Sitka Spruce: conflicts over old growth and plantations

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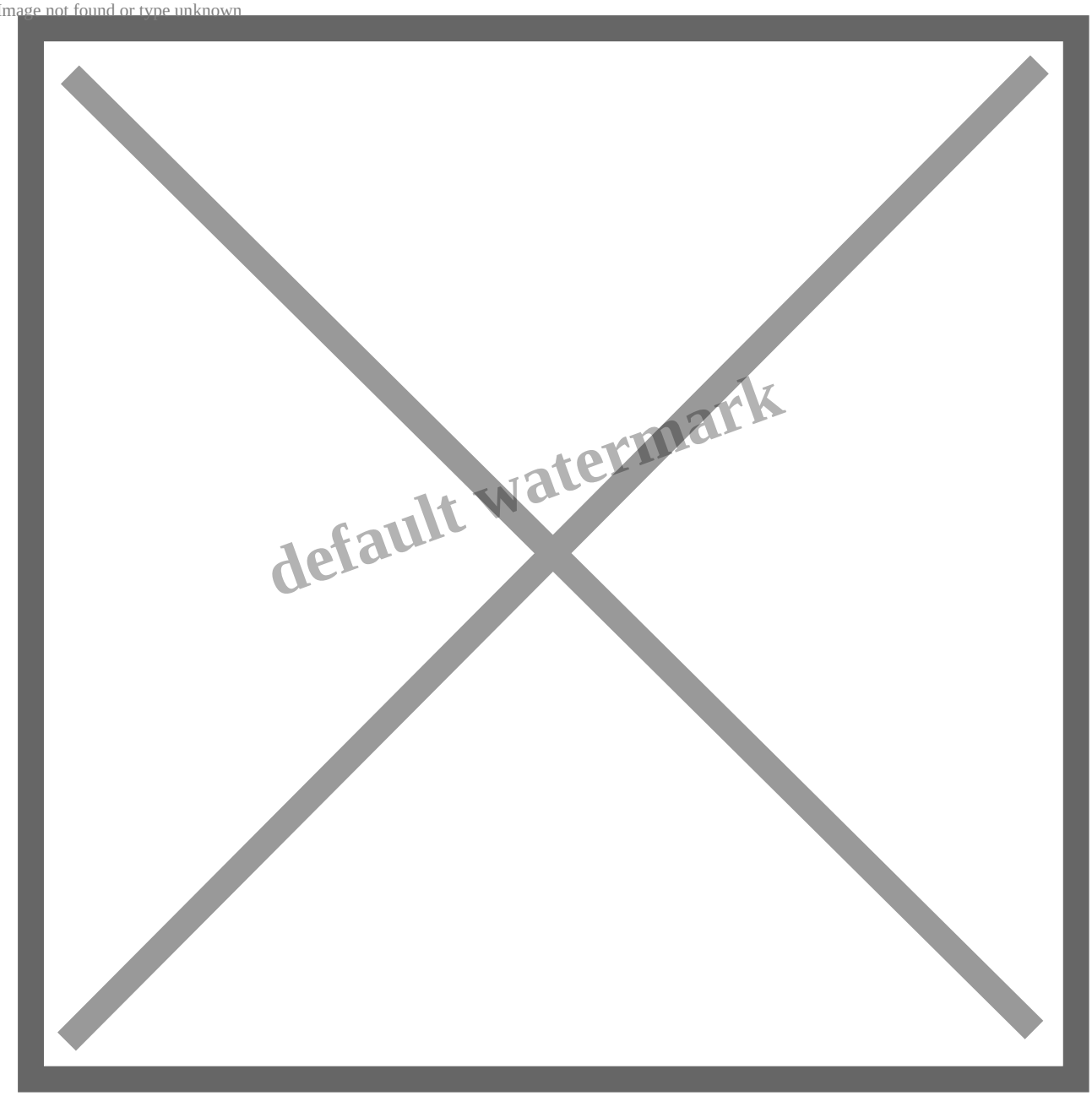

Giant Sitka Spruce in the Hoh Rainforest, Olympic National Park, Washington

This story is in two parts. It's about Sitka spruce, a tree I first encountered in poorly planned plantations in Scotland and later saw in magnificent forests in western North America. Here we look at the story of the Scottish plantations, the exploitation and conservation of the forests in America, and the conflicts surrounding these.

Let's talk about Sitka spruce (*Picea sitchensis*). The various types of spruce found in different parts of the northern hemisphere have played a big part in guitar building throughout the history of the instrument. Spruce is one of the most commonly used woods for guitar tops, and Sitka spruce has become a mainstay for the guitar industry.

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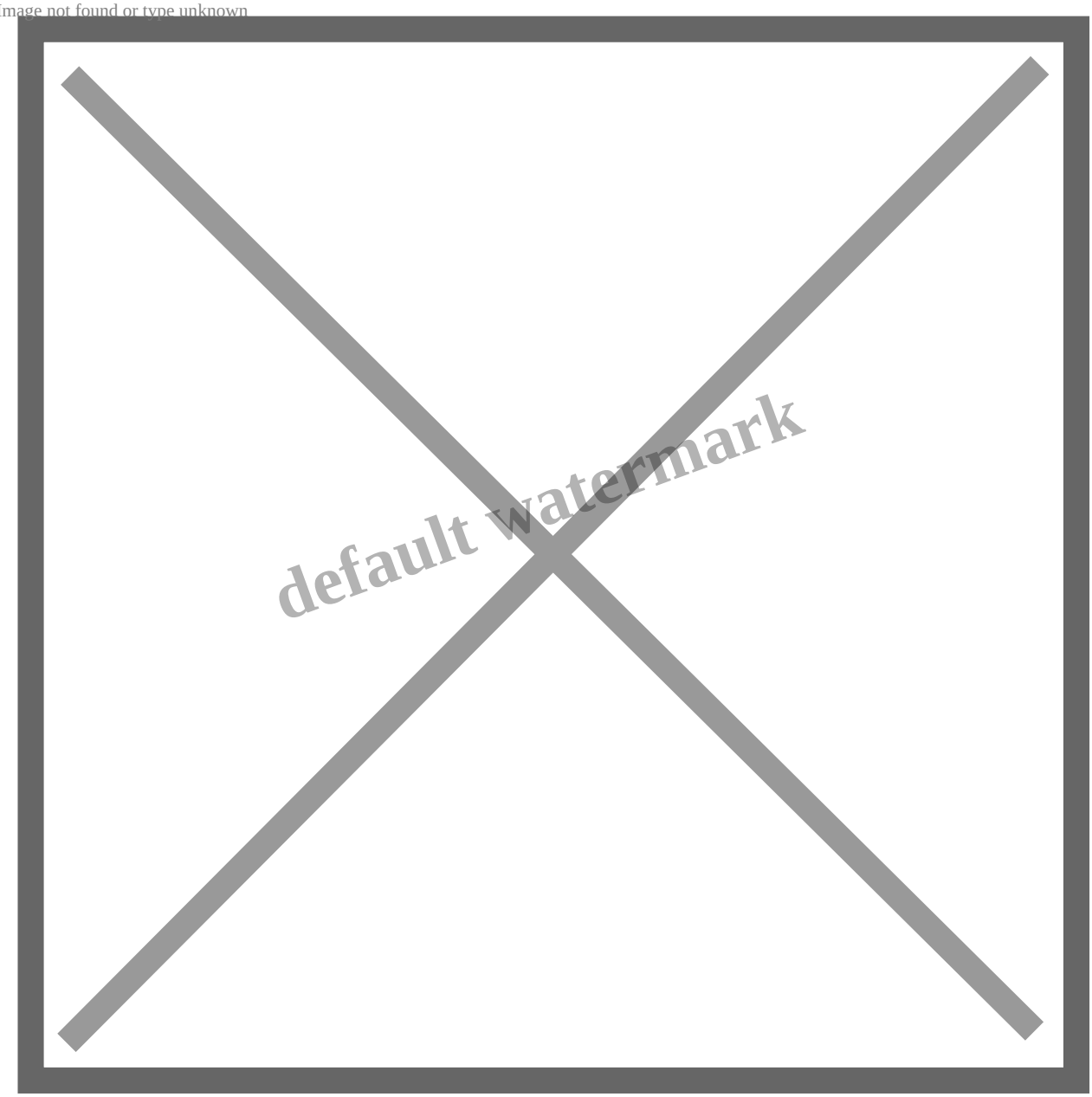

Common tonewoods for guitar tops. Source: Acoustic Guitar

It's taken me quite some time to pull this piece together – I started it as part of a Writing Residency I undertook in Italy a year ago. It faltered partially because I was distracted by violins and violin-making in northern Italy. But there's also a surprising amount in the story of Sitka spruce, and I found it difficult to sort out a good story-line. Indeed, I've ended up telling the story in two instalments.

But perhaps the main factor affecting the writing process was the realisation that many aspects of the

Sitka story involve conflict of one sort or another. From my first encounter with Sitka spruce plantations in Scotland through to more recent visits to the western seaboard of North America, it's obvious that Sitka courts controversy and differences of opinion wherever it's found.

Of course, it's not the tree itself that creates the controversy, but rather what people want to do with it. From spreading monoculture plantations across the wilds of Scotland to clear-felling ever scarcer old growth forests in North America, Sitka sits in the eye of the storm of differing demands and perspectives about forests. Foresters, conservationists, scientists, big corporations, government agencies, indigenous communities – all these and more have a stake in what's happened and what might happen in the future. And guitar building is inevitably caught up in this. This is my story of the tree from Sitka.

Scottish Sitka

When I was doing my Ecological Science degree in Edinburgh in the 1970s, the degree was run by the Department of Forestry and Natural Resources. Forestry and silviculture were taught as part of the degree, and we had field excursions to learn about how forestry was done – including measuring tree sizes in natural and plantation forests, with a view to estimating the volume of timber present.

I have to confess that our group's main aim was to finish the exercise as quickly as possible, hide from the lecturer who tried to keep track of our progress, and high-tail it to the nearby pub so we had time for a pint before getting on the bus back to the University.

