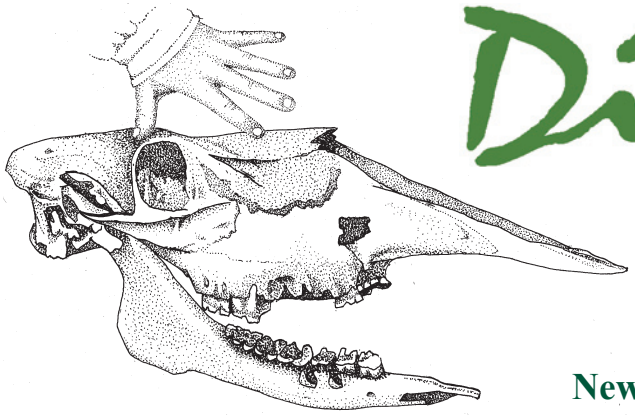


Discoveries

News and Views from Discovery Southeast **Fall 2001**

Off trail

Steve Merli

I'm wandering along a gravel road by a creek looking for something to do. Recent rains have lifted the water level, offering a mildly adventurous crossing. The hillside across the creek is steep but its mossy forest floor is inviting, a welcome change from the hard packed road gravel and proximity to other hikers. The water is deeper than the tops of my boots, so I'm faced with a choice; continue walking this trail, or take off my boots and cross to the other side. I choose to leave the trail.

Cold water bites into my flesh as I begin the 30-foot crossing. Streambed cobbles are slick with algae, so I move slowly rather than hop my way across. During this brief time my attention is completely on my feet, with but one focus - staying vertical. Even though the risk is slight - a cold dunking and a brisk run to the house - the payoff for being barefooted is a heightened sense of awareness.

Eager to be moving, I quickly ascend the hillside. My feet tingling with blood carry me easily. Having left the foot path I must now pay closer attention to the subtleties of terrain. I'm uncertain where this wandering will lead, but not concerned; I've come to trust this way of traveling.

Several hundred feet up the slope I stop to jot a few notes: Porcupine skeleton is intact and unscavenged. Bear scat has blueberry and devil's club seeds. Undigested highbush cranberries adorn it like christmas ornaments. Winter Wren flits about in the understory keeping a sharp eye toward this two-legged intruder. Young spruce forest reflects previous timber use of long dead miners.

From where I'm sitting a 20 minute walk would put me inside a fifth grade classroom. I fantasize arriving there, fresh from outside, and inviting them to this very spot. What would the kids say? I'm sure you know. Would their rush for the door be a sign of weakness, a chance to get away from the duties of schoolwork? Or does something deeper compel them?

Today's schools are largely about information access. Teachers give gigantic amounts of personal time, creating effective, meaningful ways for children to learn through this medium. Increasingly, our students have more savvy for facts than for actual experience. For example, you'd be happy hearing a fifth grader recite the main characteristics of a desert or tropical ecosystem, but shocked at how little they know about the one that actually surrounds them.

During the past 10 years Discovery Southeast has been inviting students of upper grade school and middle school to step *out side* their daily routine to experience the nature of Southeast Alaska. Fortunately, so far, all our schools in Juneau have access by foot to places not often visited by humans. These places harbor a mosaic of experiences just waiting for us to explore. Our home-cooked, site-specific style of nature studies is a very unique program that helps students become intimate with their local natural world.

As a naturalist I want to expose kids to the

In this issue

Masthead: 5th grader measures moose skull on Discovery outing at Stikine river

broader scope of nature by way of all their senses. I'm not concerned what field of study they choose later on. Being outside sharpens all our faculties: those of the artist, poet, scientist, musician, mathematician or writer, even parts of ourselves that refuse this very labeling.

My initial third grade field trip in the fall is an introduction to going off trail. Kids learning to bushwhack often start by whining. They blame other people and things for their troubles –slapped faces from flinging branches, the awkwardness of movement on uneven ground - but have little skill in diagnosing or solving these problems. If we can't stop the whining then no seeing will occur. I confront the problem head on.

We're ready to leave the trail. Kids are piled up behind one another like they're going to gym class. I stop, usually near a shrub, for the first and most important lesson. I ask a student to stand behind me while I begin to pull back on a branch. This brings all to attention as I question how the branch will move after I pass by. "It'll hit Billy in the face", cries one. Whose fault is that, I ask? All fingers point to me. But whose face is it? "Billy's", in unison. Whose body is it attached to? Billy's, again. Who is responsible for Billy's body? Here is the point of shifting perspective; most kids are still pointing at me. I say that may have been true last year in 2nd grade but from now on and for the rest of your life, you are responsible for your body and what you do with it.

