



Discoveries

News and views from Discovery Southeast Fall 2006

Priming the pump: Socratic method in the field and in print.

Richard Carstensen

This summer I met a Breadloaf class for a nature walk in the forest near the University student housing. The Breadloaf School of English is a graduate program of Vermont's Middlebury College that bases summer classes here at UAS. The class, taught by Mark Long, was called *Searching for Wildness*. The students were mostly in their mid-20s, and came from all over the country.

As we started down the road from housing, I asked the class what outings they'd been on since their arrival in Juneau. None, they answered.

Wow, I thought; this'll be fun! Without explanation I stepped off the pavement and waded into a thicket of ferns and salmonberry with about 3-foot visibility. After all, the class was called "searching for wildness;" seemed like we'd better get off the road.

I never remembered to ask how many of the folks in that class had ever been seriously off-trail before, but it was probably less than half. For the rest of our 4-hour excursion, we used trails or roads only as temporary bridges between further plunges into trackless forest and bog. The literature students quickly got used to Southeast-style bushwhacking and soon thought nothing of balancing on logs while gingerly parting devil's club stems with the backs of their hands.

Movement through the country, finding your basic animal pace, is part of touching wildness. But as much of the quest is cerebral. As soon as we'd pushed through that first roadside menziesia tangle into a mossy opening large enough to gather into a circle, we stopped. I began to ask the kinds of questions that are second nature to any naturalist. We didn't move from that spot for 20 minutes:

What are the names of the commonest trees, bushes, herbs, lichens?

Which of these trees is the oldest?

How long has this log been lying on the ground?

What animals live here? Where is their sign?

By about the 40th question, the forest began to feel like a deeply evolved *community*. Few of the trees were much bigger than 2 feet in diameter, but some of the hemlocks looked very old, certainly well over 300 years. The nearest building in the housing complex was less than 100 yards away, but if we'd decided to hide out there for a week or so, only the SeaDogs could have found us. Later, I asked myself if it would have been possible to do that on any campus in the lower 48 states; walk a few steps from a dormitory and commune with a tree that was standing there when Columbus reached North America.

To me, age is a big part of wildness. An 80-year old forest growing on an abandoned cattle pasture just doesn't feel wild, not after you've spent time in the old-growth forests of Southeast Alaska. Trees that have lived

10 times longer than me *know something*—just as wolves do—that I will never experience or understand. They feel as inscrutable and precious and dangerous as whales. Wildness, in this view, is not disorder, but a careful, ancient meaningfulness that human civilizations have shattered.

After our walk, the instructor, Mark, asked me if I'd read anything by his friend Tom Wessels, of Antioch College. He was struck by the similarities in our teaching styles, mainly the use of leading questions as opposed to just handing out names or describing relationships. I was pleased because Wessels' *Reading the forested landscape* is probably the best natural history I've ever read for any bioregion.

The similarity in our field styles is not too remarkable. Most interpretive naturalists soon learn that asking is more fun and effective than lecturing. It's almost inevitable that you adopt this mode on outings with kids; if you don't keep them engaged with brain-teasers or other games, they'll blow you off for something more rewarding.

I remember my awkwardness when I first tried the Socratic method in classes of adults; it felt like I was being a little condescending. But I soon decided it was *more* condescending (and boring) to recite nature facts to groups of politely nodding adults. It's actually a mark of respect to invite your audience to share in the problem-solving. Ideally, your first few questions are just priming the pump; after that, the questions—and answers—flow unsolicited, from everybody.

Soon, somebody asks a question that stumps

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Banner: Our first director, Cinda Stanek, priming the pump in 1990.

From the Director

Dana Owen

It was broad daylight, so I guess the blinking was understandable. Where I grew up, raccoons are ordinarily nocturnal; we would usually hear them before seeing them, and then only in the beam of a flashlight. But here were these two at midday, partly in, partly out of the base of an old snag, blinking and turning their gaze away momentarily before resuming what can only be described as apprehensive stares at a pair of humans who had interrupted their stroll through Vancouver, B.C.'s Stanley Park to stare back.

Watching wildlife in a major city is at best problematic. For one thing, there's simply not as much of it as we Alaskans might be used to. In spite of recent successes establishing urban populations of such species as Peregrine Falcons, glass, steel and concrete can only offer limited habitat. And glass, steel and concrete appear to be expanding their range, in contrast to prairie, forest and meadow.

With human populations projected to level off at just under 10 billion sometime in mid-century and people flooding in from rural areas, cities are inescapably a huge part of our future. If we are looking for a model for those cities, we could do worse than Vancouver. Ethnically diverse, politically engaged, energetic, and home to some of the highest density neighborhoods in North America, Vancouver is also among the most livable cities on the planet. In spite of the many high rise glass towers that dominate the skyline—a testament to local passion for the city's scenic location—strict codes ensure that enough space is left between buildings to give the city a surprisingly airy, spacious feel.