I guess we still learned stuff though. I was surprised to find that Sitka spruce was one of the commonest forestry trees in Scotland – a tree that originated in western North America. These had been planted extensively in many parts of Scotland as a mechanism for reducing reliance on imported timber. Its bluish green, very spiky foliage covered many hillsides. Several of my lecturers at Edinburgh University were well-known researchers in Sitka ecology and management. Today, Sitka accounts for 58% of conifer woodland in Scotland.

The plantations were often rather unimpressive, with poor growth and stunted trees – and at the same time the plantations were so dense that they prevented much else growing and provided little habitat value for any wildlife. Government policy pushed plantations into marginal upland areas. That meant they were planted in areas that should probably have been left alone – especially areas of deep peat that were difficult to plant and had their own intrinsic values (including, as is now well recognised, storage of large amounts of carbon).

Sitka spruce plantations

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Sitka spruce plantations. Source: Countrylife

Inside a sitka Spruce plantation.

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Sitka spruce plantation. Source: Change.org

As a PhD student, I was able to watch first-hand as ploughing of peat for tree planting was carried out – this required specially-designed equipment that still nevertheless got bogged regularly. The only way to plough steeper slopes was to allow the tractor to run straight downhill (otherwise the machine would topple sideways), creating furrows that also ran straight down the slope. The whole thing struck me as sheer lunacy.

Peat ploughing demonstration, Skye 1982

Ploughing peat, Skye 1982

Bogged ploughing equipment, Skye 1982

Celebrating Sitka

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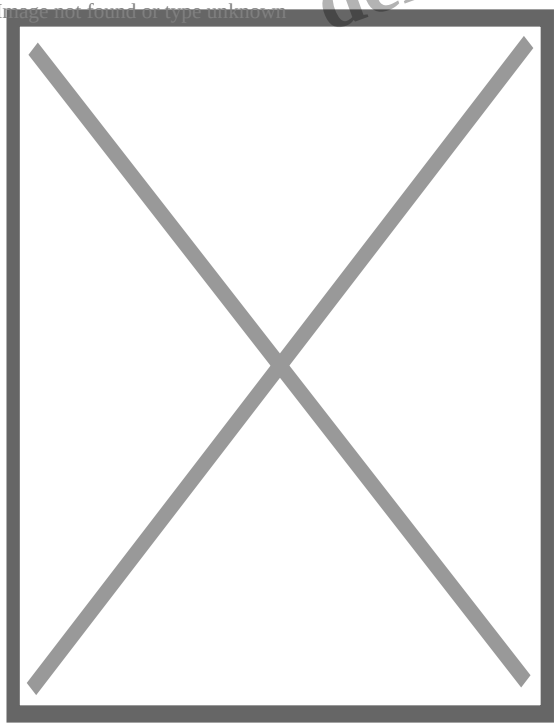

Move forward 40 years, and I recently came across “Shades of Green”, a book by Ruth Tittensor published in 2016. This covers the ecology, history and use of Sitka spruce both in the British Isles and in Sitka’s native habitat in western North America. I looked forward to reading this book, having experienced Sitka spruce both in Scotland and North America. I found it fascinating, but also at times

extremely frustrating.

It's obvious the author loves her subject matter, and the book celebrates the role of Sitka in Scotland and other parts of Britain and Ireland. I have to confess that I couldn't share that admiration – as may be obvious from my earlier comments.

Indeed, there has been considerable debate and controversy around the use of Sitka and the types of forestry management employed across the British Isles. My frustration with the book arises because of its summary dismissal of such concerns and the way it glosses over the obvious negative aspects of the spread of Sitka, particularly in upland areas. The first chapter is titled "The Most Hated Tree?", referencing the negative public views on Sitka, but the rest of the book seems intent on making us love Sitka regardless.

Glossing over conflict

Two excellent reviews of the book enlarge on these points if you want to read more – interestingly, both reviewers, Bernard Planterose and Gordon Patterson went through the same undergraduate degree program as me in Edinburgh and have since amassed considerable experience of forest management in Scotland.

Gordon Patterson writes:

> *"..at times the desire to advocate the merits of Sitka, to respond to what the author feels has been an unfair vilification of the species in UK and Ireland, seems to inhibit a completely balanced appraisal of its pros and cons.*
>
> *Opposition to Sitka forests from the public and from 'nature conservationists' is characterised as being largely based on erroneous romantic notions of the former naturalness of the moorlands and wildwoods which conifer plantations replaced, a lack of understanding of the degree of past human landscape modification, and ignorance of the developing biodiversity of spruce forests as they mature.*
>
> *Whilst there is arguably a good deal of truth in this, the book rather skates over the real negative environmental impacts that extensive Sitka spruce and other conifer forests have undoubtedly often have had, for example in reducing the biodiversity and integrity of many remnant native and ancient woodlands. The future section might also have made more of an exploration of the risks of continuing to rely so heavily on a single species in extensive plantation stands for future timber supplies, and of alternatives.*

Of course, this highlights the ongoing tension between growing an economic product and taking account of broader environmental and social concerns. But it also demonstrates the tendency for people with strong personal perspectives to dismiss opposing viewpoints out of hand. Things like Sitka plantations may make sense from an economic standpoint (although even then some plantations have ended up having little economic value), but they may not stack up socially and environmentally.

Conflicts in perspectives

Reading "*Shades of Green*", I found myself perplexed by the varying responses it evoked in me. My early experiences with the dense Sitka spruce plantations being established in the Scottish uplands did not reflect the author's celebratory comments around them. These plantations made a mess of the landscape and many remain poorly managed – in fact, some conservation organisations are working on removing the trees and reversing the changes wrought on the local environment. The dismissive comments about those who question the place of Sitka in the landscape rankled more than a little.

But I also had some sympathy for Tittensor's view that the Sitka plantations are simply one in a long line of landscape transformations that have been imposed by humans in long-inhabited landscapes such as Scotland (and in fact in many parts of the world). The argument is that nothing is really "natural" and hence changes are to be expected – and embraced. And the native species will eventually adapt to, and make use of, the new habitats.

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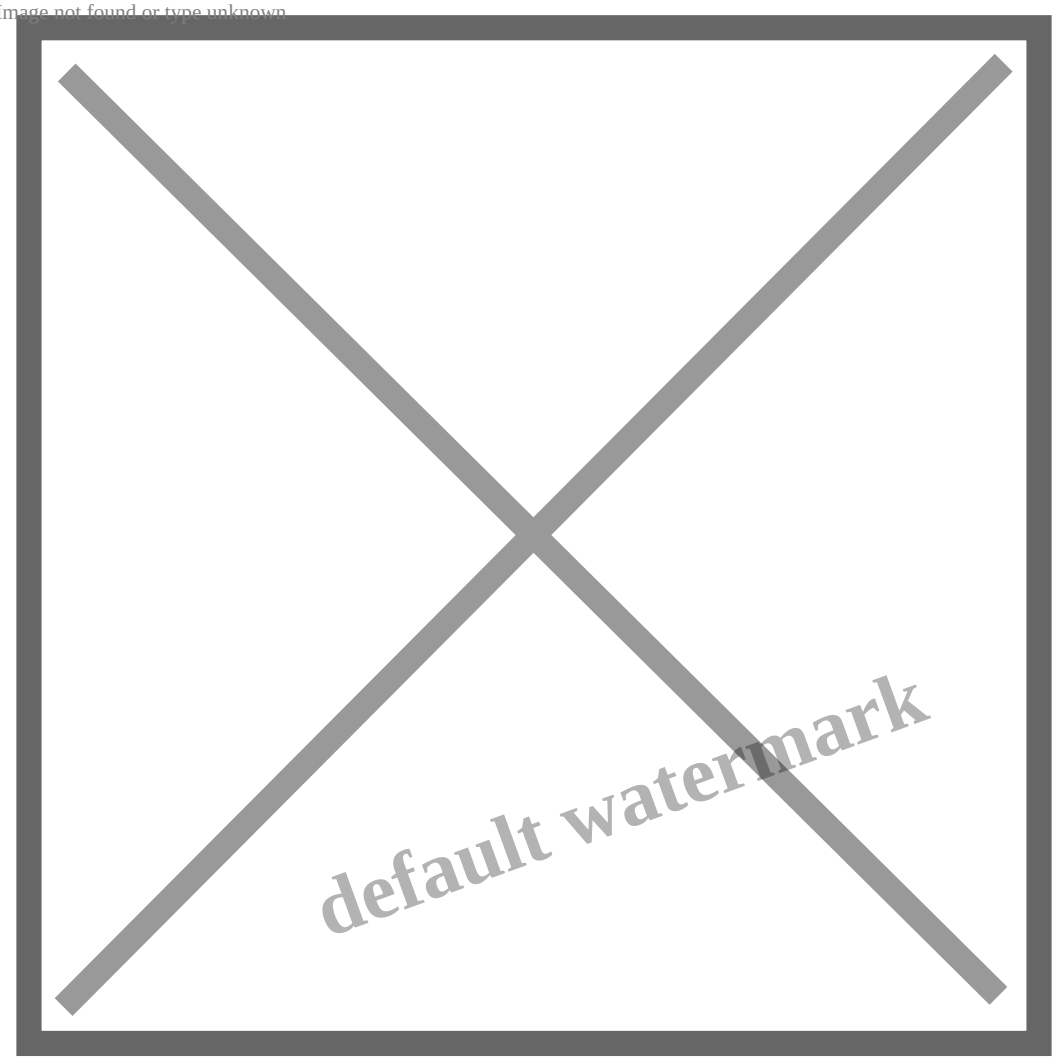

Scotland's iconic landscapes once had much more tree cover

I've spent a fair bit of my career arguing that society needs to look beyond "naturalness" and seek value in the nature we have now, even if it is dramatically altered from what might have been there in the past. That sometimes (but not always) includes looking at non-native species as potentially beneficial.

There is also little doubt that plantation forestry has an important role to play in meeting society's demand for timber and pulp. I've spent a bit of time looking at whether plantations can contribute to the overall value of a landscape for species other than humans. The answer to that depends on what the plantations are like and where they are situated. Unfortunately, many plantations are established with little regard to the surrounding landscape and are managed in ways that are unlikely to encourage other species to use or inhabit them.

