago in the Ötztal Alps in Austria, was found with flint, iron pyrites, and a collection of different plants for tinder. Today we use a flint and steel with small dry twigs or cotton wool. In the Mesolithic, people may have carried around small pouches of fire that could be rekindled when needed. They may have used a smouldering piece of tinder, like a hoof fungus.
- In *Wolf Brother*, Torak and Renn carry their smouldering tinder wrapped in moss and birch bark. They can then blow on it to increase the heat and drop it into some dry fine kindling, like grass or bracken to create a flame when they need to. What other types of tinder could you use? What do you need to remember when looking for tinder?
- Make a **bow drill** to start a fire. You'll need a short plank of seasoned wood at least 2.5 cm thick to form the hearth. A straight spindle 38 cm long with a point at one end and a dome shape at the other. A bearing block from green wood – this will need a dip carved in it to the middle of it to fit on top of the spindle. Carve a dip in the hearth for the rounded end of the spindle to fit into. With your knife or a saw, cut a V-shaped notch from the dip to the edge. Place the round end of the spindle into the dip in the hearth and push down on the pointed end with the bearing block. Wrap a rope around the middle of the spindle, with one or more people at each end of the hearth. Pull the rope back and forth until the notch is filled with charred wood dust. When the notch is full, pull quickly for 10 seconds. If you see smoke rising, let the ember sit there for 10-30 seconds to grow. Tip the ember into a tinder bundle and gently blow to make flames!
- Sometimes it's good to light a fire for warmth, especially on cold winter days. The feeling of light and cosiness makes it good for talking or telling stories. Try *Tree Stories*, share your story maps or invent a story about how your woodland came to be. **Story stones** can be used for this – each stone has a picture (or word) drawn on, which can be an earlier activity (you may have to source your stones from somewhere else or perhaps you could use bark). These can be used in groups for the storyteller or you can work collaboratively to tell a story together, each adding a new stone or piece of the story.

	Eduk
What are they doing?	Eduk is making a basket from reeds to store nuts and crab apples for the winter. He will hang them from the roof of the shelter. Eduk looks after the hides and skins that the clan will take to the clan gathering and for summer hunting trips. He collects seal oil for the boats and skins. He has built a small shelter to keep the firewood dry.
What do they think of their home?	Eduk does not stray far from his hut but occasionally goes to the loch shore to collect reeds and occasionally helps with the seal hunt, as he will help prepare and store the blubber and skin.
How old are they?	Eduk is an adult but was injured by a boar while hunting and is not able to move quickly anymore. He watches over the younger children as he stays close to the camp.
What do others think of him/her?	Eluta uses the baskets and containers he makes when she collects from the forest.

Eduk stores food and other resources over the year so the clan has enough to keep them going over the winter. He puts animal pelts aside to make clothing or stores useful tent poles, boats or skins for when the clan is moving camp. Firewood is also important for the winter and the clan would have had to have a shelter to keep it dry, although some wood was better for burning than others. The shelter would also be useful for smoking meat and fish and drying skins. Although they lived from the land with natural resources, Mesolithic people have left little trace, demonstrating good practice in using the woodlands today.

While during the spring and summer months the forest would have been rich in nuts, fruits and plants, the clan would have needed to store food for over the winter months when there was much less abundance. There is little surviving evidence for storage on Mesolithic sites in Scotland except for burnt hazelnut shells – these would have stored well once roasted. They may have been stored in sealed pits or perhaps hung up in containers in the winter camp or cave to stay dry.

In *Wolf Brother*, Torak plans to use the deer's intestines to store hazelnuts. Meat would have been regularly smoked over the fire and stored, particularly if it was from a large animal. The dried-out stomach of a butchered deer or wild boar could have been used as a bag for cooking or for storage. Eduk might make baskets from reeds or thin hazel wands to store things in, or use birch bark to make small containers. He also makes carves wooden plates, bowls and utensils, and makes lots of different types of bags and pouches.

