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the Forest Steward

Volume 9, Number 2

Collective knowledge inspires more learning and positive impacts.

A canopy gap as part of the Managed Old-Growth Silviculture Study in Northern Wisconsin.



Around the Bend. Photo by Leah Swann

**Forest Stewards
Guild**

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Willamette National Forest. Fire crews overlooking the Steeple Fire. Credit: R. Barbosa

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The Forest Steward magazine highlights the work and contributions of Guild members on the landscape, in policy, and in the societal fabric that shapes our lived relationships with forests. This edition features written works from Guild members. One member also shares his account of what he has learned by engaging in ages-old rituals on land and partnering with Indigenous community members who have taught us so much about the broader tending of these relationships.

Many Guild member authors, researchers, and practitioners not mentioned here also contribute. Guild publications regarding ash management, wildfire management policy, and so much more are growing in number each year: ForestStewardsGuild.org/research-and-management-publications/. The best way to learn from our Guild community is to gather the community. As we approach our Guild's 30th year anniversary, we encourage you all to host and attend events. Continue conversations you read about in these articles in the woods or around the table. You don't

have to be a career silviculturist to host a Guild Gathering or to dig into topics you care about and support with other members.

If you are inspired by what's highlighted here, in previous editions, and in our *Across the Landscape* e-newsletter, please gather your fellow Guild members and others for a 30th anniversary celebration of our impact together. It could be lectures and field tours, or it can be morning coffee or a book club. Whatever works for you! Of course, you'll be invited to join events the Guild hosts too, but we can't host enough gatherings to celebrate our members without you!

We hope you enjoy these highlights and many more to come, and that you'll join Guild members to continue asking the tough questions, finding innovative solutions, and inspiring each other. We'll spread the word and are so honored you are here in this community.

The Pacific Northwest Handbook of Ecological Forestry

Authors: Kirk Hanson and Seth Zuckerman **Reviewer:** Mark Miller, retired consulting forester and Guild member

This new book fills a needed niche as a concise, comprehensive, and contemporary treatise on ecological forestry for the Northwest.

As the title implies, the authors encourage the reader to acquire their own forestland, for the attendant habitat, financial, recreational, and spiritual values and as “as one of the greatest expressions of earth stewardship.” It goes on to explain just how this is done, from assessing watershed, wildlife, timber, and forest health conditions, and details the attendant stewardship tasks, from forest inventory and management planning to planting, thinning, harvesting, and habitat enhancement. The book’s full-circle approach touches on everything from climate change adaptation and fire risk reduction to trail building, non-timber forest products, carbon credits, easements, certification, and succession planning. It’s not a complete do-it-yourself manual for all these complex subjects, but provides an excellent introduction to each, a comprehensive suite of additional resources, and suggestions for getting technical input. Its stated focus is forests of Washington and Oregon, but the approach can easily be applied from British Columbia to Northern California, Idaho, Montana, and beyond.

The book is for a lay audience and is written in an accessible, folksy style. Technical terms are described simply. Clear descriptions, simple hacks, and rules of thumb make even complex tasks like forest inventory approachable for one without a professional forestry background. Its advice is generally solid and practical. They encourage a hands-on, do-it-yourself approach, which while commendable, is too easy to over-simplify in a book. Risks, complexities, and downsides are not explained sufficiently. Fortunately, the Guild community of professional stewards is here to help landowners navigate these.

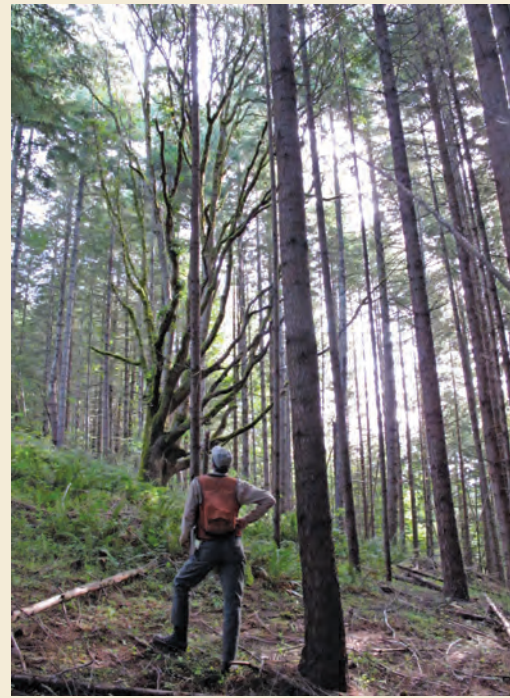
They correctly identify points where professional advice should be obtained, and the values of working with a consulting forester. They accurately portray the varied consequences of a no-management “let nature take its course” approach, for stand resilience, forest health, and fire and climate risk.