More than just profit

So, surely it still matters what kind of change is pushed on the landscape and how it is done? My negative feelings about Sitka spruce plantations don't arise from the fact that it's Sitka spruce and not native to Scotland. They come more from the apparent lack of concern for the local ecology, aesthetics

or social acceptability. New ecosystems do not need to be ugly, and you don't have to go to heroic lengths to plant trees in unsuitable areas. And people's emotive reactions to landscape changes matter and shouldn't be belittled.

Sure, if you wait long enough, some of the plantations will mature into better habitat. But it might be a long wait, and opinions vary on whether poorly sited and poorly managed plantations will ever develop into better stands of trees. And the prevailing harvest cycle means that many plantations are harvested well before they become mature stands.

It appears I'm not alone in thinking like this. Indeed, in recent years Scottish forestry has moved away from the bland monoculture approach and trying to afforest peat ecosystems. Local communities and NGOs are interested in re-establishing the native Scots pine in areas where it has disappeared because of overgrazing, fire and past logging. An array of alternatives can be considered instead which tick more than just the economic box. These alternatives can still include Sitka, but hopefully the learnings of the past will make for better all-round outcomes.

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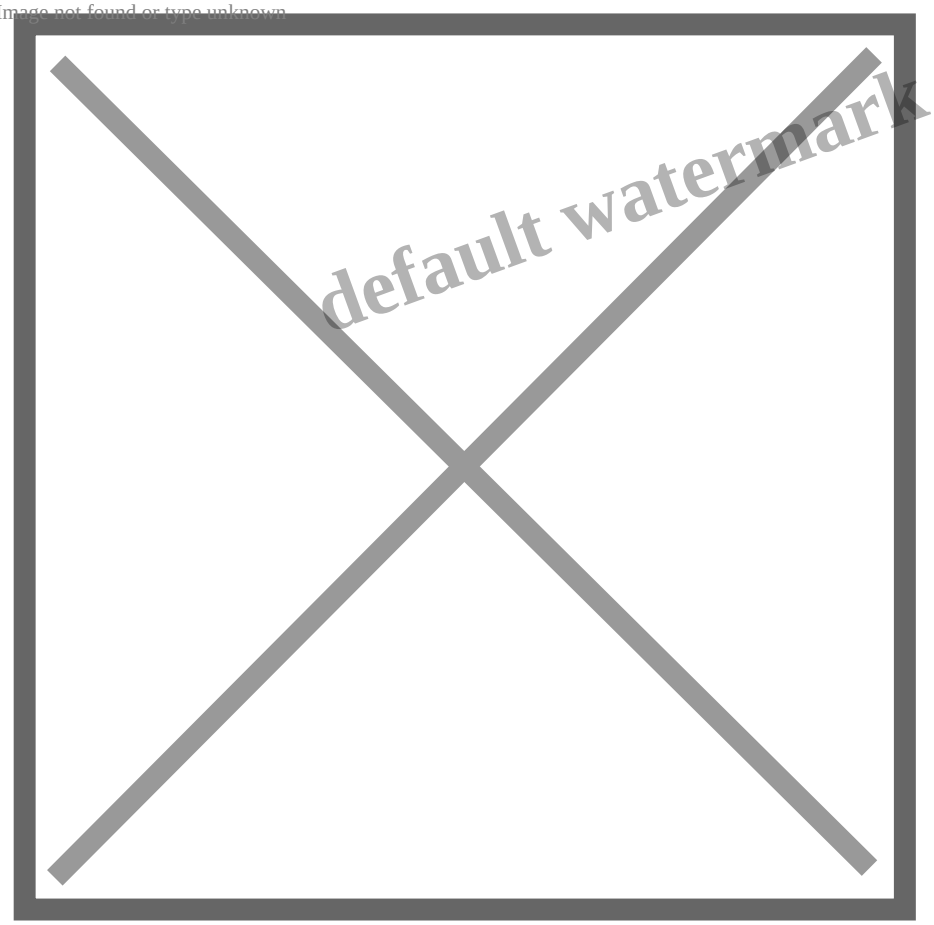

Source: Scottish Wildlife Trust

Sitka spruce at home

So, why did Sitka spruce become so prevalent in Scotland? The answer is, of course, that early foresters were impressed with its potential as a tree that grows well and produces good timber. I had seen some impressive big old trees planted here and there in Scotland. But it wasn't until I visited the

Pacific Northwest of North America and saw Sitka in its native habitat that I really appreciated what it had to offer. Instead of the scruffy immature forests widely planted in Scotland, I found magnificent old-growth forests with Sitka and other species reaching for the sky.

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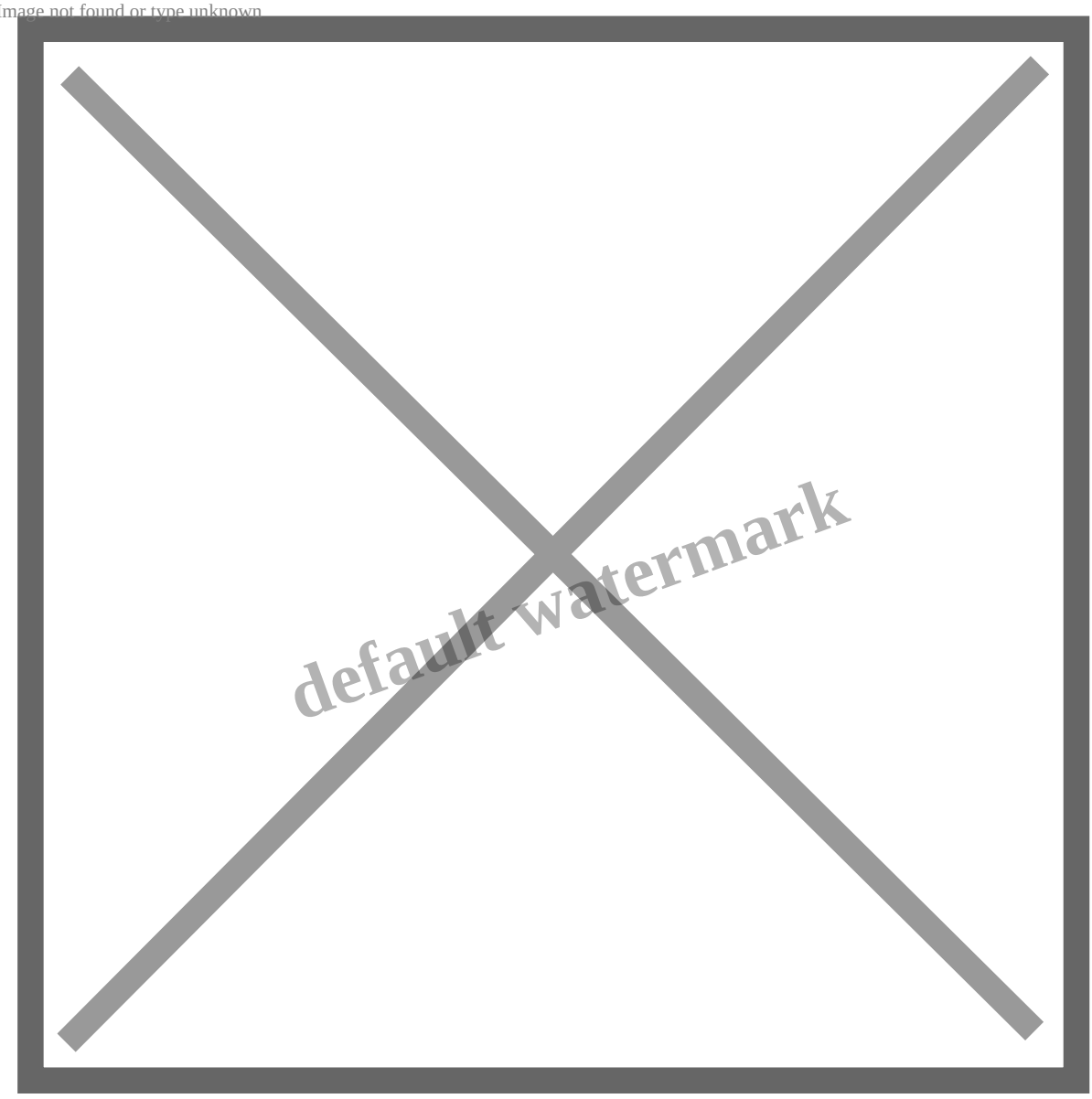

Sitka, Alaska. Source: Audobon Society

Sitka Spruce gets its name from one of the Tlingit nations and the island they inhabit in southeast Alaska – although the island is now called Baranof Island and the name Sitka refers to the main town on the island. The tree occurs in the coastal zone that stretches from Alaska through British Columbia, Washington and Oregon, down as far as northern California.