As well as food, Eduk stores skins, driftwood, and other useful things to take along to the clan gathering or for the hunters when they go to temporary camps in spring and summer. They might also store oily fish and blubber from seals for preserving and waterproofing skins and to make oil for lamps.

Oihana knows the animals well as she uses the pelts to make clothing. She would have had a toolkit of flint scrapers, burins and knives to scrape the hides, tan them and sew them together using bone needles and sinew. Smaller pelts could have been used for shoes, fur trimmings, pouches or perhaps to mend larger items. Leather would also have been a key material in making gourds and containers.

The skins that Oihana prepares and trades from large and small mammals will clothe the people over the winter. They will need bone needles and sinew or twine as thread to stitch the clothes together. In *Wolf Brother* the hunters also have sleeping sacks made from fish skin to keep them dry when they go hunting.

- **Build a shelter**. Imagine you are leaving your winter shelter or cave to go hunting in the summer months. What would you need to take with you? Gather what you think you'll need (tent poles, twine, stones…) and go and find a good place to set up camp. In your imaginary (and real) shelter – are you near water? Is it a sheltered spot? A good view? What will you use when you get there – branches to soften the floor, flowers to decorate, something to make a hearth? Go for it and make it your own – you can add a clan name or animal or even a feather for luck from the forest. Depending on how much time you have you could make this a whole group activity and spend time making a good shelter, covering it with branches and leaf mould to make it watertight. A small tarp can be a substitute skin if you have one.
- **Squirrel nuts**. In groups of 2 or 3 collect something to act as nuts that you will store over the winter (like a squirrel). You could use beech nuts, pine cones or small pebbles depending on what kind of wood you are in. Go away and hide your nuts in at least 3 or 4 different places – you might cover them in leaves, dig a small hole or hide them in a tree hole. The leader now plays a game for a while, half an hour or more, maybe in a different part of the wood. Go back later in the day and see if you can find all your nuts – or if another squirrel has beaten you to it!

	Oihana
What are they doing?	Oihana is the tanner and stitcher from the Pinewoods clan. She stretches the skin on a frame of poles or between two trees. When she has softened the skin she uses a flint scraper to clean the skin. She leaves the fur on for winter clothes. She uses seal blubber, traded at the clan gathering to preserve the leather.
What do they think of their home?	Oihana is happy living in the pinewoods and comes to the coast for the winter. She brings skins and furs to share and exchange to the coast in the winter.
How old are they?	Oihana is Pihla's mother. She is strong and fit but no longer hunts, staying at camp preparing skins and making clothes during the winter.
What do others think of him/her?	Eduk enjoys Oihana's company over the winter as they make containers, tools and clothes from the skins.

Mesolithic map makers

Pihla is getting to know the rainforest as she explores – she is more used to the pinewoods of her home. She loves to look at the insects and spiders on the forest floor, especially when the webs glisten in the morning dew, or finding a shady spot under a favourite tree, watching and listening to the birds. Walking the paths around the camp and venturing deeper into the woodland helps her connect with the spirits that live there. Spending time in the woods can be good for us too – and help us to want to look after the natural environment.

"Some routes through the trees were long established," observes the archaeologist Graeme Warren, "the track to the riverside from the camp, or the route onto the floodplain for the large gatherings of the community. Other routes were trod once and once only. In a similar way old paths from a previous year's visit towards good hunting grounds may still have been visible and could be retrodden. Possibly some spring and summer growth needed to be cut back in order to maintain important routes. Some people may have outlasted particular paths, whereas some paths may always have been there. Treading the same paths as a now deceased parent or an elder sibling now married may have been an important part of the biography of particular individuals. Paths had differing durations and the scar of erosion created by the routines of labour may, in turn, have shaped the activity of those following. Particular routes through the trees created certain views and vistas – in a very subtle way structuring a community's experience of the local world. Learning traditional paths, their names and the names of features of the landscape visible from these routes were a vital aspect of socialisation" (2005, 73).