From this new perspective, what choices does Billy have in order not to have his face smacked? Several suggestions come forth. He can duck, step backwards, or cover his face. Finally someone will say the branch can't hit Billy if he keeps back a certain distance from the person in front of him. Making it simpler, I quote a fourth grader from 6 years ago who said "to save your face, keep your space." We go into the brush and practice.

Since then, going off trail is preceded by the proclamation," Save your face, keep your space." It's amazing how this phrase reshapes the field trip experience. As we're going through the brush I hear it repeated, "save your face, keep your space." Kids don't complain any more about getting hit by branches. Now they like going into the brush because they have the power to avoid injury. When someone does get hit we ask, " what does the branch hitting your face teach you?" I also remind them that there is no good or bad, right or wrong here. The branch is a fair teacher; it will hit anyone, your grandmother, sister, uncle, best friend, the president, if they're not being attentive to where they are.

There is more going on here than a brief lesson in the fine art of bushwacking. "Save your face, keep your space" is a life-long mantra for always being mindful of where you are and what you are doing whether that be in the woods, the grocery store, at a meeting or any other situation that is literally or metaphorically threatening.

Going off trail has a managerial component as well. Trying to keep a group together on a trail, especially kids, is almost impossible. Everyone knows that the trail connects starting point A with some distant point B. This usually results in the scattering of bodies and minds. Stepping off trail requires us to slow down and notice where we are right now. Usually by the time a field trip is over we haven't gone very far at all, even though kids will argue that it had to be miles.

There are many stories to tell about our adventures off-trail. Nature studies and daily life lessons come fluidly, outside the standard medium of lecture, book information and the power struggles that arise in classrooms. Nature is a great teacher. All things leave tracks, signs of their presence. Discovery Southeast teaches how to read them.

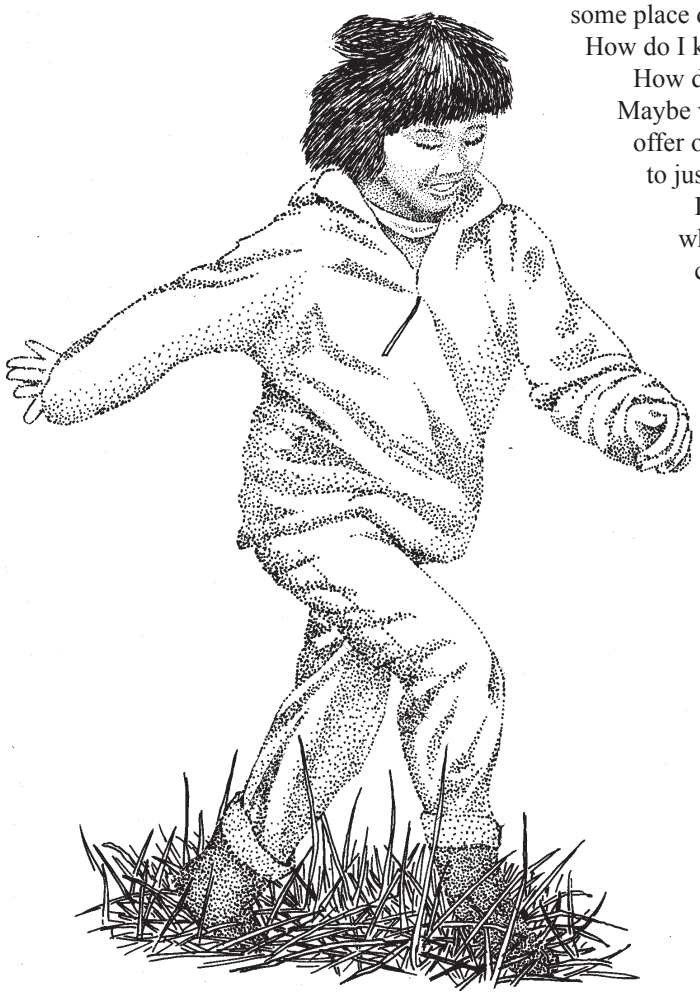
With a fourth grade class we start out the fall theme with decomposition, a target in the school district's curriculum. Fall is the best time of year to be outside witnessing decay. Our outing will be in search of the FBI (fungus, bacteria, invertebrates) who are responsible for all the rotting going on. With the call "save your face, keep your space" I turn into the forest thicket and begin. I have no specific direction in mind. Simply dropping into explorer mode, relinquishing the penchant to overcontrol things, promises something will come our way.

We stop to look at the decaying leaves of skunk cabbage, now lying on the ground like spokes of a wagon's wheel. We look for mushrooms of different shapes, sizes and colors and discuss their function in the forest.

We travel for a bit, winding our way through the brush, over then under logs. Our pace is relaxed, yet mindful, like the hunter's. We've been out for nearly an hour when we pass by a large rootwad and just beyond lies a skeleton of a dead bear!