Additional strengths include a good introduction to ecological forestry, all it entails, and why it matters. It enables landowners to get involved with forest inventory, management planning and a host of other stewardship practices, taking a pragmatic approach. For example, in discussing invasive weeds they cover their problems as well as ecological benefits and provide sound advice on control (“pick your battles”, and “be persistent ... and prepared to pay”).

However, from my perspective as a consulting forester recently retired from a career working with private forestland owners, I found a few shortcomings. Their view can be overly optimistic, as in the wherewithal required to purchase woodland, or the thresholds of acreage, volume, and timber quality required for a successful thinning harvest. Engaging private landowners is a delicate balance between offering empowering steps and solutions, while acknowledging the complexity of tasks, and dynamics of thinning and tree selection over time.

There is nuance required for success in many aspects of forest management, something that can only be gained from time in the woods and keen observation of cause and effect. They emphasize the value of engaging a consulting forester, which I think is key. There’s really no way a do-it-yourself method can be clear enough on the accompanying risks. A harvest is probably the most important thing to get right the first time, and not the best place for on-the-job learning.

The book remains an important contribution to the practice of ecological forestry in the Northwest, especially for individuals new to the approach or considering it for their own land. As Jerry Franklin writes in the Foreword, “Managing forests in ways that maintain their ecological integrity is more important in the twenty-first century than it has ever been. This book will help you do that.” As I reached the final pages, I reflected that the book is also a call to action — to recognize the reciprocal relationship we (should) have with forests, and to “put your boots on and get outside.”



Forester assessing forest structure. Photo by Mike Messier



Collecting accurate tree heights with a laser rangefinder. Photo by Bob Crum



Proud owners of a new family forest in Harlan Oregon. Photo by Mark Miller





Keeping New England’s forests forested, re-localizing wood production, and reducing consumption

Caitlin Littlefield & Tony D’Amato, adapted from a report by Caitlin Littlefield, Brian Donahue, Paul Catanzaro, David Foster, Anthony D’Amato, Kenneth Laustsen, and Brian Hall, available at <https://www.masswoods.org/illusion>

A white pine legacy tree (as indicated by the painted “L”) to be retained during the harvest as part of an ecological forestry treatment. Photo by Tony D’Amato

Forests support humans and non-humans alike in countless ways, as they have for thousands of years. It is therefore heartening to see a growing recognition of the importance of forests as the planet warms, as natural disasters intensify, as species disappear, and as our connections with nature and with one another fray.

Wood from our forests also remains a valuable resource we all rely upon and a key component of an emerging bioeconomy that can help mitigate climate change. However, in recent years, there have been calls to eliminate harvesting on substantial areas of New England’s forests—especially on state and federal lands—to maximize certain ecological values, particularly carbon storage. Expanding such wild forests, which yield irreplaceable benefits and yet cover less than 4% of the region today, is imperative. However, this strategy by itself will fail to provide the full suite of benefits we seek from our forests, here in New England and beyond.

If we reduce harvesting within a given region while maintaining high levels of wood consumption, we are merely shifting that wood production elsewhere. Because of this leakage, reduced cutting in one location may do little to decrease carbon dioxide in the atmosphere. Thus, the very real need to protect more wild forests must be matched by the equally real need for protecting actively managed forests and improving the standard of production to address our wood demands while safeguarding all other forest benefits. And that protection is crucial: roughly 30,000 acres of New England’s forests are permanently converted each year.

Production-consumption mismatch
In the face of this forest loss and mounting pressures to curtail harvesting, we sought to quantify the discrepancies between wood production and consumption across New England’s states and explore a vision for remedying that imbalance.

We used data from the US Forest Service to quantify New England’s wood production and consumption in 2020. (Details of our methods are provided in the original report). We asked, Is New England producing as much wood as the region consumes? In a word, no. Today, New England produces about three-quarters of the wood it consumes (Fig 1.). That may not seem too unbalanced, but the disparities within the region are notable: collectively, Massachusetts, Connecticut, and Rhode Island produce a mere 7% of the wood volume consumed therein, despite being nearly two-thirds forested. Together, Vermont and New Hampshire produce a bit more than they consume. Finally, Maine produces substantially more than it consumes: upwards of 325%. In fact, 70% of New England’s production comes from Maine, while 70% of the region’s consumption occurs in southern New England.