Still, even where the built environment (as architects are fond of describing towns and cities) is inviting and comfortable, people are hungry for contact with the natural world. Stanley Park is arguably the most prized material asset of that sophisticated, wealthy city. Even in the downtown core, the need to be around green growing things is apparent: The view from high up reveals gardens sprawled across rooftops, crammed into pots, perched on ledges and hanging over balconies.

A visit to a place that might look a lot like the future reinforces my belief in our mission at Discovery Southeast. Connecting people with nature only becomes more important as we become inexorably more urban. It's my hope that in a hundred years, strollers in a city park will still stop to stare, curious about the life around them and concerned for its well being.

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Discoveries is published by Discovery Southeast, Southeast Alaska's leading source for natural history and conservation education. Founded in 1989 in Juneau and serving communities throughout Southeast Alaska, Discovery Southeast is a nonprofit organization that promotes direct, hands-on learning from nature through natural science and outdoor education programs for youth, adults, and teachers. By engaging youth and adults in the study of nature, Discovery Southeast naturalists deepen and enrich the connections between the people of Southeast Alaska and nature.

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Outdoor Explorers, Shrine of St. Therese, Summer 2006

Discovery News

New look for web site

We're in the midst of a face lift for our web site. Construction should be done by the time you read this, so point your browser to www.discoveryse.org and check it out. We hope the new layout makes information easier to access and more inviting. All the old features will still be there: notices about upcoming events, information about programs, descriptions of publications, and the history of *Discovery Southeast*. You will still be able to order goods, pay for programs and make contributions online, as well as find out who we are and how to contact us. Unseen will be changes that let us more easily add and delete material, hopefully inspiring us to keep the site more up to date, with more pictures and more timely news.

We are grateful for the work of our web master/technology guru/senior naturalist Bob Christensen. We owe a lot of our success with computers, cameras and other technology to his talent and dedication.

Transitions

For this year's Nature Studies, we welcome back returning naturalist Diane Antaya who had been with us in spirit while she took some time out to be with her young children. Diane covers 5th grade at Riverbend Elementary and

is transitioning into Scott Burton's shoes at Harborview. Diane has the 3rd and 4th grades while Scott finishes up one last

year with 5th graders. Scott continues to be the naturalist at Gastineau.

New faces on the staff include Kevin O'Malley and Elisabeth Wertheimer. Elisabeth grew up in Juneau, and we are happy to give her the opportunity to share her knowledge with the next generation. She assists both Scott and Diane, a juggling act she performs with remarkable dexterity and aplomb. Kevin co-leads at Auke Bay with David Troup and assists Steve Merli at Glacier Valley and Darren Snyder

at Mendenhall River. He also introduces 5th graders throughout the Juneau School District to the fundamentals of bear behavior through the CBJ-sponsored Alaska Bears in Communities program.

Cindy Scott takes charge of the Board as our new President. In a move that successfully eased the last such transition, Mike Stanley steps back to become Vice President. Larry West takes over as Secretary from Alex Wertheimer who retired from the board after serving for six years, the last three as Secretary. We also say goodbye to board members Colleen Goldrich and Dan Hall. We'll miss all three, their positive energy and good spirits, and we wish them the best of luck in whatever new challenges they take on.

Special thanks

With a generous cash grant, Kennecott Greens Creek Mining Company has become a business underwriter of our flagship Nature Studies program. This year over 1,000 students from Juneau School District elementary schools will experience enhanced science education and outdoor learning from DSE naturalists. Please thank your friends and neighbors who work for Kennecott Greens Creek for this much needed supplement to funding provided by parent teacher organizations and individual DSE members.

We also thank Paula and Bill Kalbrener for their timely gift of a well maintained Ford 15 passenger van. It was just the ticket for dependable transportation for this summer's Outdoor Explorers and Crystal Lakes camps. For a variety of reasons, we needed to replace our old minibus, so we were delighted when Paula and Bill thought of us when they decided to part company with their van. We love it.

Speaking of the van, thanks also to Grant's Plaza for letting us park in their lot. It's no small trick finding a good place to keep a bus or a van, and we are grateful for their help.

And finally, a request

By far our most popular field guide is *Common Birds of Southeast Alaska*. It's been out of print for a year now, and we could use a benefactor or several to help us get it back on the shelves and into people's hands. A cost effective print run will be about \$2,500. If you would like to cover all or a substantial part of this cost, we would love to talk to you. You'll get a complimentary set of all our guides, recognition here and elsewhere (unless you choose to remain anonymous), and of course, our undying gratitude. Please call us at 907-463-1500.