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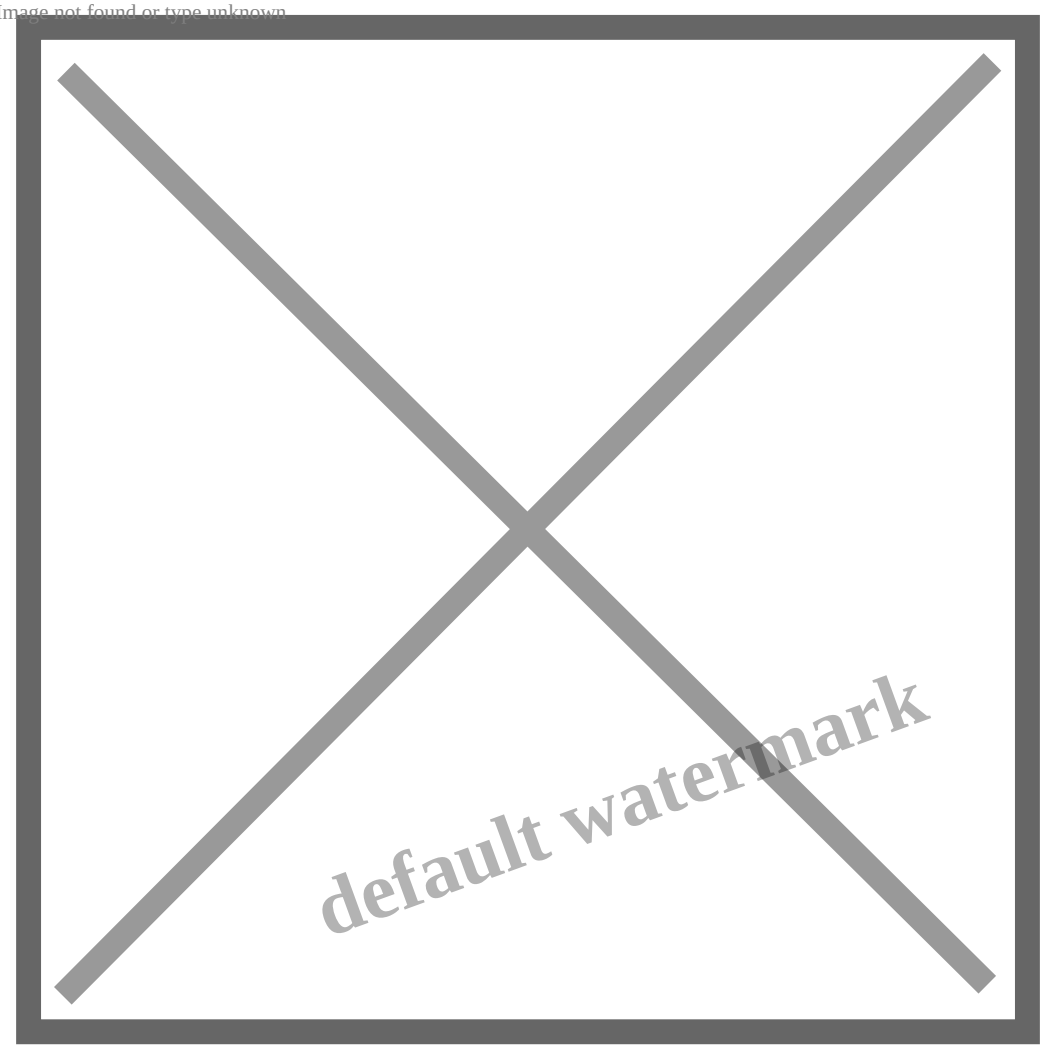

Distribution of Sitka Spruce. Source: Alexrk2 – Eigenes Werk (own work), SRTM30 V2, National Atlas of the United States, CC BY-SA 3.0

The forests in which Sitka grows contain an impressive selection of trees, including some of the tallest species in the world. We've encountered Coastal Redwoods and Douglas Firs in earlier posts. These species and Sitka can grow to over 90m tall – the tallest existing Sitka Spruce is just over 100m. Old growth forests in the Pacific Northwest are breathtakingly spectacular – serene groves of huge trees towering over moist forest floors festooned in mosses and understory plants.

Twilight, vampires and trees

Author Stephanie Meyer chose the town of Forks, Washington as the setting for her Twilight series of novels. Forks is one of the rainiest places in the US and doesn't have a lot of sunny days. Ideal vampire habitat. Twilight is a series of fantasy romance novels that follow the later teen years of Bella Swan, a girl who moves to Forks from Arizona and falls in love with a 104-year-old vampire named Edward Cullen.

Published between 2005 and 2008, the books were read avidly by my daughter, who was the same age as Bella at the time. And the books obviously hit a chord with that age group and others, becoming

bestsellers and being quickly adapted into a series of hit movies.

There's a lot of teenage angst intertwined with conflicts among vampire groups, shape-shifting wolves and many other elements. And, at various times, a lot of trees. Set as it is in the Olympic Peninsula of Washington, it's in the heart of the Pacific Northwest where it rains a lot and big trees reach for the sky.

Interestingly though, although the story unfolds mostly around Forks, very little of the movie was filmed there. Scenes where the main characters run through forests or climb big trees were mostly filmed in Oregon or elsewhere in Washington. Why? Because there are few big tall trees around Forks any more. They've all been logged out and you have to get into places like the Hoh Rainforest in the Olympic National Park to find the kinds of trees depicted in the movie.

> *Twilight -Edward and Bella Climb The Tree Scene, 2008 The tree climbed by Edward and Bella isn't a Sitka Spruce – the foliage would have been far too spikey to allow them to move about like that.*

Twilight and Timber Wars

Before becoming famous as the setting for the Twilight novels, the town of Forks once proclaimed itself the "Logging Capital of the World".

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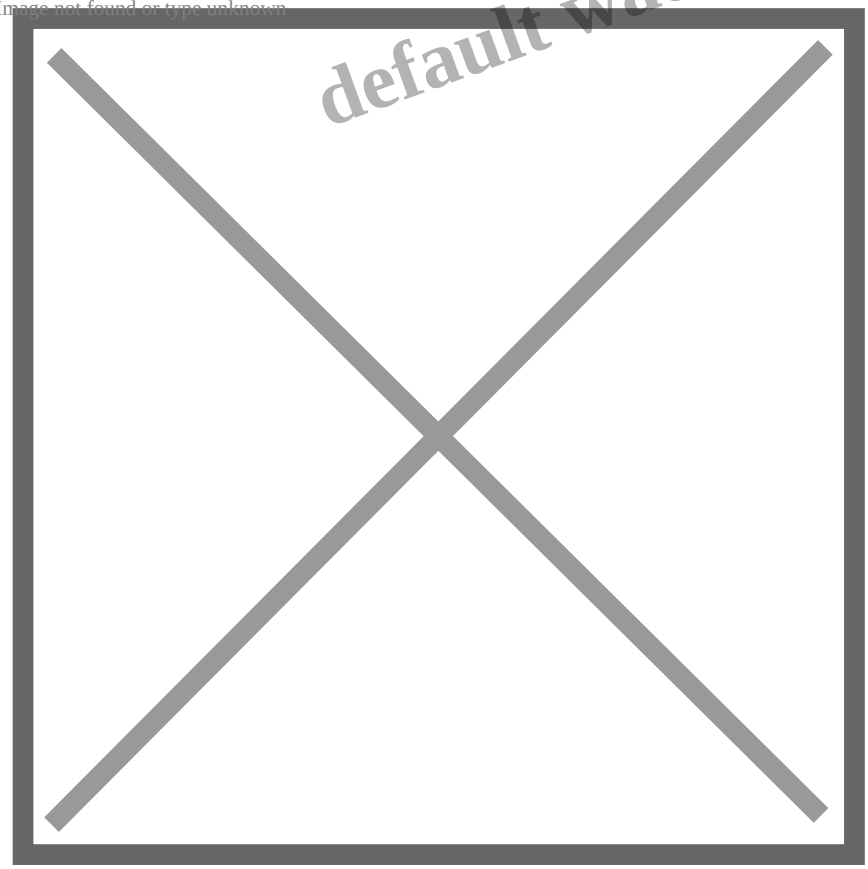

Source: Historylink

Just as Stephanie Meyer chose Forks as the setting for Twilight, a decade earlier journalist William

Dietrich had used the town as the focus for another, rather different, book, "*The Final Forest*". Subtitled "*The Battle for the Last Great Trees of the Pacific Northwest*", Dietrich's book covered what became known as the Timber Wars – the social, political, and scientific struggle during the 1980s and 90s over the ancient forests of the Pacific Northwest. Unlike "*Shades of Green*", it takes a balanced look at the issue, bringing voices in from all the various players.

In the preface to the 2011 updated version of "*The Final Forest*", Dietrich made light of the fact that his original book had only sold a tiny fraction of the number of copies that the Twilight books sold.

> *"By the time of Twilight's triumph, The Final Forest had sold about 36,000 copies. When Twilight sequel New Moon set first-day sales records, Meyer sold more books in twenty minutes than I'd sold of The Final Forest in almost twenty years."*

Nevertheless, sales of *The Final Forest* were pretty respectable, reflecting the interest swirling around the issues surrounding forest management and conservation.

Trouble in 't forest

The Timber Wars of the 1980s and 90s were not the first conflicts in the forests where Sitka grows, and they were also not the last. Concerns about ever more rapacious timber cutting were voiced as early as the late 1800s, when new technologies allowed faster and more comprehensive logging to take place. On the forestry side, some saw that the increasing level of logging would rapidly deplete the timber resource. On the conservation side, there were calls to preserve some of the original forests in their unlogged state.

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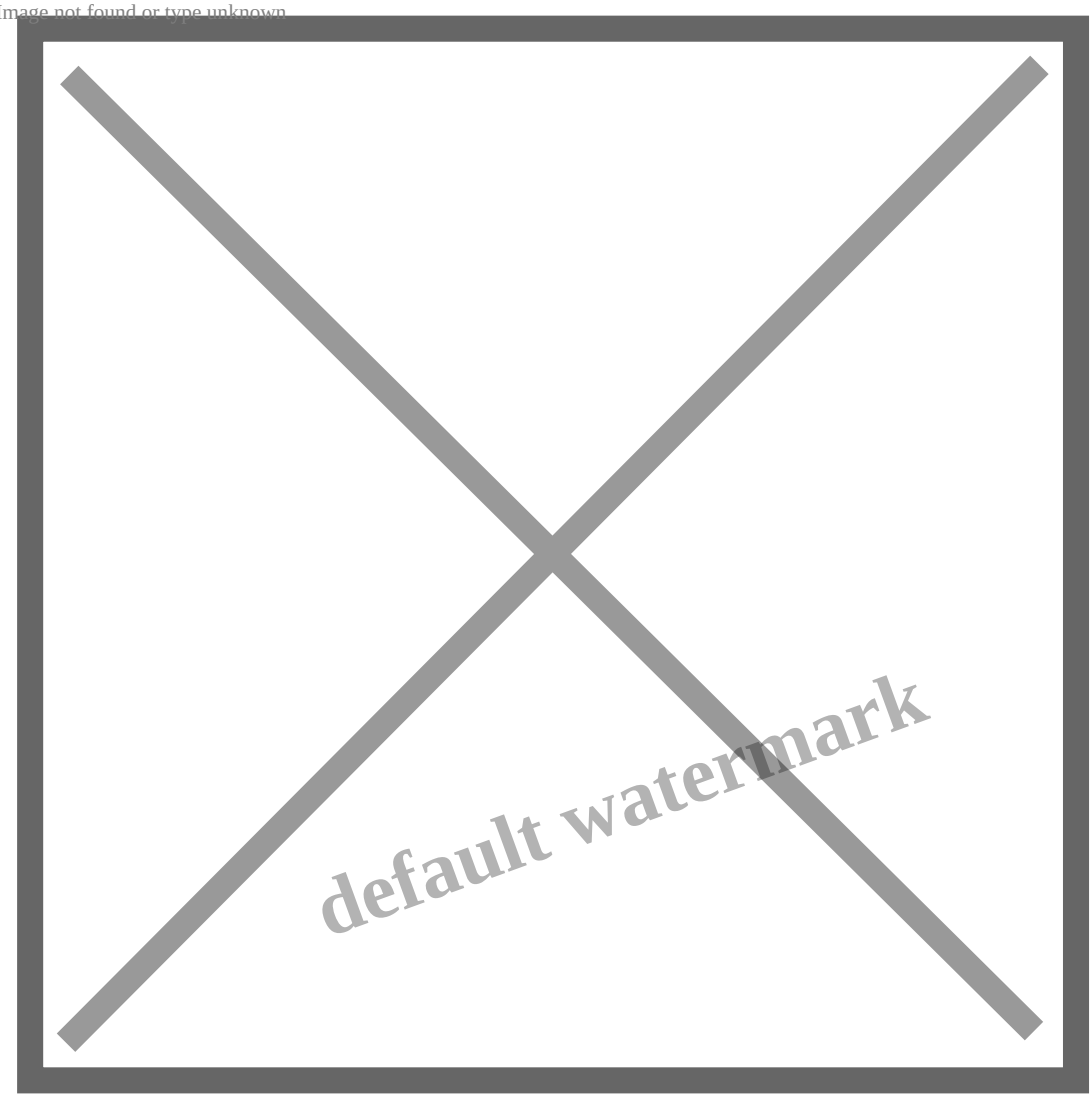