I freeze in my tracks, taking in the beauty of this scene. Students gather around respectfully. They know that here is something outside ordinary measures. Inside me a pulse drums the word sacred, sacred, sacred.....a word not often uttered in educational contexts. As quickly I breathe a word of thanks to this answer for our trusting of the ground.

The skeleton lies *en situ*. No soft tissue remains. Unshackled black hair cradles it like a dark ground nest. It died in a kneeling position with forehead on the ground and forelimbs at its side. Except for the skull and the black fur this could be a human.



The questions start to flow. What is it? How'd it die? How old was it? How long has it been here? What took it apart? A naturalist's dream come true. More interesting is the reverence that surrounds us. This is a critter about the same size as these kids. The femur bone and scapulas match theirs. No museum piece could evoke such questioning and experience.

As we attempt to answer these obvious questions, I believe the students are also transported to the end of their lives and what will become of the body they inhabit (bones have a unique way of doing this to all of us). This deep tremor of emotion stirs us to ask "Who am I and what is my purpose here?"

We've been traveling in the woods opening up our senses. The dank smell and heat-stealing potential of the rain forest penetrates and cures the numbness of constant 70^{o} indoor temperatures. Some of the tenets of society are challenged. Am I dressed well enough for 2 hours in the woods? Do these fashionable baggy pants actually suit my needs? What happens to things when they die; what about my grandmother who passed away last summer? Do I really come from the earth? How does it work? Why don't I get sick from eating dead bodies? Where *in the world* do I get my food? Am I eating the ground from other ecosystems? What does it take to get all that food to my house? If it comes from some place distant from where I live how can I substantiate its realness? How do I know what is real?

How do we as teachers and field leaders provide the answers? Maybe we shouldn't be in such a hurry. Perhaps it's better to simply offer outdoor experiences in a safe way and give children support to just live the questions.

Discovery Southeast is a collective of many diverse people who believe that our experiences in the natural world and our connections to it are fundamental to shaping well rounded human beings, whether they become scientists, artists, auto mechanics, computer programmers, teachers, miners, CEOs, nurses, managers.

My job as a father, brother, uncle, and fellow human is to help youngsters understand who we are as humans, risen up out of the body of this awesome planet, sharing it with life forms who are *not* "other."

That bear is still out there, slowly transforming into blueberry, devil's club and hemlock. The 4th graders of the initial bear discovery are now in 8th grade. When I see them in middle school they always ask about it. The memory, a seed gestating deep in their psyches, waits to flourish who knows where or when.

Southeast scorecard

A comparison with neighboring ecoregions

Richard Carstensen

2. Young Douglas fir tree-farm on the Olympic Penninsula, WA. Only 8% of this ecoregion remains intact. The oldest tree in this picture is probably about 50 years old.

Sometimes the most instructive view of home is from thousands of miles away.

This fall I drove 6500 miles from Juneau to San Francisco and back. For 6 weeks I birded and botanized through Southeast Alaska, Yukon, BC, Washington, Oregon and California. Temperatures ranged from 22^0 to 102^0F.

The most important reference in my trip library box was *Terrestrial Ecoregions of North America* by the World Wildlife Fund (WWF). This book divides Canada and the US into 116 ecoregions, each with unique climate, geology, flora and fauna. According to the WWF map, my journey transected 20 of these ecoregions.

Our home ecoregion is called the North Pacific Coastal Forests. Six of the western ecoregions I visited are listed in the table below comparing species numbers, endemics (species essentially limited to that ecoregion), and percent remaining intact habitat.

Of the 6 ecoregions, the one with greatest similarity to ours in climate, flora and fauna is the Central Pacific Coastal Forests, spanning Vancouver Island, Washington and Oregon. Almost all of the plants and animals of Southeast Alaska also occur in this more southerly ecoregion. We have only 55% of their vascular plants and 73% of their birds. On the other hand, 85% of our landscape is structurally unaltered by humanity, compared to 8% intact habitat in the Central Pacific Coastal Forests.

1. Young, even-aged boreal "fire-forest" of white spruce and aspen on the Cassiar Highway, BC

Looking only at the numbers, our ecoregion might appear to most closely resemble the Yukon Interior Dry Forests. Tree count is identical, for example. But few of those 14 species are shared. Our Sitka spruce and western hemlock are replaced by white spruce and aspen in the interior, where temperature extremes are far greater and only a fraction of our precipitation falls. Caribou replace deer and gray jays replace Stellar's jays.