Ron Plantz presents grant to Dana



Diane Antaya, Fall 06 Nature Studies



Teachers Expedition, Dawes Glacier, Summer 2006. Tim Lydon



the instructor. Better yet, somebody notices and successfully interprets something the instructor has never seen before. The outing transitions from a “led,” structured experience to a wilder collaboration. Humans are social carnivores, and we take naturally to this kind of hunting.

The unique thing about Tom Wessels is that he has borrowed the Socratic teaching style that works so well in the field or classroom, and applied it to his writing. It’s common to see the questioning style in writing for kids. *Discoveries*, for example, often runs a Puzzlers page for young readers. But I’ve only once (Winter 2001: *Bite marks and bathtub rings*) attempted an essay with natural history puzzlers for adults.

Why should kids have all the fun? About the only standard puzzler column I can think of in a grown-up periodical is the Photo Quiz in *Birder Magazine*. Birding, after all, is a game, and even the crustiest old birders expect their pastime to be enjoyable. The answers to the photo quiz begin with the basics, so as not to intimidate beginners, and proceed to arcane subtleties that leave even experienced birders in the dust.

Let’s take a Wessels-style walk through a Southeast forest scene. My purposes are twofold: to share some of the interpretive tools that help us understand forests as dynamic, shape-shifting habitats; and to explore a more interactive style of writing.

The forest scene above—like the etchings in *Reading the forested landscape*—is not a real place but a composite sketch that combines classic features rarely all seen with sufficient clarity in a single forest photograph. But these elements do occur together frequently within, say, a one-acre patch of our coastal rain forest. The view is to the southwest, with the evening sun at a low angle in the northwest. As we dig into this particular forest habitat, we’ll often use the process of elimination, discarding explanations that don’t fit. I recommend studying the drawing after reading each **boldface** question, and trying to answer as much you can before

reading on.

Let’s start from the ground up. **What geologic landform is this forest growing on?** There are no exposed bedrock outcrops or loose rocks or even unvegetated soils in the scene, but that in itself is a clue. The surface slope and roughness (or lack thereof) is another clue.

What could account for a gently sloping, smooth surface? In some places, gently dipping bedrock strata—shales and sandstones for example—result in such surfaces, but these rock types are uncommon in Southeast Alaska. More often, our smooth, gentle slopes result from the deposits of moving water, where streams come off steep slopes and spread sediments in fan-shaped landforms.

Does anything about the forest help to confirm this guess about its underlying landform? Yes, the enormous size of the 2 decaying stumps could only have been attained on rich, well-drained soils. *Alluvial fans* (“alluvium” is material deposited by moving water) support some of Southeast’s finest big-tree forests.

What is the range in diameters of living and dead trees in this scene? Let’s say our scale-person is 5.5 feet tall. Her armspan is roughly equal to her height. If she held her arms out, they would not quite span the diameter of the dead stump (dbh = diameter at breast height,

or 4.5 feet above the ground). If it's 6 ft dbh today, it would probably have been about 7 ft before losing the bark and outer sapwood to rot.

The distant stump on the left is comparably sized, and together these dead trees allow us to visualize the majesty of the preceding forest. The next largest tree is the vertically-furrowed western hemlock on the left, probably about 3 feet in diameter. The knotty tree in the foreground, and the largest tree rooted on the big stump are maybe 25 or 30 inches.

Next down in size are the paler "background trees." These range in size from 1 to 2 ft dbh. There's also a small leaning dead tree in the center, broken off at about 20 ft. It's a little less than 1 ft dbh. Finally, there are just a few little sapling-sized trees 4- to 8 inches dbh, mostly rooted on stumps.

Studying these tree sizes and identifying them to species is an important first step in deciphering the history of this forest.

Would you call this an even-aged or a multi-aged forest? Warning: there's no quick answer to this question. In the first place, tree size and age aren't necessarily correlated. On a good site with plenty of light, Sitka spruce generally grow faster than hemlock. Certainly, there appears to be a considerable range in ages between the largest and smallest living trees in the stand. But on the other hand, the roughly equivalent size of the background trees suggests that these could all be about the same age. This forest probably would not qualify as a truly all-aged stand with a full spectrum of ages from seedlings to ancients. It might better be described as having several discrete age classes, with trees that perhaps colonized in "waves."

Is there a strongly developed subcanopy layer in this forest? No. It's pretty sparse. A few wispy branches of hemlocks reach to lower levels in the background. Two saplings have foliage in the 10- to 20-ft zone, but this fills only a minor portion of the subcanopy. We can guess that the saplings are hemlocks because spruces this size almost never survive long in shady forest understories. Most old-growth forests have more subcanopy trees of intermediate height than we can see in this sketch. Again, this suggests that we have 2 age classes here: the 1- to 2-ft dbh background trees whose crowns compose the high canopy, and the very small, more recently *recruited* saplings that are probably 20 to 40 years old.