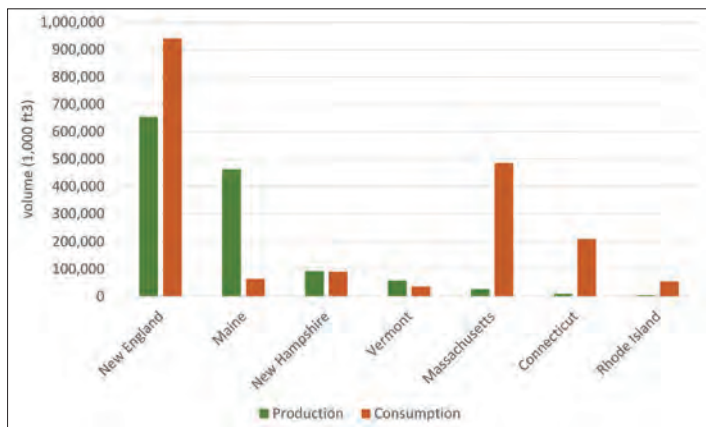
Figure 1

Fig. 1. Wood production and consumption in New England circa 2020, including lumber and pulp (but not fuelwood) and accounting for materials recovered from waste streams. More details in the full report.

For a region that is 80% forested, these disparities are striking. Most consumption occurs in the populous southern New England states, which is also where calls to curtail harvesting have been loudest. Meanwhile, northern New England—especially Maine—produces much of the region’s wood products. However, the long legacy of heavily extractive practices in parts of northern New England’s forest has come at a price: many areas are now poorly stocked from a harvestable tree perspective. This leaves fewer opportunities to support declining forest-dependent communities and economies. Conversely, while southern New England cannot produce all the wood it consumes, it does have the capacity to do far more. We are not opposed to responsible wood markets, but the forests of any place should contribute to addressing the place’s own needs proportional to their sustainable capacity.

Beyond New England

How does this compare to elsewhere in the US? We haven’t computed the net balance of wood production and consumption for states beyond New England, but a century ago, the chief of the Forest Service, William Greeley, did (Fig. 2). The patterns we observe today in New England were already evident in 1920, and that excess of consumption over production extended west into the Lake States. These discrepancies across the northern US were largely attributable to the tremendous amount of forest-clearing that had occurred by the 1920s relative to southern states and the Pacific Northwest. Even so, it is notable that some of the Great Plains states had relatively modest discrepancies compared to more heavily forested states.

At least in New England, these patterns have endured, suggesting they are deeply entrenched. But that should not deter us from reimagining what a re-localization and revitalization of wood production could look like, starting, first and foremost, with rigorous forest protection measures.

Protecting forests, reducing and re-orienting consumption, and expanding ecological forestry

We set forth an ambitious vision for 2060, described in three steps below, for addressing the production-consumption imbalances within New England and curtailing forest loss. (See the full report for further details).

Figure 2

Fig. 2. Production-consumption balances across the US, circa 1920. Source: Greeley W.B. 1925. *The relation of geography to timber supply. Economic Geography.* 1(1):1-14.

- 1. PROTECTING FORESTS.** We must permanently protect New England’s forest in a mosaic of passively managed wild areas (at least 10% of the entire landscape) surrounded by actively, ecologically managed forests, such that at least 70% of the entire landscape is maintained as forest.
- 2. REDUCING CONSUMPTION.** We must reduce our consumption of lumber and paper by 25% while meeting urgent housing needs, re-orienting consumption to more durable products, and enhancing recycling and reclamation.
- 3. EXPANDING ECOLOGICAL FORESTRY.** We must increase the acreage in ecological forest management and re-orient production towards lumber. Sustainably managing 20 million acres to produce 0.4 cords of wood per acre per year would allow New England to meet its needs as a region.

A vibrant future for our forests and communities

New England’s forests provide immense benefits simply by existing. However, we must reorient how we engage with our forests if we are to take responsibility for our consumption and rein in our reliance on other regions to feed our lifestyles. We do not have a holistic system in place to encourage superlative forest stewardship oriented around the common good. Rather, we have an entrenched system that rewards either piecemeal development or heavy cutting that maximizes short-term economic returns on industrial lands. Incentive programs have failed to engage a substantial segment of family forest owners in long-term stewardship. At the same time, an increasingly pervasive attitude holds that *no* management is best.

We agree that passive management is an ecologically sound approach; indeed, wild forests are a pillar of ecological forestry. However, these two dynamics—ongoing forest loss on the one hand, and mounting pressures to curtail all harvesting on the other—are only exacerbating ethical and ecological costs in a world where natural resource consumption is simply a fact of life.