It is early autumn and, having spent all of spring and summer trapping and hunting for furs, the Highland Pinewood clan is traveling to the coast for the hazelnut harvest before the late autumn rains. Then they will move on to trade and celebrate the harvest at the clan gathering by the sea. Pihla's map is orientated towards the setting sun in the west. The river is shown with twigs and the sea with nettle leaves, moulding the hills and mountains out of earth. The carved animal and fish figurines are based on similar figurines found in Norway. The oak leaf lake and trout figurine reflect places and resources, while the pebbles of the camp show charcoal doors and the red ochre marks the hearth. There are more pebble 'tents' marking the clan gathering at the coast, alongside the flint blades that the Highland Pinewood clan hope to exchange for their pelts and furs.

- **3D maps.** Go on a walk around your woodland or the area you are using (it's up to you how big an area you'd like to map, based on the group size or ability. You can do this in a group or individually). Look out for any landmarks, features, unusual trees, changes on the ground – you can give these things names if you like (such as 'the boggy path' or 'the lonely tree'). Mark out an area with sticks where you will make your map or use a 'picture frame' using knots to lash sticks together. Use natural materials like Pihla has done to mark the places in the wood.
- **Expand your woodland!** Like the 3D maps but this time turn the burn into a river torrent full of salmon, the small hill into the mountains, the wiggly path into the place where you'll follow the reindeer. This could follow on from some classroom-based activities (below) and allows learners to start to think about the landscape more widely and how Mesolithic people would have travelled through it. Where would you put your camp in your expanded woodland?
- **Story maps.** Mesolithic people may have shared their knowledge of the landscape through tales related to natural places. In groups come up with a story about the landscape that would help you remember how to get to a camp, where to find resources or even a story of danger and adventure.
- **Microhabitats.** Get down and dirty with the smaller creatures and plants. You'll need magnifying glasses and a note book. You can set up a 1 m trail along a line and on hands and knees (or bellies) creep along the ground noting all the different species. Alternatively try the quadrat – a 1 m square (or circle – hula hoops work well) and count all the different species you can see. This works well if different groups work in different areas and also if you can come back seasonally and get a full picture of the woodland.
- **Ecological maps.** Like the 3D map you'll start by making a note of the different areas of the woodland. There may be an existing map you can base it on. Draw or note the different trees and plants, highlighting introduced species such as rhododendron. You could show the 'Mesolithic trees and plants', although your woodland may not be that old. How would you take care of each of the areas of woodland? What is impacting on the woodland and how could you help manage that? What is the biodiversity like? Has it changed? You could develop this further by looking at old maps of the area to see how the wood has changed and how old it may be.
- ***Into the Rainforest* resource cards.** Use the resource cards and your ideas from the map making activity in Into the Wildwoods to create your own Mesolithic maps of the rainforest habitat and its surrounding area. Use a big sheet of paper or wall to highlight the different resources and plan out the year.

Restoring biodiversity

People living in the Mesolithic were in tune with their natural surroundings, knowing where to find food, resources and shelter within their local habitat and would have had a healthy lifestyle. The weather would have had a real impact on their life – a poor summer may have meant fewer berries and nuts in the autumn, and a harsh winter may have reduced the deer herds, making hunting more difficult. Biodiversity meant survival, and it still does. Bees and other insects are needed to pollinate plants, and herbs and foliage from trees are still needed for medicines. In Scotland and elsewhere, people are working to halt the decline in biodiversity and take action to adapt to climate change. Below are some suggestions on how you can help, learn about and look after your patch of woodland or green space.