Near Cook's Camp, near Brennan, Washington, around 1905. Photo: courtesy MOHAI, PEMCO Webster and Stevens Collection, image number 1983.10.7394. For this and many other photos of early logging, go to Seattlepi.com

Fortunately, large areas of forest were taken over by the newly formed Forest Service, and National Parks were created where no logging could take place. But large areas of old growth forests were left out of the preserved areas, and logging of old growth continued apace.

Tensions between logging and conservation interests weren't the only source of conflict in the forests. Timber companies focused on making as much money as possible and made their employees work long hours for little pay. Workers organised and unions instigated a variety of industrial actions including strikes in the early 1900s.

Johnny Cash – The Timber Man 1975

Conflicts between workers and timber companies and between loggers and conservationists continued through the 20th century. The Olympic National Park, near to Forks, was declared in 1938 and subsequently added to. However, the surrounding forests, including in the National Forests, continued to be heavily logged. This scenario was replicated across Washington, Oregon and northern California,

and calls for reduced logging and more protected areas increased.

Increasing evidence pointed to the adverse effects of broadscale logging not just on the forest and its inhabitants but also on water flows and soil erosion. A central learning from ecology is that things are interconnected: alter one part of the system and changes ripple through other parts.

The owl

Things came to a head in an unusual way – because of an owl. The Endangered Species Act was passed in the US in 1973 as a mechanism for protecting threatened species from extinction. Species listed under the act are protected under federal law, meaning that measures have to be taken to minimise the threats to those species. In other words, when a species listed under the Act, a series of consequences kick in regarding the regulation of activities that affect the species.

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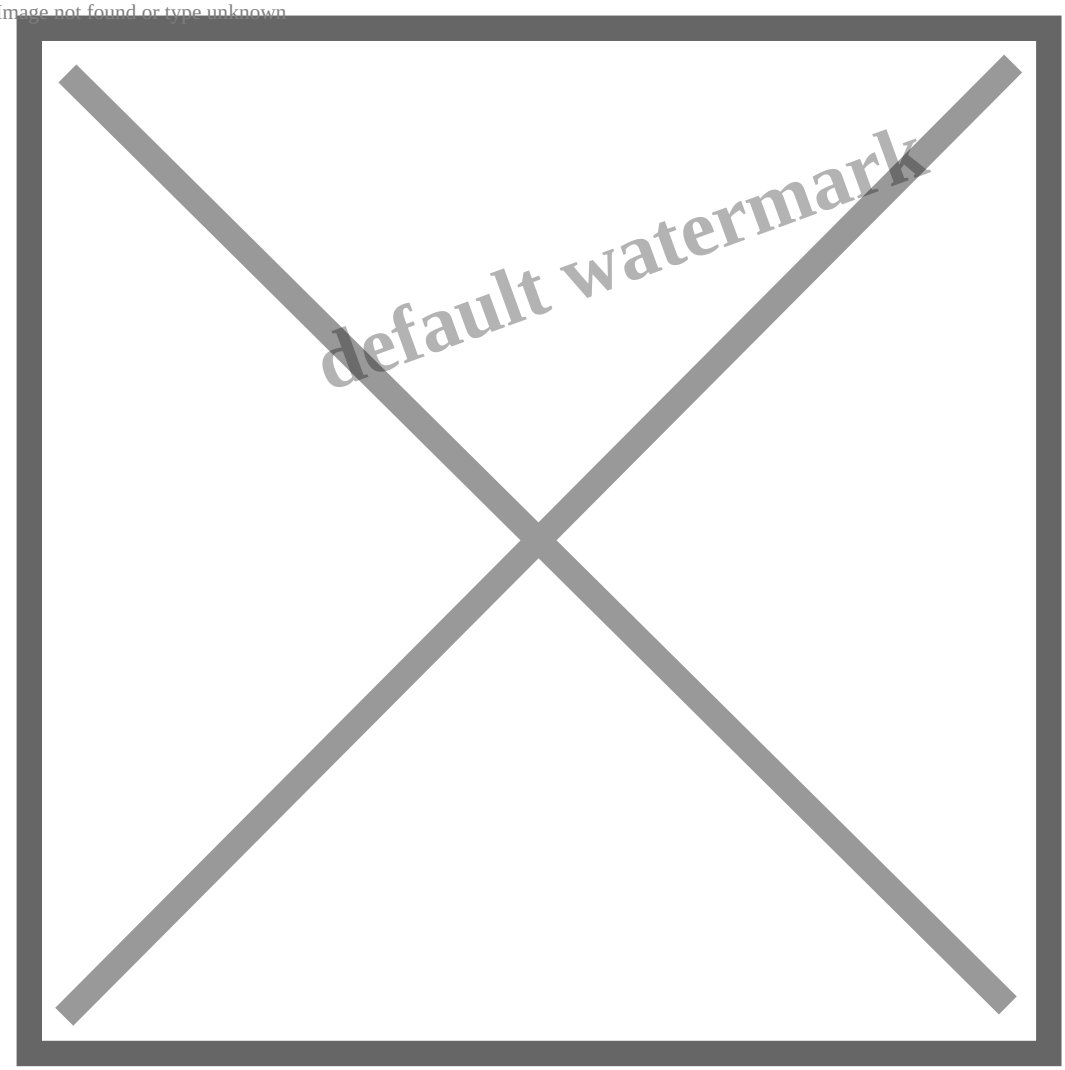

Northern Spotted Owl. Photo by Chris Warren

The Northern Spotted Owl lives in the forests of the Pacific Northwest, and relies on large tracts of old growth forest for habitat. Logging mature forest effectively reduces and fragments its habitat. It was listed under the Endangered Species Act in 1990, immediately triggering a halt to logging over large

areas. The Timber Industry went ballistic, timber workers saw their livelihoods threatened, and a real bunfight developed. The conflict was cast as “owls versus jobs” and loggers versus conservationists. Things in places like Forks got pretty heated – the subject matter of “*The Final Forest*”. President Bill Clinton got personally involved in trying to sort out the dispute.

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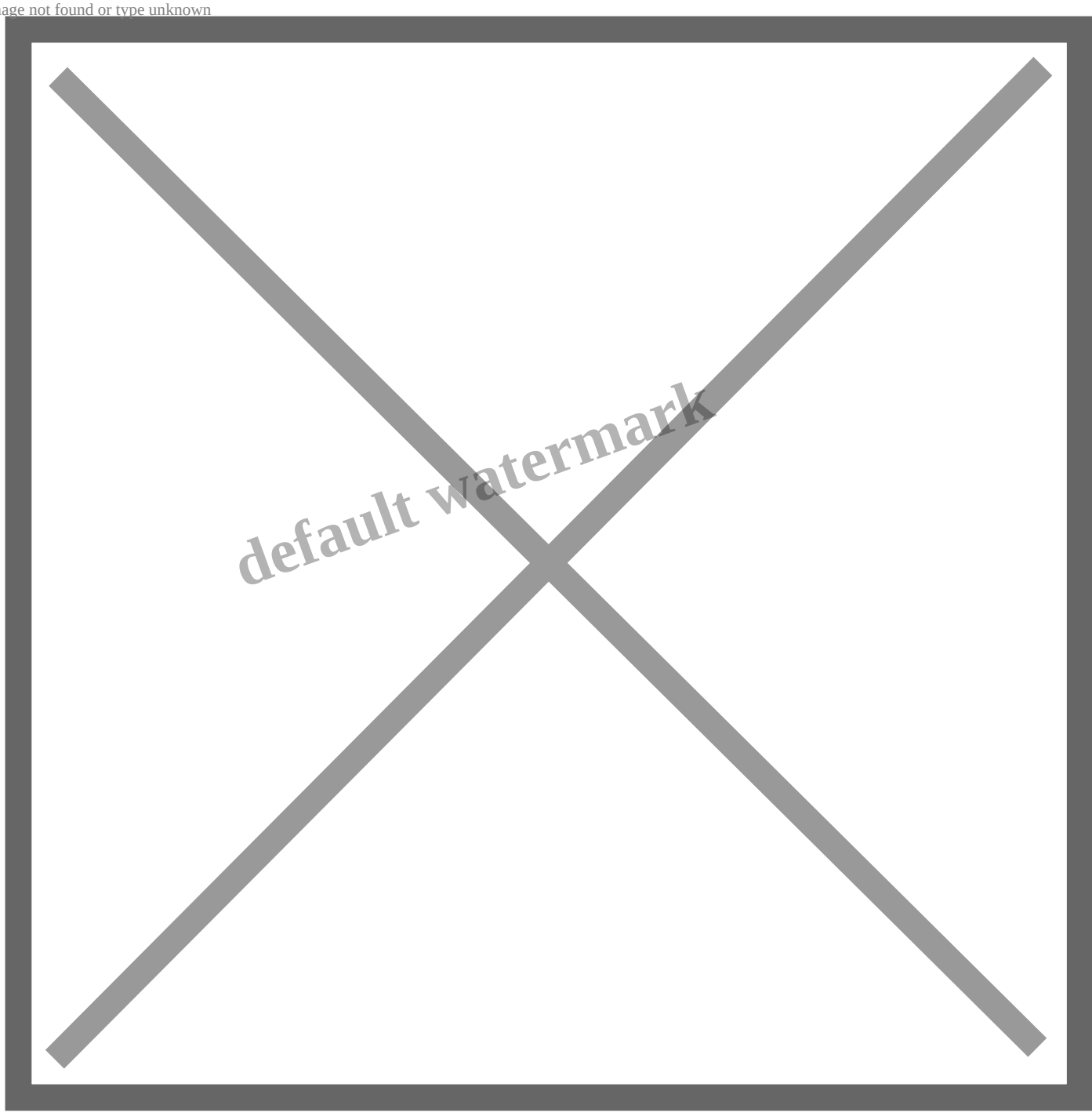