Collectively, the steps we lay out are aimed at safeguarding the ecological values of New England’s forests while sustainably meeting our resource needs. Our intention is to be illustrative, not prescriptive. There are other ways we could imagine a vibrant future for our forest and communities, with the benefits we derive from the land widely and equitably shared. Determining how we achieve such a future is the next challenge we must confront.



Recalling blueberry landscapes: an exercise

By Lane Johnson, Research Forester, University of Minnesota Cloquet Forestry Center



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An autumn scene on a portion of the fire-maintained Moquah Barrens, Chequamegon National Forest, Wisconsin | All article photo credits to Lane Johnson

Blueberry Present

Mid-July is blueberry season in fire-shaped places of the Upper Great Lakes region. For me the blueberry harvest is a time to remember fruitful landscape conditions that were historically commonplace. As I pick, I better understand the many things fire suppression policy has taken away, and marvel at what fire restoration can return to us with the right inputs. Wild blueberry species in the Great Lakes region include lowbush (*Vaccinium angustifolium*) and velvetleaf (*Vaccinium myrtilloides*). They are fire-dependent perennials that thrive in low-fertility, drought-prone soils. Fire promotes berry production through fire fertilization, thermal pruning, and the reduction of native pests and weeds. Fruiting is most reliable on sites with canopy cover of 50% or less. Blueberry plants can gradually become the dominant or co-dominant ground cover in repeatedly burned sites. This knowledge has been generally understood by generations of Great Lakes fire stewards.

This July we drove to the Northwest Sands ecoregion in Wisconsin. Our route east on US Highway 2 through Poplar, Blueberry, and Brule was a fire history written in the names of old railroad stops. Eventually the pavement turned to sand and the wall of roadside trees fell away as we arrived at a fire-restored portion of the Moquah Barrens on the Chequamegon National Forest. This delightful landscape is a lush

carpet of green with blue fruit among scrub oak and scattered pines. Moquah, or the properly spelled Makwa, means “bear” in Ojibwemowin.

Blueberry Past

Blueberry landscapes were once commonplace in the Great Lakes region. My hillside neighborhood in Duluth, MN has views of a long barrier sandspit that separates the safe harbor of the St Louis River estuary from the steel blue waters of Lake Superior. In the 1860s an early Duluth merchant observed hundreds of Ojibwe women and children gathering blueberries on this pine-studded rib of sand. Over five hundred miles to the east, the earliest European accounts of the Upper Great Lakes region describe early-successional landscapes and a blueberry economy. Samuel de Champlain observed in 1615 three hundred Ottawas gathered along the shore of Georgian Bay, Lake Huron to harvest blueberries for their winter stores. The surveyors Foster and Whitney observed landscape conditions they attributed to the “fires of the Indians” during their 1851 survey of northern Wisconsin:

“...huckleberries and blueberries especially abound along the south shore of the lake [Lake Superior], on the sandy soil, under the shade of the red pines. Their fruit is much larger and sweeter, and borne in greater profusion than we had ever

seen it elsewhere. It is greedily eaten by [passenger] pigeons, robins, golden-winged woodpeckers, as well as by chance travelers along the shore.”

Away from the Great Lakes berries were also abundant. Henry Schoolcraft observed in July 1831 along the banks of the Namakagon River, part of today’s St Croix National Scenic Riverway:

“Both banks of the river are literally covered with ripe whortleberry [*Vaccinium* spp.] – large and delicious. The Indians feast on it. Thousands of bushels of fruit are gathered.”

The nutritional abundance and productivity within these fire-maintained systems was one outcome of traditional agroecological practices used to sustain Anishinaabe livelihoods. Elaine Fleming, a Leech Lake Ojibwe scholar and Elder, says “one of the myths created about Ojibwe people was that our people were foragers, that we were hunters, and that we lived a miserable existence. But they forget to write about our great knowledge of agriculture.” The Ojibwe, like other Indigenous groups in the Great Lakes, were sophisticated in their horticultural techniques, planned use of beneficial fire, and the harvest of wild game, ultimately shaping what became a culturally-maintained landscape mosaic. Gardens of corn, potatoes, pumpkins and beans were sometimes planted, but hunting

of healing, collaboration, and humility.

and berrying occupied the summer months. Fire-maintained lands promoted early successional habitat that favored nut and berry plants, and grasses for wildlife.

The Great Lakes Ojibwe developed expert-intuitive landscape models for locating blueberry habitats. Methods of tending, harvesting, preparing, and preserving blueberries are part of an evolving body of Indigenous Knowledge that informs Anishinaabeg ecocultural practices to present. An extensive rather than intensive approach to Indigenous wild blueberry production was key to reliable harvest.