Which is the oldest of the trees in this

scene? The vertical furrows in the 3-ft dbh hemlock on the left indicate an old-growth tree. Forest-grown hemlocks—as opposed to those that come up in open, sunny locations—typically grow quite slowly. A 3-ft dbh forest hemlock is usually at least 300 years old. As we shall see, it is probably more than twice the age of the next oldest trees in this scene. It was a contemporary of the two big stumps, and the sole survivor of the disturbance (or disturbances) that brought down the previous forest.

How old is the foreground tree and how fast is it growing? This is a Sitka spruce. We know because of the branching pattern—referred to as *whorls*—that do not occur on hemlocks. Each year a young spruce sends up a new *leader* and simultaneously shoots out a new layer of horizontal, whorled branches.

On an open site such as a beach meadow, a spruce sapling can have densely-needled branches right down to ground level. As the forest grows up, the high canopy foliage shades out these first lower branches and they eventually fall off. But the evidence of the tree's original *open-grown* condition lingers. From the whorls of branch stubs we can also estimate the tree's age and growth rate. Note that one of the medium-sized background trees also has hints of whorled branch stubs. These 2 whorled trees are spruces, and the others are either hemlocks or spruces that were not strongly open-grown.

We can count 7 whorls on the foreground tree, but it was probably at least 10 years old before reaching the height of the bottom whorl; young saplings take awhile to reach their "stride." Once that happened, however,

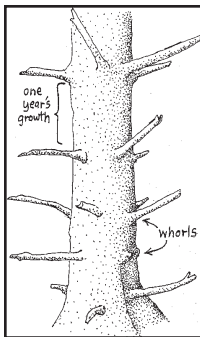
this spruce began growing at well over one foot per year. This is consistent with its location on an alluvial fan, and the fact that it got plentiful light.

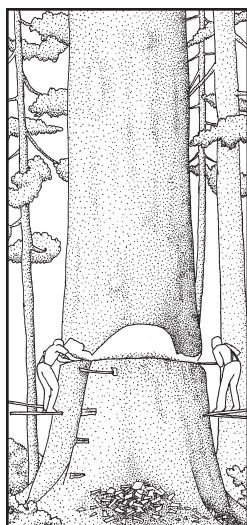
A good way to quickly estimate the age of an open-grown spruce is to stand back far enough to see the top of the tree. Hold out your fingers 10 whorls apart and "step them up" the trunk, counting a decade at a time. A typical height-to-diameter ratio for forest conifers is about 50:1. This spruce, and the larger 2-ft-dbh hemlocks in the background, are probably about 100 feet tall. At a growth rate of more than one foot per year, that would make the foreground spruce somewhat less than a century old.

What happened to the two big stumps? When? The big stumps are relatively flat-topped, suggesting they were cut by saw. But wind-thrown trees sometimes snap off, leaving flat-topped stumps, so we should look for other clues. If wind were the culprit, we could probably still see the very large logs lying nearby on the ground. A 6-ft diameter spruce log takes more than a century to decompose. Large hemlocks decompose more quickly, in part because they almost always have heart rot long before they die and fall. But these stumps are unlikely to be hemlocks simply because of the size; the Alaska state champion western hemlock is only about 6 ft dbh.

The best clue to logging is the *springboard notch* about 8 feet up on the right side of the near stump. Loggers drove platforms called springboards into these notches in order to stand above the *root-swell* of big spruces, up where the diameter was smaller. In the days before chainsaws, the notches were usually cut with an axe.

The first chainsaws used in Southeast were 2-person Titans that appeared in the 1940s. They were heavy, bad-tempered, and for some purposes scarcely superior to their predecessor, the long 2-handled crosscut saw. (Duane Hafner, who saw the first Titans used in the Lemon Creek area, insisted the elegant handsaws were only called "misery whips" by





those who didn't know how to sharpen them.) For a brief period, springboards were used by the early chainsaw wielders, but the notches were then also cut with the chainsaws, leaving longer horizontal scars. The stump notch in the drawing is narrow and therefore axe-cut. It probably precedes 1940; these spruces were cut at least 65 years ago.

The rate of stump decomposition varies from place to place in Southeast. I drew this one from a photo taken near Sitka, where winters are warmer than Juneau's. You can still see weathered springboard notches a century old around Sitka and on "balmy" Prince of Wales Island. Near Juneau, stumps decompose more quickly, a stump of this integrity would probably be less than 50 years old. I suspect the difference has to do with the freezing of ice that forms in cracks in

the wood, hastening the collapse of stumps in northern Southeast.