The North Pacific ecoregion consistently ranks well below our neighbors to the south in species richness. (One exception to this trend is bryophytes, the under-appreciated mosses and

	#	#	#	vascular	endemic	% intact
ecoregion	birds	mammals	trees	plants	species	habitat
north pac coastal forests	166	44	14	615	4	**85**
centr pac coastal forests	**227**	66	34	1109	30	8
YK interior dry forests	123	47	14	692	0	75
klamath/siskyou forests	222	69	**60**	1859	**168**	25
CA central grassland	184	53	12	1682	21	0
sierra nevada forests	197	**77**	50	**2373**	108	25

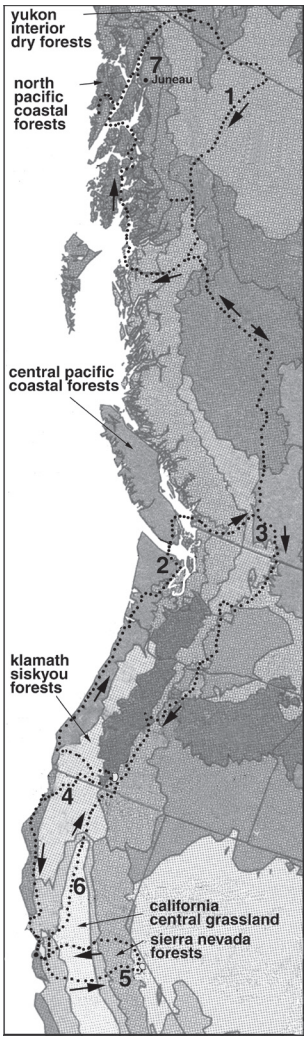
Table comparing species richness and percent intact habitat among Pacific ecoregions.

Photo locations are shown on ecoregions map at right.

3*. Dry ponderosa pine/sagebrush, Okanagan, BC. About 12 to 15 inches annual precipitation.*

4. *Mixed conifer/ deciduous forest on Klamath River, CA. More tree species grow in this picture than in all of Southeast Alaska.*

5. *Century-old lodgepole pines, 9000 feet, Yosemite, CA. One of several elevational zones contributing to the Sierra's extraordinary biodiversity.*



liverworts. Because our forests and bogs essentially never dry out, Southeast Alaska is the world center of "bryo-diversity.") The highest of the 6 bird counts (WWF excludes casuals and accidentals) belongs to the Central Pacific Coastal Forests. The Sierra Nevada Forests ecoregion with its huge span of elevational zones has the highest counts for mammals and vascular plants. The Klamath/Siskyou Forests ecoregion (the "Smokey Mountains of the west") has over 4 times the tree richness of Southeast Alaska, and also scores highest for endemic species.

If diversity and endemism are not our forté, then what *is* special about Southeast Alaska?

Marine and glacial barriers create an incomparably intricate archipelago. Islands isolated for millennia each have a unique history and biota. *Sub*species endemism in some groups like mammals is quite high because of this longstanding fragmentation.

Our ecoregion has more than one fourth of the world's coastal temperate rain forest, a universally beleaguered biome. This led the World Wildlife Fund's biologist teams to rank us "globally outstanding."

The "% intact habitat" column tells a sobering story. No ecoregion I visited south of Canada retained more than 25%. California's Central Valley

6. *Valley oak/California walnut/ Fremont cottonwood forest on Sacramento River, CA. Only postage-stamp-sized remnants of this forest remain.*

7. *Ancient uneven-aged Sitka spruce/western hemlock stand on proposed golf course, Peterson Creek, Juneau, AK. This tree has about 500 growth rings.*

lacks even 1%. In contrast, Southeast Alaska's comparatively intact habitats support the continent's healthiest populations of brown bear, bald eagle, and marbled murrelet, as well as some of the world's last superabundant salmon runs. Although populations of some species have declined, none are known to have become extinct within our ecoregion, a claim few others can make.

Absence of a summer dry season distinguishes our ecoregion from all others, even from rain forests to the south. The resulting rarity of fire gives us widespread old-growth forests. Combined with a relatively gentler human presence, the effect is stunning. As I finished my drive, dropping into the moist valley of BC's Skeena River at the southern limit of our ecoregion, I realized that not once in 6500 miles until this homecoming had I looked upon an entire hillside covered with the ragged gappy texture of ancient, uneven-aged forest. These irreplacable habitats now exist only in tiny patches in our neighboring ecoregions. None of the photos except #7 show forests older than 2 centuries.

In a recent talk at Dzantik'i Heeni, Sitka author Richard Nelson suggested that Southeasterners owe a tithe for the privilege of living here. A tithe is a voluntary gift of a tenth of one's income, donated traditionally to the clergy (or perhaps in modern times to one's favorite non-profits?). At the very least, a 'thank you' is due, for each elderly rockfish on the line, each squishy step through 12,000-year old bog, each long walk beneath 500-year old trees.