- Ash trees are suffering from a disease called ash dieback, caused by a fungus. The affected trees lose their leaves and the tree starts to die. Ash trees are easy to spot by their groups of winged seeds that look like hanging keys! You could try growing your own ash trees from the seeds. Maybe you could create a Mesolithic woodland using the trees found in Gabi's wood (pine, oak, ash, alder, rowan, birch, willow, hazel). Or try some others that may be easy to find such as acorns (oak), horse chestnut (conkers), elm, sycamore or lime, which all have distinctive seeds. Sow each seed in a small pot with compost and leave them outside over the winter and you may have new trees emerging in the spring.
- If you don't have a woodland nearby, why not grow your own 'wild harvest'? Trees such as elder, hazel, blackthorn, crab apple, dog rose and rowan can be foraged like your Mesolithic ancestors! They are not big trees so could be grown in a raised bed or large pot in the playground. Remember, a woodland or orchard is planted for future generations. Perhaps you could leave a time capsule for them to find?

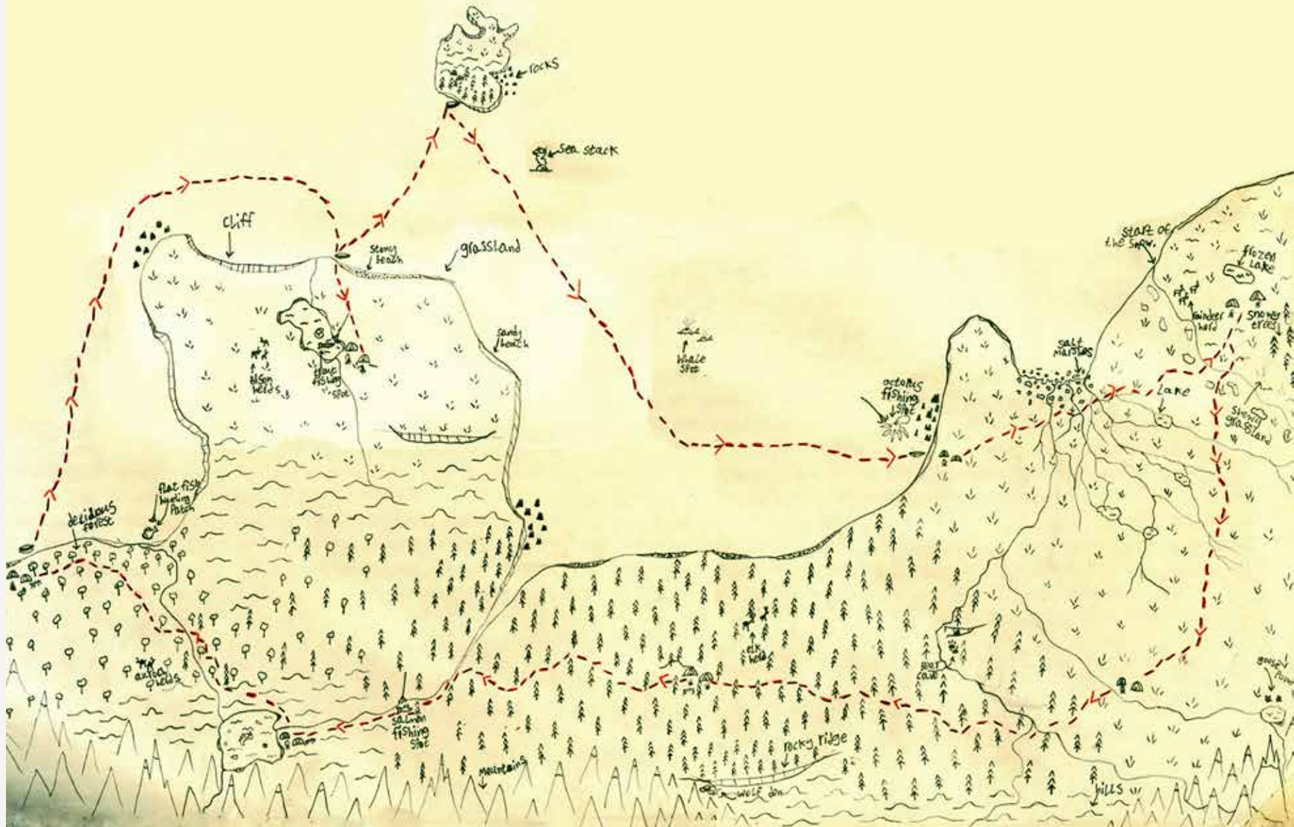
Some of the larger Mesolithic animals such as aurochs (an extinct species of cattle), lynx and wolf are no longer found in Scotland. In the future, some of these animals may be considered for reintroduction as part of rewilding projects to protect species and habitats. Wolves disappeared from Scotland over 200 years ago and were hunted to extinction across most of western Europe. After wolf hunting was banned in Poland 30 years ago, wolves have spread westwards into Germany, the Netherlands, Denmark and France.