But there are other clues to date-of-logging besides stump condition. **What can we say about the largest tree growing on the foreground stump?** The ribs or buttresses running vertically up the trunk of this tree are called *fluting*. This growth form is disliked by loggers but is not a deformity. Fluting develops in western hemlocks that grow rapidly in fairly open conditions—not deep forest understory—where they are exposed to wind stress. The convolutions become most pronounced at about 100 years, and then are gradually overgrown.

So the strongly fluted hemlock attached to the side of the stump is definitely not ancient, but neither is it young. It wasn't large when loggers cut the giant spruce, because they would have cleared it out of the way. This hemlock either seeded into a crack on the rim of the freshly cut stump, or else was so small a seedling that the loggers ignored it. Although hemlocks on good sites can grow fairly fast, a trunk of this size suggests it's probably closer to 100 than 50 years.

Early loggers with handsaws rarely clearcut forests because it was too much work, and they only wanted the finest trees. **How complete was the logging removal of the previous forest?** We know they didn't clearcut the stand because the old hemlock on the left survived. On the other hand, we can guess that more than half of the original forest was quickly felled, for two reasons: 1) The foreground spruce and at least one other grew up in sunny conditions; they're open-grown with obvious low branch stubs. 2) The stump-side hemlock is fluted, indicating wind stress; that would not have been likely if most of the canopy trees remained intact. Forest understories are not windy places.

Notice that I suggested the forest "was quickly *felled*," not necessarily that it was mostly *logged*. We only have clear evidence for the logging of the two largest trees. But surviving trees in partially logged forests often subsequently blow down in one or a series of wind storms. A combination of logging and wind probably opened up the original forest in our scene. We now have evidence from several sources—stump condition, age of post-logging colonizers—that this was probably about a century ago.

If the stand was logged about 100 years ago, would the smaller cut stumps still be present? Probably not. Wood decomposition is rapid in Southeast compared to places like the

Oregon Cascades where logs and stumps can remain intact for 300 years. And if we did find smaller stumps, they'd be too rotten to tell if they were cut or snapped by wind after the logging. Corresponding down logs of small- to medium-sized trees blown over a century ago would now be only vague outlines in the duff.

From what direction do prevailing storm winds sweep this forest? There are several down logs in the scene, and 2 of them show root pads on the left side. Recalling that our view is to the southwest, these trees fell towards the northwest. The storm winds therefore came from the southeast, a typical direction for gale-intensity storms that hit Southeast forests every few decades, usually in late fall or early winter. The ripped-up root pads show that at least 2 of the fallen trees were not snapped but uprooted.

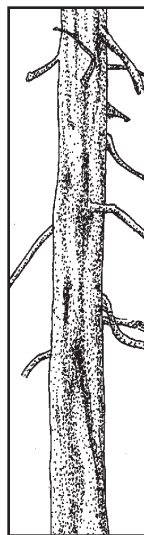
How long have the down logs been on the forest floor? Thick cushions of moss cover the logs, but so far, we see few shrubs or small trees growing on them. The log in the left distance is still firm enough to lie propped above the ground by its roots; it's considered to be decay-class III. (Decay class IV logs slump completely to the ground). That makes me think the storm that toppled these medium-sized trees happened about 20 to 30 years ago.

Could these downed logs have been part of the cohort that colonized after logging? The logs are at least as large as the living second-growth spruce and hemlock that grew up after logging. When they fell 20 to 30 years ago they were substantially larger than the second-growth trees were at that time. So they were present but passed up by loggers a century or so ago. Unlike the ancient hemlock on the left, these trees did not make it through the southeasterly storm (or storms) that hit this forest in the 1970s or 80s. If I were studying this stand in the field I'd look up to the crown of the old hemlock. It likely has a broken top and doesn't protrude above the crowns of the younger trees; sometimes it pays to be short.

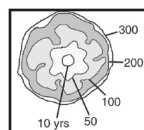
When did the leaning snag die?

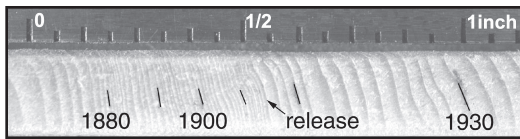
This dead tree has lost its branches. The roots have withered until it is just about to fall. Even the heartwood is punky; the top snapped off at about 20 feet. You can't tell from my drawing whether the bark has fallen off, but that would be another good clue. From these observations I would guess it died about 20 years ago.

Small snags like this are common



fluting peaks at about 100 years





This core from a small hemlock shows that it was released in 1917 by the logging of taller nearby spruces. The logging probably occurred in 1916.

in second-growth forests. Trees seed in prolifically after a disturbance such as logging or blowdown. They grow together thickly until competition for light and soil nutrients begins to eliminate the less vigorous trees. Foresters call that period the “stem exclusion” phase. We’re just about through with stem exclusion in this forest scene. The next phase will be called “understory reinitiation,” in which a few of the larger canopy trees fall, opening up the forest enough for sunlight to stimulate regrowth of herbs and bushes.