Source: Center for the Study of the Pacific Northwest

Simmering strife

Lots has been written about this period, and the Timber Wars are the subject of an excellent series of podcasts put out in August 2023 by Oregon Public Broadcasting. The fact that the Timber Wars still attract this degree of interest indicates that the issues are still relevant today. In fact, it could be argued that they've not really gone away even now.

The protests and conflict certainly continued through the 1990s and into the 2000s. While Edward and Bella spent a few romantic moments up a tree in the Twilight movie, many protesters spent much longer times up trees, "tree-sitting" to prevent their logging. Some stays were epic. In December 1997, 23 year old Julia Butterfly Hill joined activists protesting against logging actions of the Pacific Lumber Company in northern California. She went up a giant 1500-year-old redwood tree named Luna with the intention of staying up there for 8 days or so. The 8 days stretched out to 738 – just over 2 years before she came down again.

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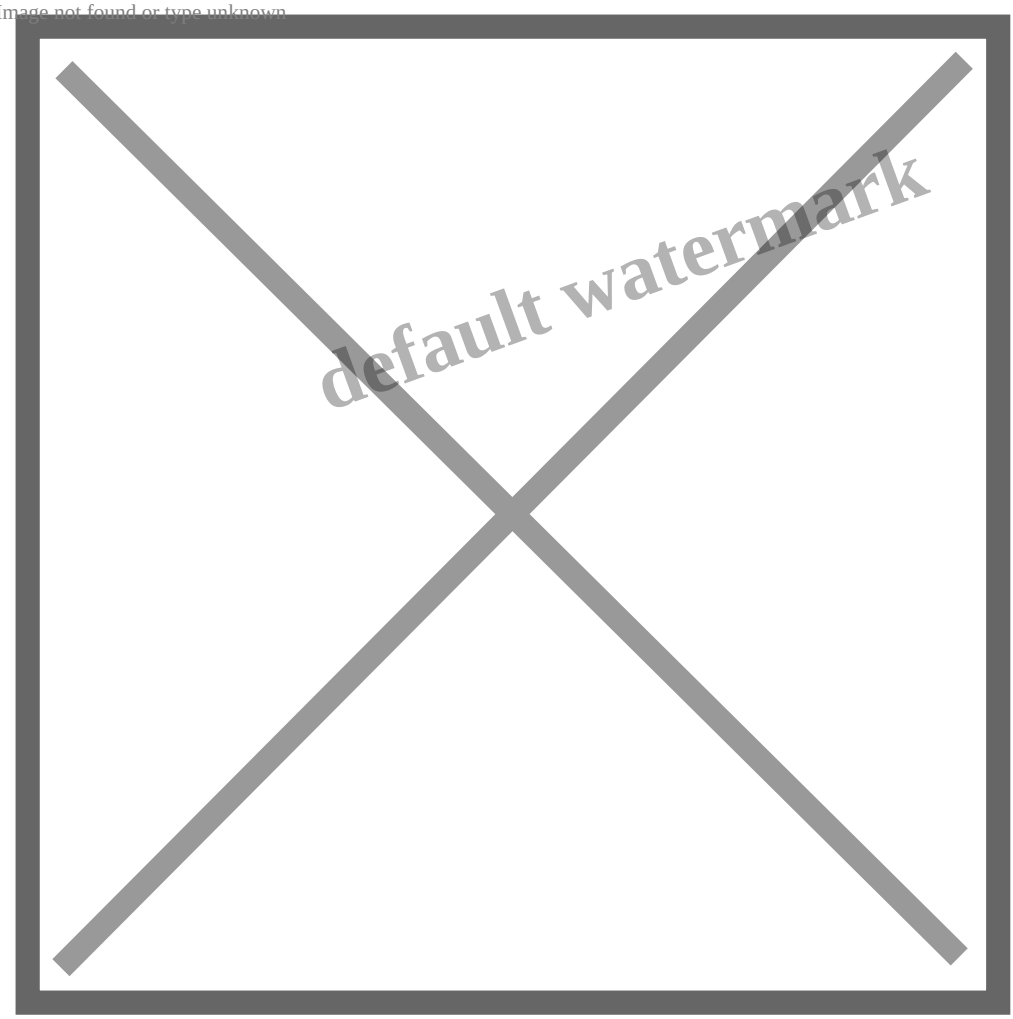

Julia Butterfly Hill at the top of Luna, with the Pacific Lumber Company in the background. Source: Orato

It's been pointed out that the owl and conservationists had relatively little effect on logging jobsbecause jobs had already declined dramatically in the forests – due mostly to increased mechanisationand declining availability of timber. Indeed, some argue that the loggers and conservationists reallyboth had the same adversary – namely the timber companies.

Things might have gone differently if they had found a way towards cooperation rather than conflict – something that fortunately seems to be happening more today. Increasingly, there's also recognition that it's not just old growth that matters, but the forest as a whole – managing and restoring logged areas is an important part of achieving good conservation outcomes.

That's not always an easy task, given that logging companies trend towards shorter rotations, not giving secondary forests the chance to grow bigger trees. Much the same story as the Sitka plantations in Scotland. And logging in old-growth forests continues and remains an issue of concern to many – and once again the President is involved in trying to find solutions.

North of the border

The story of the forests where Sitka grows is pretty much the same over the border in Canada. The decline of old growth forests in BC was touched on in an earlier post, focusing on Vancouver Island, a ferry ride away from the Olympic Peninsula where Forks is found. Flying over Vancouver Island, you see the same moth-eaten landscapes where the ancient forests have been clear cut and fragmented into patchworks of disturbed land.

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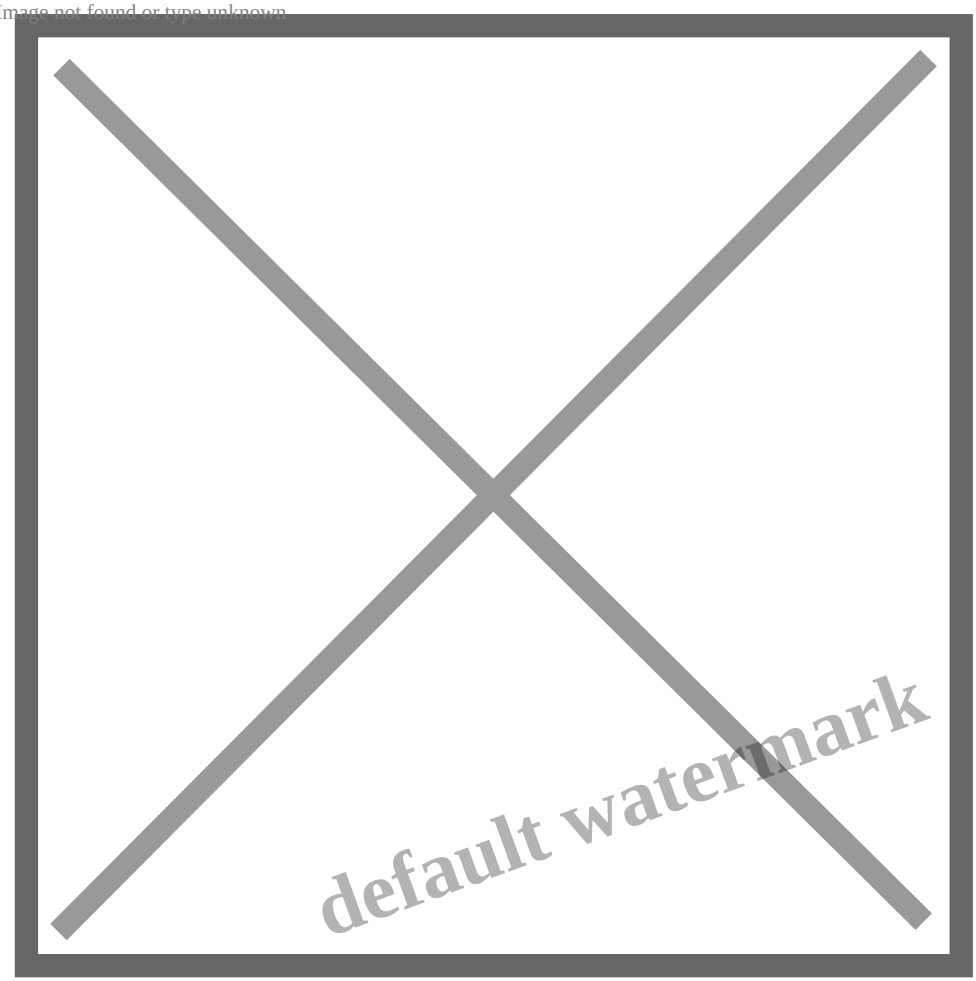

Flying over Vancouver Island and coastal Washington and Oregon shows the impacts of clearcut logging.