Lands at the University of Minnesota Cloquet Forestry Center (CFC) were once a favorite berrying and hunting ground for the Fond du Lac Band of Ojibwe (FDL). The CFC lands within the FDL Reservation were described in FDL oral history as “not heavily timbered but regular blueberry country” prior to the cutover. In 1890, FDL families were reported to have harvested \$3,000 of blueberries (\$103k today), much of the harvest coming from fire-maintained sites on or near the Reservation. The berry quantities harvested a century ago are hard to imagine now due to the fire-suppressed landscape conditions of today. For example, in 1905 blueberry buyers purchased 2,500 bushels from FDL blueberry pickers. More far afield a 1901 newspaper article from present day Kenora, Ontario mentions “one hundred and sixty tons of Lake of the Woods blueberries shipped by railway to markets” with “only a quarter of the crop harvested because of the limited availability of pickers.” This level of abundance can only

be found in places consistently tended with fire.

Blueberry Futures

I’m sometimes asked, “Does the past really matter today?” Fire-dependent forest lands, like all ecosystems, are complex and time-lagged. The past is still present and hidden in plain sight – legible as fire-scars on long-lived red pine, as pyrogenic carbon in soil, and in the presence of grasses, sedges, and sun loving forbs drowning in accumulated litter and duff. Fire is the ecocultural process that has sustained fire-dependent ecosystems since time immemorial. People have brought fire into these systems, maintaining and expanding their ecological niche, as far back as the environmental record and Indigenous memory takes us.

Those of us who value and practice the tenets of ecological forestry have some of the knowledge and much of the responsibility to restore fire to fire-dependent places. Fire suppression policy has been and remains a tool of what Ojibwe historian Brenda Child calls “catastrophic dispossession” along with the “loss of crucial landscapes and valuable resources”. Fire restoration holds the potential of restorative justice, but it requires the unlearning of old-world forestry habits and the recognition that fire suppression continues to create havoc within our native landscapes and communities. In the Upper Great Lakes region, we need to disrupt the idea that a densely forested landscape is natural and inherently good. In many cases this requires actively managing against closed forest in favor of fire-shaped

conditions, from barrens and savannas to open woodlands. We need to facilitate the return of fire as a predator of trees. It requires placing greater value on the sun-loving vegetation that’s underfoot than the forest canopy that’s overhead. All the while we need to talk unapologetically about the beauty of fire-shaped places – all their ecological form, function, and potency as well as their cultural origins.

At the UMN Cloquet Forestry Center, the ecological and cultural memories of this portion of the FDL Reservation are being tapped to guide collaborative fire restoration. Each prescribed burn is conducted with the shared understanding that fire is an integral part of Upper Great Lakes ecosystems and a valuable means of achieving cross-cultural stewardship goals. Our ongoing work is made possible through collaboration with the Fond du Lac Band, Bureau of Indian Affairs, and The Nature Conservancy. Prescribed fire unit prep and burn planning expertise came from The Guild. Vegetation monitoring is coming from the Silva Lab within the UMN Department of Forest Resources. What was once an improbable prescribed fire effort is being realized through collaboration with a diverse mix of partners.

We have a long way to go for our fire-dependent lands and culture to recover from over a century of fire suppression policy. There’s endless work to do as fire restoration is not a single pulse of activity but a sustained effort and conversation between people and place. The fruits of such a collective effort will be sweet.



Wild lowbush blueberries can be bountiful in the fire-maintained landscapes of the Upper Great Lakes region. Blueberries have been an important food and medicine since time immemorial



A prescribed underburn in a 50 year old red pine woodland at the University of Minnesota Cloquet Forestry Center, May 14, 2024. The CFC is located on the reserved lands of the Fond du Lac Band of Lake Superior Ojibwe





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Novel challenges, community response

We continue to face new challenges and see innovative new solutions to support healthy forests. Between challenge and innovation are rich conversations, robust research, keen observations, and incredible dedication among Forest Stewards Guild members, partners, and other supporters. Policy work to clarify the role of mature and old growth forest characteristics, research to help build understanding around forest management and how it supports healthy forests, and tireless efforts to empower underserved landowners, next generation stewards, and those whose voices and talents have not been historically recognized in our field are just a few examples. The Guild community is building the future on forested landscapes. Thank you for being here!

Our community of Lifetime Members is growing. Even better, overall membership is growing. You bring our vision of ecologically, economically, and socially responsible forestry closer every day.

Thank you for keeping your membership current, spreading the word about the Guild, and sharing your stories and efforts. We are so excited to continue to support you and gather all over the country!

Visit often: ForestStewardsGuild.org

All photos submitted by article authors or the Forest Stewards Guild unless otherwise noted.