Squirrels are slightly easier to see in autumn as the leaves fall from the trees and they are collecting acorns for winter. Although small animals such as this would have been hunted, for us it is a delight to see a red squirrel in the woods. The Saving Scotland's Red Squirrels project aims to protect the forests where red squirrels are found and stop their decline. If you don't live in an area with red squirrels, grey squirrels can often be seen in city parks and woodland.

- **Sit spot.** This is a great activity to practice listening and observation and will help to develop an affinity with the woods or a particular tree or place. You can start with a minute at a time and slowly increase it. Everyone picks somewhere to sit by themselves and concentrates on being quiet, observing their senses and hopefully seeing and hearing some of the animals in the woods. They do not need to go very far but should be far enough from others that they are not distracted. Encourage them not to make a noise ("I've seen a squirrel!") but to sit quietly and observe. When time is up, there is a call so everyone returns to base and shares what they have seen, heard or felt.
- **Pinecone bird feeder.** See if you can spot any pinecones that have been nibbled by squirrels in your woods. You can also use a pinecone to make a bird feeder and help garden birds in the winter. Cones from a Scots pine work best but you might need to keep it in your pocket or somewhere warm to get it to open first. Tie a bit of string around the top. You'll need some lard and some bird seed mix – this is the messy bit! Mix these together so the seed is sticky and then stick it to the pinecone and over the string. You can hang it on a tree, gate or balcony and watch the birds in your indoor sit spot! The longer you sit, the more confident the wildlife becomes and starts to get closer. Scrape the ground before you sit down and a robin may hop down to look for insects.

"My Coastal Clan travel northeast as summer comes and then go southwest as winter comes. Most of the summer journey is by animal skin boats and most of the way back is through the forest, where they hunt elk, bison and auroch, and fish for salmon in the river."

Rowan Pomeroy Soos (S2)



Atlantic Rainforest

Whelks

Gathered from rock pools, whelks can be eaten all year round, although you have to use a sharp stick to get the sea snails out of their shells once they are cooked. Then the shells can make beads to sew on clothing.

Atlantic Rainforest

Crabs

Crabs make good eating. You drop them in boiling water to cook them, and then crack open the claws and body to get at the white and brown meat, but don't eat the green meat!

You can find big brown crabs at low tide in **spring**, **summer** and **autumn**.

Atlantic Rainforest

Shellfish

Limpets, oysters and mussels are a staple foodstuff. The shells also make good tools. Limpet shells protect the hand while steadying a drill, oyster shells are good for scraping and as scoops. What else could you use shell for? You find them clinging to rocks by the shore at lowtide **all year round**.

Atlantic Rainforest

Nettles

Only growing at the edge of the wood or in clearings, nettles can be eaten (the leaves are very nutritious) and dried and stripped and made into string and baskets for making traps and containers. Nettles for eating are best gathered in the **spring** when the leaves are pale green and tender, and in **late summer** if you want to make string from the long stems.

Atlantic Rainforest

Carragheen seaweed

This red seaweed grows on the rocks that appear out of the sea at low tide and is rich in health-giving minerals. There are other edible seaweeds that may well have been made use of by the Mesolithic community. Seaweed for eating is best harvested in **early summer**.