How would you characterize the understory vegetation? Okay, I know my sketch is pretty cartoony in this regard. Those low-growing plants are mostly shield ferns, some of the only vascular species capable of reaching good size in shady forest understories. Virtually no shrubs have yet colonized. If we were to check the ground forbs on a field visit to this forest, we’d find sparse cover of species such as ground dogwood, foamflower, and trailing raspberry. These plants stay green throughout the winter and are important deer foods. Their sparsity and the absence of blueberry would cause this forest to score fairly low on a winter deer habitat survey.

How could tree rings give us the exact date of logging? A century or so ago, the newly-minted Forest Service wasn’t keeping comprehensive records of the locations or dates of logging. But tree rings are in many ways more trustworthy than paper documents.

We could place a minimum age on the logging by *coring* the hemlock growing on the rim of the big stump. Foresters use a device called an increment borer to drill into the pith (center ring) of a tree. They extract a narrow wood sample and count the rings. But coring the stump-rooted hemlock would not give us the

actual date of logging. We don’t know how long it took the hemlock to colonize after the big spruce was cut.

There’s a much better way to exactly date a major forest disturbance like logging or blowdown. The trick is to find a tree that survived the disturbance. Typically, the growth rate of such trees experiences a surge in the summers following the disturbance. Foresters call the surge *release* because the tree is suddenly freed from the competition of close neighbors. No doubt some of the background hemlocks are release trees that were only small saplings when the forest was logged, but these are scarcely larger than those that seeded in after the cut, and therefore hard to identify. In our case it would be simpler to core the old hemlock on the left. We would only need to extract a few inches of sound wood from the slow-growing outer portion. Counting back from the outermost ring, we’d watch for evidence of suddenly increased growth in the decades surrounding the year 1900. Of course it’s best not to trust the ring patterns from just one release tree; if you cored several trees and all were released in the same year, that would be pretty strong evidence.



Here’s what our forest scene probably looked like in 1850. **Assuming it’s not logged again, could you draw a picture of it in, say 2406?**

We now know about as much about this forest scene as a teacher does about her students after the first hour of the first day of the school year. A deeper understanding of forests is not only possible but essential to human survival.

Here’s a different kind of question—ethical as well as ecological—about the relationship between human and natural communities. The pioneer mentality converts old, sophisticated natural communities to younger, simpler ones. Many of today’s “resource managers” still subscribe to that mindset, which values productivity over antiquity. **What do we (and nature) lose in this conversion?**

My loyalty to ancient trees borrows from my loyalty to old people. If we managed human society as we manage forests, we would disproportionately “harvest” our elders until our maximum age dropped to, say, 40 years. Old people can’t shovel ditches very fast, and would be considered “decadent” or “overmature” by most forest managers. A younger human society would surely be more physically (if not intellectually) productive.

Few would propose this, because we have a deeper understanding of human than of natural communities. Ethics or loyalties aside, we know the loss of our stooped and balding advisors would cripple us. **What does a forest’s oldest tree contribute to its community that’s analogous to the contributions of an 80-year-old person?**

What could it tell of endurance, patience, selection, investment in the future? How many ancient storms are chronicled in its rings? What would it say about the heart of wildness, if we knew how to ask?

Sketches from a Field Notebook

Kathy Hocker

So why is sticky tofieldia (*Tofieldia glutinosa*), sticky?

Mary Willson and I wonder about the tacky upper parts of the flowering stems. We count ensnared bugs - nearly every plant we find has trapped insects. A clever defense - but could it be more than a defense?

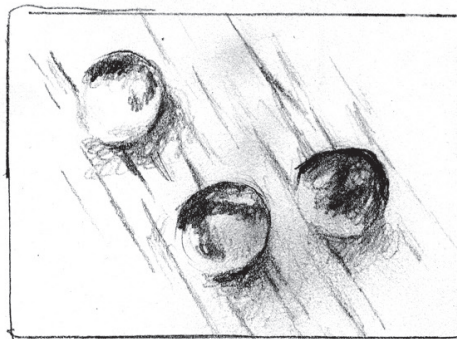
More to discover →

Are these plants carnivorous?

Seed capsules show chewing, which turns out to be caused by

The remains of an insect (or three) - disintegrated among the sticky protrusions on the upper stem.

Loopers! They seem fairly unaffected by the stickiness, though they move slower on the stems. Some plants have three or more.



Under 60x magnification, "hairs" are reddish bulbous protrusions, very sticky

- I plant a couple in a small terrarium, include four of the loopers. The larvae chew through the seed capsules and eat every seed. They triple in size, then vanish into the moss.