Mirroring events in the US, dramatic political protests erupted in 1993 over logging in Clayoquot Sound in British Columbia. These were some of the largest acts of civil disobedience in Canadian history, with over 800 arrests.

A report published in 1992 by the BC Ministry of Forests had this to say:

> *"Members of the public, public interest groups, professional resource managers and representatives of industry have expressed increasing concern about management of old growth forests in British Columbia. Not only does the forest industry depend heavily on old growth for its current wood supply, but many new demands are being placed on the remaining old growth to satisfy a broad range of forest values. In parts of the province, meanwhile, opportunities to reserve representative samples of old growth are dwindling rapidly (emphasis added). These pressures are leading to increased instances of conflict among supporters of competing land uses."*

This is quoted in the Foreword of a 2020 report "A NEW FUTURE FOR OLD FORESTS", which goes on to say:

> *"Although many subsequent measures were taken under the auspices of land-use planning and the forest practices code (some of which carried forward to the current legislation), many critical aspects of the strategy laid out in that report were either discarded or only partly implemented. Had that strategy been fully implemented, we would likely not be facing the challenges around old growth to the extent we are today."*

Large tracts of forest were incorporated into the Great Bear Rainforest by the Government of British Columbia in February 2016. The area covers 32,000 square kilometers, stretching along the BC coast from north of Vancouver Island to the Alaskan border. An agreement was reached to permanently protect 85% of the remaining old-growth forest from industrial logging.

Khutzeymateen, north of Prince Rupert BC, within the Great Bear Rainforest

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Khutzeymateen, north of Prince Rupert BC, within the Great Bear Rainforest

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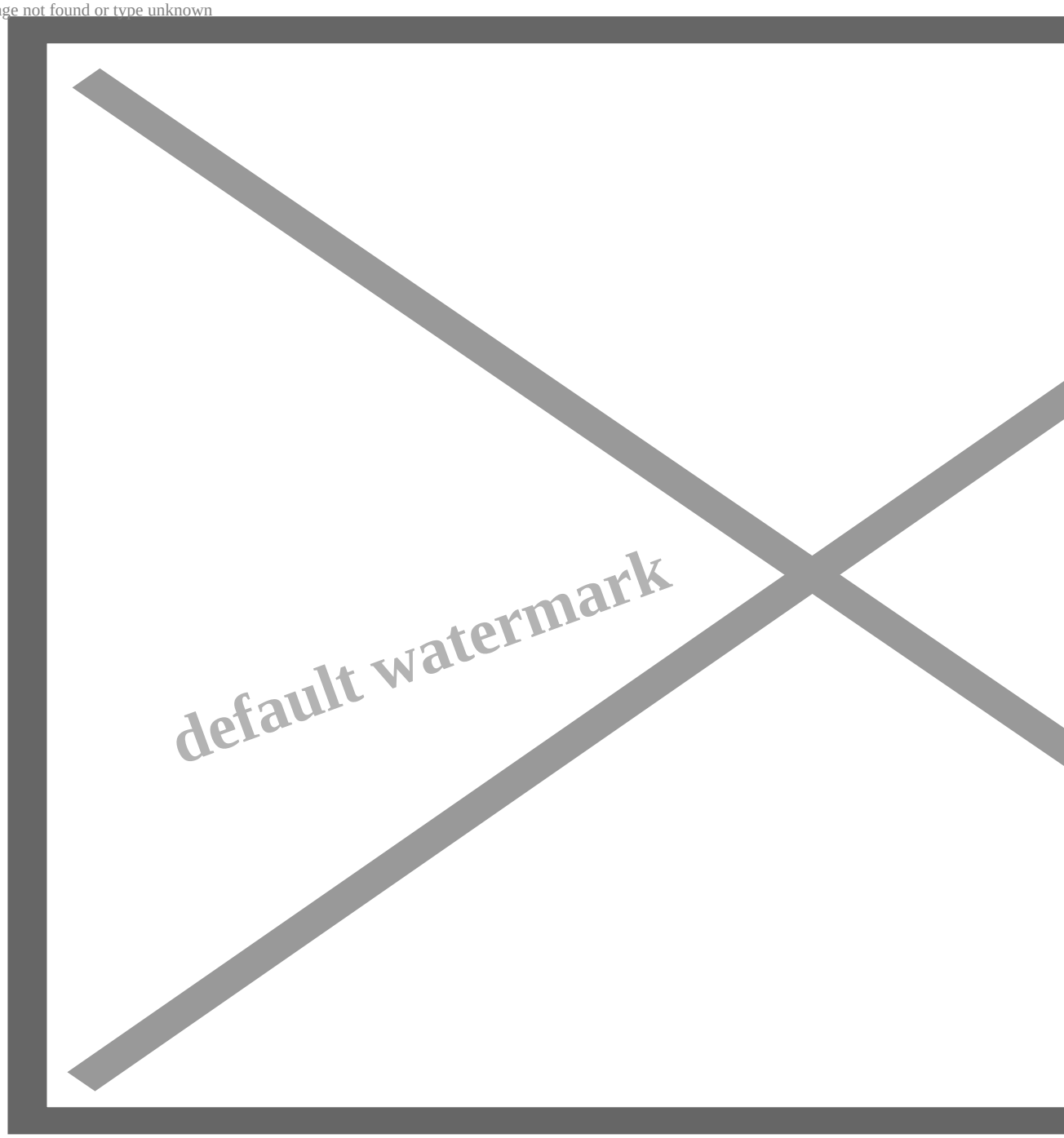

Grizzly Bears in the Khutzeymateen

Still, people remain rightly sceptical about government programs that promise a lot and deliver little.We have seen plenty of those in Australia too. The 2020 report lays out the need for a changedparadigm in how forests in BC are managed, and a program is now underway to implement some ofthe recommendations. The effects of indiscriminate logging remain obvious in BC landscapes, nowalso being affected by altered fire regimes and pests. Protests against old growth logging continue.And the Northern Spotted Owl is all but extinct in BC. But hopeful signs remain, particularly in First Nations approaches to developing logging strategies that preserve old-growth and avoid clearcutting while still providing wealth and abundance.

There's a short video on "The War for the Woods" from CBC that you can watch here.

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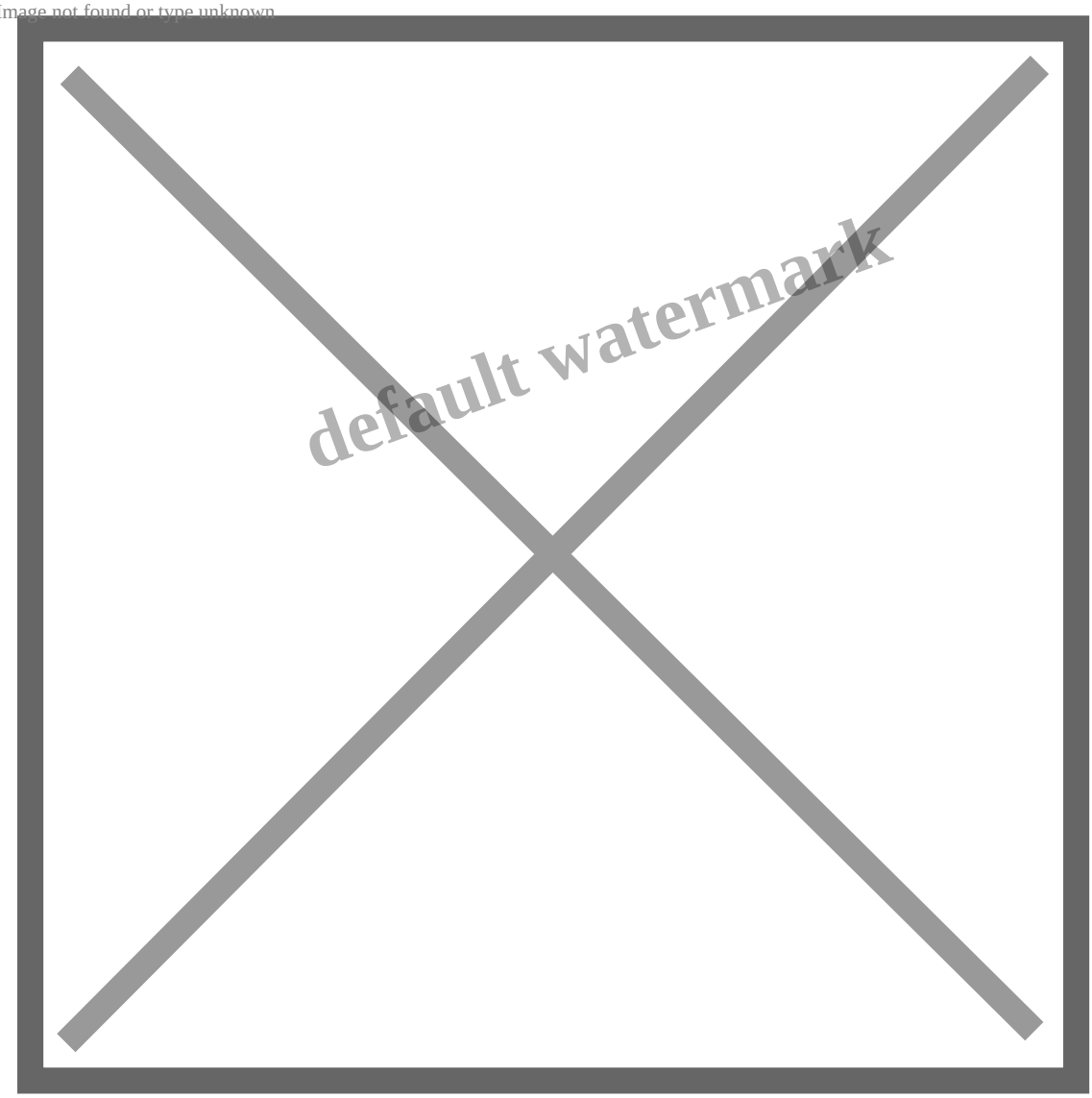

More than 220 people were arrested at blockades near Port Renfrew on Vancouver Island in June 2021. Source: Times Colonist

And in Alaska..

Travel through the Inside Passage of Southeast Alaska, and you travel through the Tongass. More or less adjacent to the Great Bear Rainforest, the Tongass National Forest is the largest coastal temperate rain forest in the world and covers 68,000 square kilometers.