Atlantic Rainforest

Loch shore

The loch shore is a good place to hunt deer when they come out of the forest to drink. You should also look out for bears, wild boars and beavers!

Atlantic Rainforest

Beavers

While beavers provided both food and furs, they also cut down trees and modified woodlands, building dams that transformed rivers and valley floors into rich wetlands, creating more opportunities for humans to hunt, fish and gather food.

Atlantic Rainforest

Rivers and streams

Rivers and streams were important places to fish and forage, but they were also connecting routeways that twisted and wound through the landscape.

Atlantic Rainforest

Trout

Fisherfolk all have their favourite cool dark pool where the plump trout of late autumn rise to catch the evening flies dancing in the fading rays of the sun.

Atlantic Rainforest

Great Oak

The Great Oak stands at the heart of the great clan gathering. Some say it has stood since the very beginning, while others say that every age has its own, and that when it falls a new one will be chosen.

Atlantic Rainforest

Yarrow

Yarrow has many important uses, especially in traditional medicine. It has been used to stop bleeding, heal wounds and treat pain.

Atlantic Rainforest

Birch bark

Birch bark can be carefully removed from birch trees in large strips. The bark contains natural waxes that make it both waterproof and flammable. It can be used for making storage containers, torches and firelighters, and a tar which could be used as a glue.

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Into the Rainforest was produced by Forestry and Land Scotland in partnership with the Alliance for Scotland's Rainforest and Archaeology Scotland. It is a contribution towards the aims and objectives of the Alliance for Scotland's Rainforest, Scotland's Archaeology Strategy and the Scottish Forestry Strategy.

The resource has been written to provide background information, suggestions and ideas that practitioners can adapt to their own context. There are lots of sources of further information and guidance available, and you should always follow the Scottish Outdoor Access Code.

Always follow Outdoor & Woodland Learning Scotland's Fire Guidance. This is summary guidance and is not comprehensive, and should be supported by skills development, training and specialist guidance where appropriate. Be aware of the danger of wildfires and their potential to spread. Never start a fire during prolonged dry periods.

Foraging is fun but should be undertaken responsibly. Follow the Woodland Trust Foraging Guidelines. The Field Studies Council have an excellent series of species identification guides in their publication archives.

Outdoor and Woodland Learning Scotland aims to increase the understanding and appreciation, particularly among young people, of the environmental, social, and economic potential of trees, woodlands and forests and of the link between the tree and everyday wood products. The website has a library of woodland education resources. OWL Scotland operates through local OWL groups – why not join yours?

Imagine the world of the wild harvesters, living within the rainforests of Scotland over six thousand years ago

Using an inspirational blend of archaeological discussion and creative activities, the authors draw on the work of leading archaeologists to describe an ancient past that is still accessible today, rooted in an ecological understanding of place and time, and in our human response to both.

A companion to *Into the Wildwoods* (2020), *Into the Rainforest* explores the rainforest habitat and introduces the Atlantic Rainforest clan. We focus on individual characters and their activities, from hunting and trapping through gathering the wild harvest to cooking and preserving all that the forest provides. We aim to describe an 'archaeoecological' approach to learning and to explore the interconnected ideas of habitats, natural resources and seasonal change.

This resource will be of interest to teachers, archaeological educators and youth group leaders – and to anyone with an interest in the presentation and interpretation of our ancient past.

Praise for *Into the Wildwoods*:

"The overall message is that this ancient past can still be accessed today, which can help us understand our place in the world. This stimulating book summarises fascinating findings and highlights how 'soft' our lives are in comparison with the hardy, skilful and resourceful hunter-gatherers who moved through ancient forests."

SCOTTISH FORESTRY

SCOTLAND'S ARCHAEOLOGY STRATEGY

Forestry and Land Scotland | Coilltearachd agus Fearann Alba

Alliance for Scotland's Rainforest