Review Richard Carstensen

Last Child in the Woods: Saving our Children from Nature-Deficit Disorder. Richard Louv. 2006. Algonquin Books of Chapel Hill.

Whenever I visit my parents in a suburb of Rochester, New York, I pack my binoculars and slip into a black-willow forest behind the 2-acre parking lot of a nearby Jewish temple. I can walk to this forest in 7 minutes from my childhood home. I cross a ditched creek and begin to cast about for a fading trail that leads into a 20-acre cattail marsh.

Growing up, this marsh was our wilderness. It was big enough to be scary, but scary in a good way. This was where we hunted frogs, turtles and snakes, and fell slowly in love with the earth.

The persistence of this lovely marsh—which we mistakenly called “The Swamp”—is nothing short of miraculous. Only its un-drainable clay substrate has saved it from the upper-middle-class residential development that now completely encompasses it. I’m thankful that I can still reconnect with the place that molded me, but going there always makes me sad. In terms of habitat, The Swamp has actually improved; there are far more deer and herons than when I played there 44 years ago. But I would gladly trade the deer for a few grubby kids; in the past 20 years I’ve never seen a youngster in The Swamp, or even any sign of kid activity.

Last Child in the Woods, by Richard Louv, is an in-depth analysis of this disturbing trend. But it’s more than a lament and warning. The book is also a celebration of the child-nature bond, and a challenge to adults who must defend it.

Today’s children are the first generation on earth to be raised without meaningful interaction with nearby nature. Louv points to rapidly accumulating evidence—both scientific and anecdotal—that the disconnect is a fundamental cause of growing problems such

as childhood obesity, attention disorders and depression. The book has caused a stir in educational circles and among city planners.

From the perspective of *Discovery Southeast*, Louv’s book provides a welcome validation of our work. Although the importance of the child-nature bond is intuitively obvious to most *Discovery* members, objective evaluation of the long-term benefits of natural history education and hands-on outdoor experience is very difficult. *Last Child* presents results of the latest of these studies that collectively are beginning to constitute a mandate for educational and land-use reform.

Obstacles to the child-nature bond are unfortunately many. As with wildlife (and kids *are* wildlife), habitat-loss is probably chief among these obstacles, at least in the lower 48 states. Vacant lots keep disappearing, and No Trespassing signs are harder to ignore. Another issue that was of little concern to my parents but much in the nightmares of today’s young families is what Louv calls “the bogeyman.” The media loves child-abduction stories almost as much as mountain-lion attacks, and although the statistical likelihood of either is vanishingly small, perceived risk is keeping kids out of the woods.

Yet another obstacle is the “criminalization of natural play.” . . . As a powerful deterrent to natural play, fear of liability ranks right behind the bogeyman.” Legal obstacles to nature play come from 2 basic sources: the fear of injury to children (and the landowner’s consequent fear of lawyers); and the well-intended restrictions on land use meant to protect natural habitats. One of Louv’s pet peeves to which I can relate is the illegality of tree-houses. His 4-level childhood treehouse (in an oak) sounds strikingly similar to mine (in a willow).

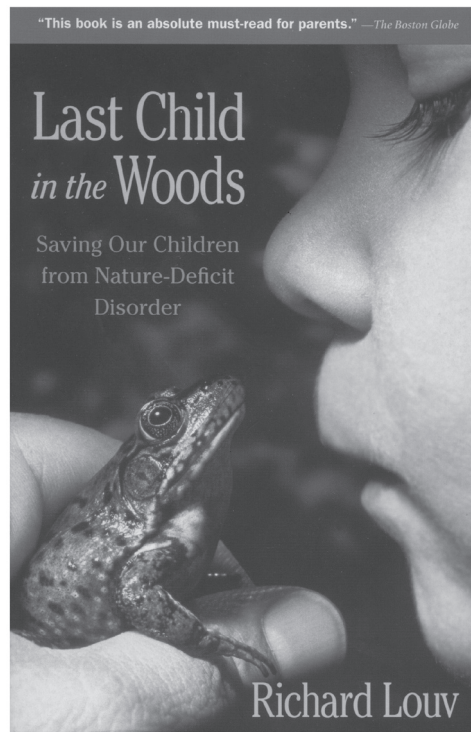
As opportunities in nature decline, distractions increase. Malls, electronic games, computers, and heavier school and extracurricular schedules are keeping kids indoors. Louv concludes that, ironically, parents must structure “unstructured time.”

Okay, so the child-nature bond is seriously threatened throughout the lower 48 states. But is this a problem in Southeast? Many of us came here for Alaska’s increased elbow room, lower crime rate, and easy access to nature. In theory, even an urban community like downtown Juneau, or suburban developments like Mendenhall Valley

should provide more opportunities for children to connect with nature than anything an unlucky rich kid in Rochester, New York could dream of. And certainly some families have achieved this.