Inside Passage, Alaska

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Inside Passage, Alaska

Another excellent book tells the story of the Tongass. Katie Durban's 2005 "Tongass: Pulp Politics and the Fight for Alaska Rain Forest

" is described as "*a story by turns dismaying and inspiring, of greed, courage, bare-knuckles politics, and the fate of a remote, wild, beautiful land*." As with "*The Final Forest*", this book is notable for its even-handed treatment of all the protagonists in a complex story. As one review put it:

"*Her account of environmental policy and politics is familiar and important, as is the discussion of federal resource policy and agency relations with the pulp industry. But more valuable is Durbin's sympathetic treatment of the people involved — Alaska Natives, grassroots environmentalists, mill workers, loggers, fishers, recreationists, lobbyists, and politicians. She ably considers the social implications of environmental policies and carefully delineates the diverse interest groups affected by Tongass timber politics. The human drama adds significant perspective to the plight of the Tongass forest.*"

Remoteness and difficult access meant that the Tongass was largely untouched until the 1950s, apart from small-scale local timber harvest on coastal and lowland areas. Then, the U.S. government encouraged two pulp companies to set up mills in Southeast Alaska. The mills in Ketchikan and Sitka brought jobs to a sparsely settled region but also created a near-feral timber industry that ate indiscriminately into the forest, destroying critical fish and wildlife habitat while decimating the old growth. The industry also broke labour unions, and controlled politicians and the U.S. Forest Service.

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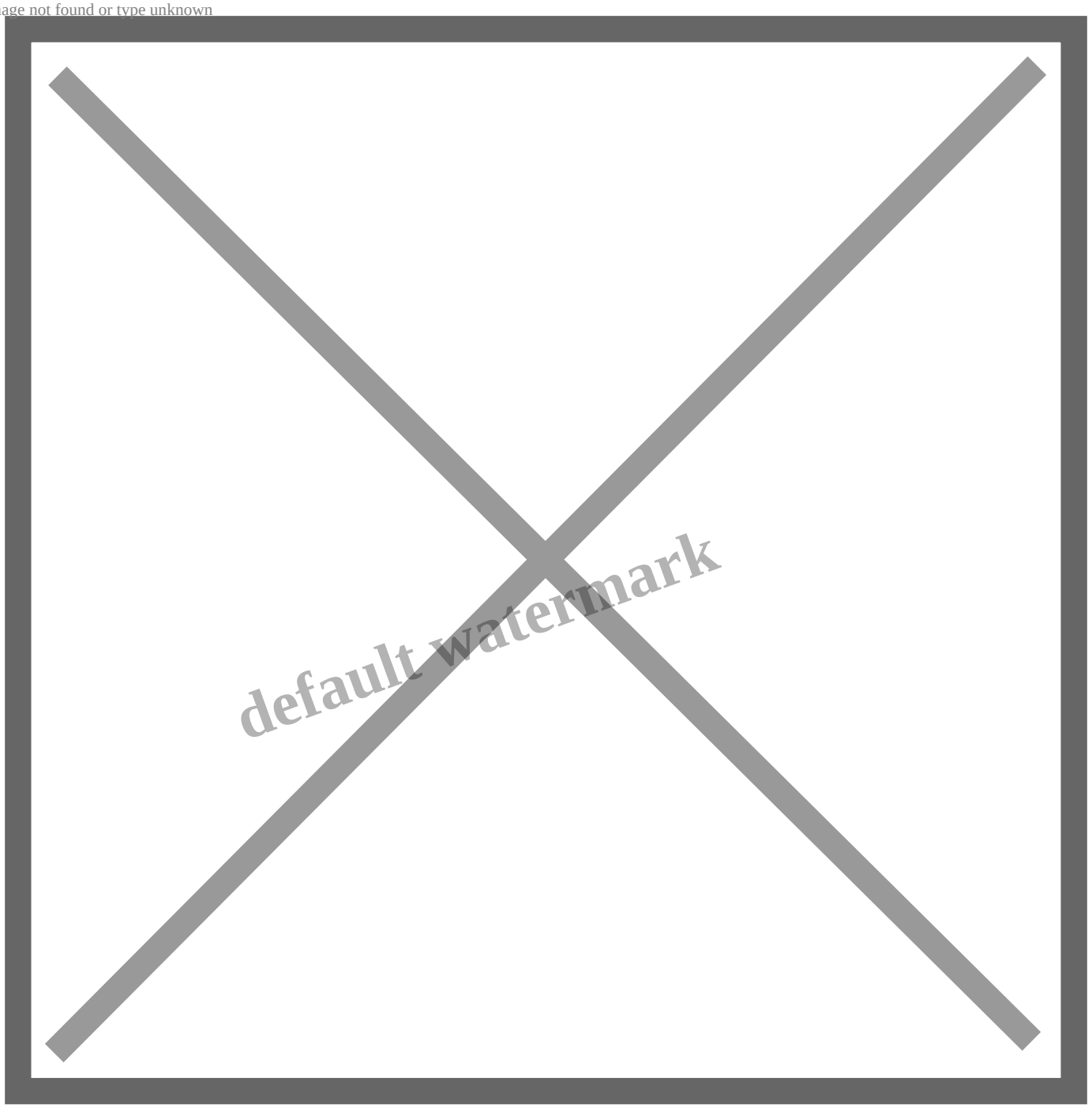

Clearfelling in the Tongass

The local Tlingit and Haida peoples saw their traditional lands being eaten into. But at the same time, Native American corporations became complicit in the forest's destruction. In 1980, Southeast Alaska's thirteen Native corporations began logging the prime timber conveyed to them from the Tongass National Forest under the Alaska Native Claims Settlement Act. Katie Durban commented that "*An era of timber mining even more destructive than the logging on the Tongass commenced on Native corporation lands*." We'll hear more about this in the next post.

A national campaign, led by grassroots environmentalists, was waged in the late 1900s to bring sanity

and sustainability to management of the Tongass. At the same time, cruise ship tourism increased dramatically on the Inside Passage, and proposals were bandied about to build systems of roads and bridges to link remote communities. And to open vast roadless areas to logging.

The swings in policy regarding logging and roads in the Tongass continue to this day. The Clinton administration passed legislation in 2001 preventing new roads being built in currently roadless areas in the Tongass. This was overturned by the Bush administration, but reinstated in 2006. In the dying days of the Trump administration, the federal administration set about stripping protections established in 2001 from a large area of the Tongass. These protections were then reinstated by the Biden administration in early 2023. Biden had also indicated an intent to end old growth logging in the Tongass.

Clearly the Tongass remains contested land. And Sitka Spruce continues to be one of the main tree species at the centre of this contest.

Summing up…

As we've seen, Sitka Spruce provides conundrums for policy and management wherever it is found. It's at the centre of different mindsets and perspectives about how humans use the land and its non-human inhabitants. Are forests to be left as awe-inspiring natural treasures, or exploited for what they provide. Are landscapes to be tended carefully as they are or transformed, often as a result of corporate greed? Does profit come before people (and owls)?

In Scotland, past forestry practices have created monoculture plantations that some folks love and some folks hate. In the wilds of Alaska, policy flip-flops between exploitation and protection of remaining tracts of old-growth, and Native American corporations contradict the stereotypes of caring for the land.

In the next post, we'll look at where guitars and guitar makers fit in to all of this.

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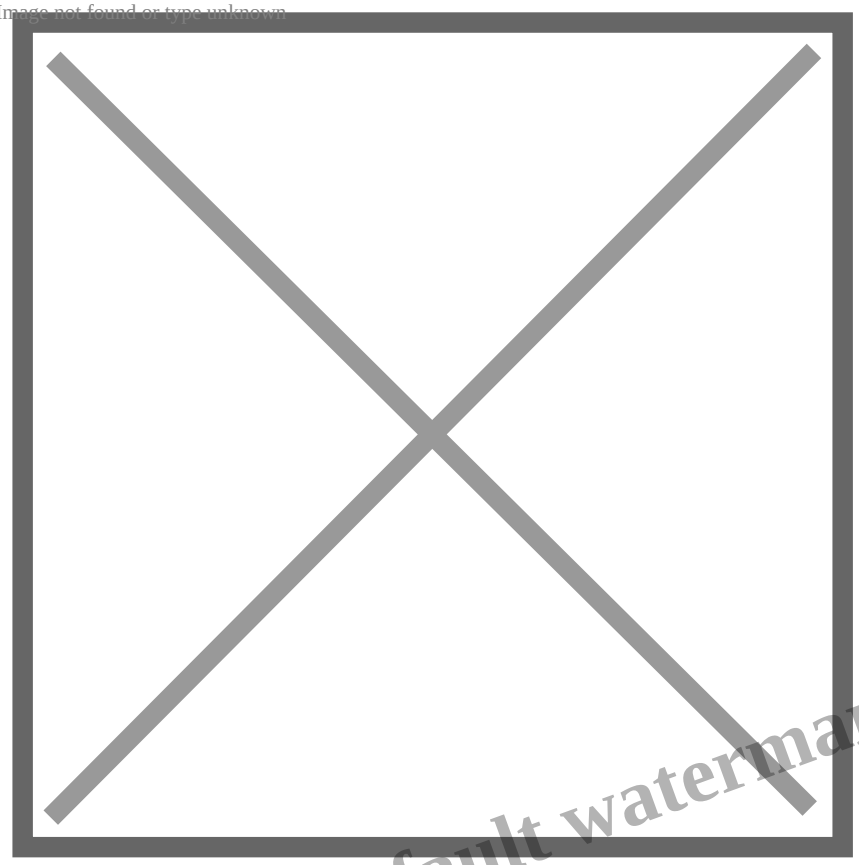

Credit: Alan 'Blind Owl' Wilson Facebook Page

Work on this post began while undertaking a Writing Residency at the Rockefeller Bellagio Center. I am deeply grateful to the Rockefeller Foundation for providing me with this opportunity – and especially for keeping the opportunity open despite its initial cancellation due to COVID. I thank my wife Gillian, my fellow residents, and Pilar, Alice and all the Center staff for making the residency such an amazing experience.

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1. Uncategorized

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