But ask any *Discovery* naturalist what percentage of the students in his/her classes have significant contact with nature. It may vary from school to school, but the average is probably less than half. Louv has identified an ailment of sweeping proportions. The child-nature bond has been breaking down long enough that even the parents of many of our grade-schoolers—few of whom grew up in Alaska—had little childhood experience in the woods. What they never knew, they can’t pass on.

Last Child will sadden and inspire you, and provide some of the tools we all need to reconnect people and place.



Note: As one small example of the complexities involved in the break-down of the child-nature bond, consider the book’s cover photo. That’s an *adult* hand holding the frog; not the kid’s own muddy fist. This is probably a concession to political correctness. In these day’s of amphibian declines, one should no longer encourage children to handle the critters that we baby-boomers all grew up collecting. Actually, a fully PC cover image would have the parent wearing a latex glove.



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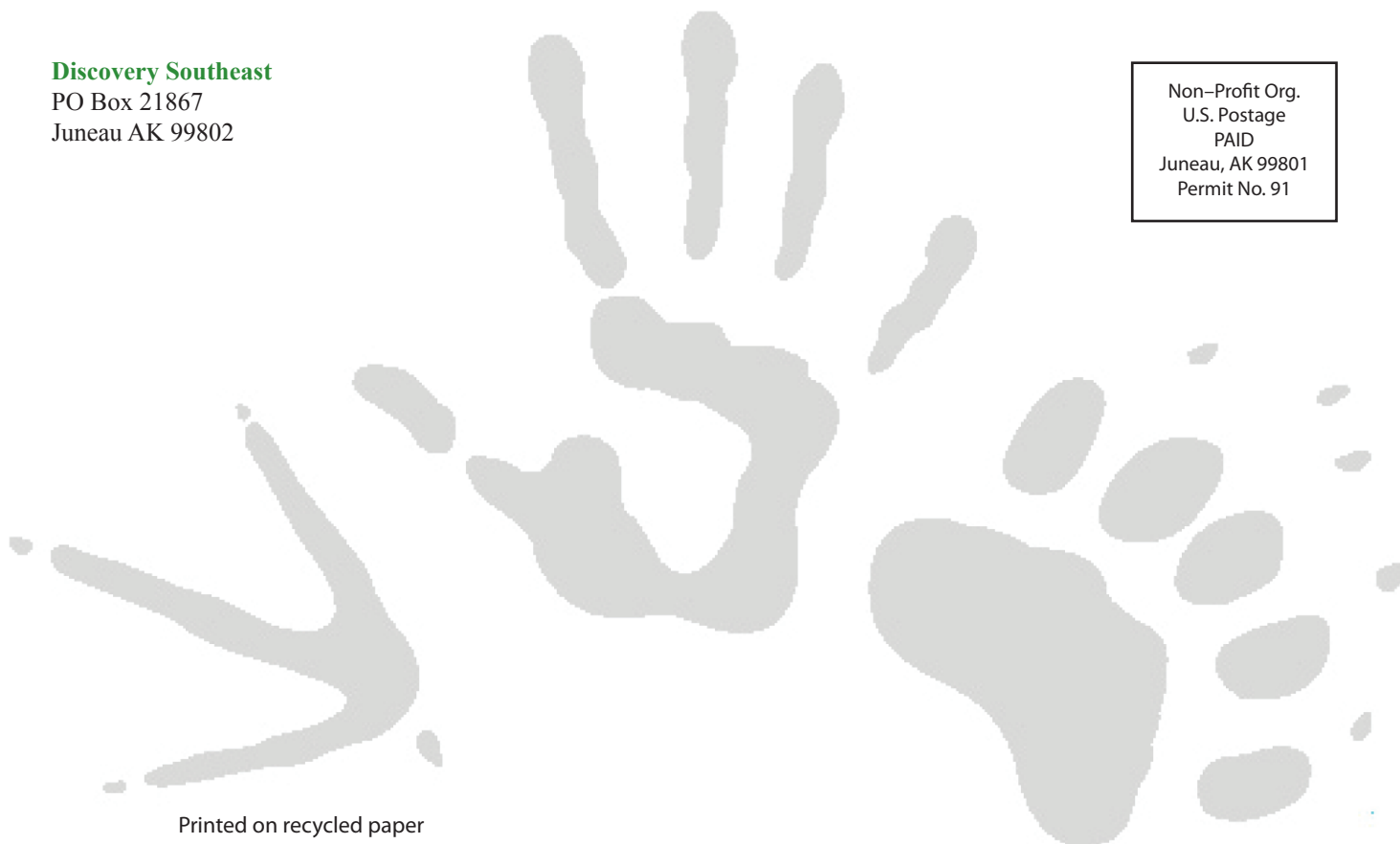
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