

Debris

Andrews Experimental Forest, May, 2006

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### I. The Forest

Seed spore egg,  
a curl of lichen or moss,  
a feather, a fallen twig,  
a pebble. Summer drought.  
Water drips from a decaying log  
laden with nitrogen.

Winter floods: boulders  
crash down Lookout Creek.  
A four hundred year fir falls,  
blocks the channel. Gravel bars  
shift stone by stone.  
A single alder leaf turns in an eddy.

Roads wind up Lookout Mountain.  
Locked gates, flags, tags,  
and stakes mark research plots,  
the gathering of information:  
carbon dynamics  
disturbance patterns  
habitat structure  
nutrient cycling  
log decomposition  
debris flow.

Only in the mind can there be  
one red-backed vole, one owl, one Douglas fir.  
Only in the mind can there be  
fir without fungus, owl without fir,  
fungus without vole.

Study the wind, listen to what it says  
about the shape of the land,  
the shape of a stone,  
the shape of the needles that sieve it,  
the open place in the canopy  
where a tree fell in the last storm.

Study the taste of creek water in September  
before the first winter rain,  
the taste in May when the snow melts.

Study smell, study texture,  
take the petals of a violet,  
the leaves of miner's lettuce between the teeth.  
Let the tongue explore,  
the body learn the forest inside itself.  
Study love and the way love tangles  
with fear. Study desire and the light  
that makes the coralroot glow.

Study the wind. Listen  
to what it says about you.

Learn about time  
from lichen and moss,  
from the thick mats of mycorrhizal fungi  
spreading underground,  
from the Western red cedar,  
roots gripping the shifting hillside  
as the wedge of light  
widens, travels up the trunk--  
learn from a cedar splitting its own heart  
with its own strength.

Heavy with age, forest silence  
shimmers, might be measured  
as particle instead of wave.  
Here, moss and bark, fern and rotting wood  
hold centuries of bird calls,  
animals cries, human voices,  
weaving them into the shhhh of wind,  
the blursh blursh blursh of the creek,  
the crash of a tree falling, a branch  
snapping, a cone sprinkling seeds  
on the forest floor.  
Here, silence has weight and texture,  
can be tasted and touched,  
taken into the body like the gold drops  
of sap dripping from a branch,  
like the sweet of violet leaves.

Here, silence lets the heart question:  
How does moss, dry  
for a season, revive in rainwater?  
An orchid sprout from a seed,  
blossom without leaves or roots?  
How does a wren shape its nest,  
a kinglet know when to migrate,  
a bear when to sleep?  
How does a body learn to want  
change--the slow evolution  
of new life forms--and then accept  
its own dying, say yes  
to the single cell that mutates,  
multiplies, metastasizes?

## II. Cosymbionts

Geologist. Hydrologist. Botanist.  
Saprophyte. Raptor. Arthropod.  
A watershed broken into pieces  
by specialists.

Like science, poetry is an art  
of dissection--it is the tiniest part  
the poet wants--fern spore, leaf pore,  
bud scar, the veins of an insect wing  
catching the sun, the barbs and rachis  
of a swallow's feather in flight.

Like science, like poetry, love  
for a place is an art of dissection.  
The fingertip strokes the smooth pockets  
of *Lobaria oregana*. The eye  
sinks into the calypso orchid's silks.  
And at dusk, the last note of a thrush  
trembles in the ear.

Forest debris, from the French *debriser*:  
to break into pieces--  
a creek stone a curl of moss  
a thread of lichen a spotted owl  
a coralroot log jam earth flow  
a cedar splitting in half  
as the crack under its roots widens--  
analysis of a circle  
can begin anywhere:

with the fir fallen after a storm  
and the slow decay of bark and heart--  
habitat for fungi, nurse log for new saplings,  
shelter for voles.

with the red-backed vole  
gathering fir seeds, digging truffles,  
leaving droppings rich in fungal spores.

with the fir seed sprouting, root hairs reaching  
through rotting wood, meeting mycelium,  
tapping the mycorrhizal mat.

with the fungal hypha wrapping the fir's roots,  
exchanging water and nutrients  
for carbohydrates.

Fallen log, red-backed vole,  
truffles, mycorrhizae--  
how else, except by breaking down,  
can a researcher understand a biosystem?  
How else, except by keeping whole  
through breaking down can a forest grow?

### III. Threads

Light gatherer, shade tolerant climax tree,  
the Western hemlock spreads needles  
flat to the canopy.  
Underneath, a coralroot's orange stalk  
draws light-manufactured sugars  
from the hemlock, opens  
to a spray of red and purple striped orchids.

\* \* \*

Creek music: thunk thunk thunk  
deeper than the heartbeat of stones,  
a baseline thrums  
under the splash and cymbal crash  
of water splintered on rock.

\* \* \*

Firs weave *now* into seed and cone,  
root and hypha, needle and branch,  
layer *then* thick as duff  
on the forest floor.

\* \* \*

Seamless, water opens, slides  
over rock, closes again.  
The flung drops scatter white,  
catch sun, foam,  
vanish downstream.

\* \* \*

Moss hangs like mist, drops scrims  
from maple and yew,  
hemlock and fir, filters sun,  
filters time. Silent and old  
as the trees they grow on,  
moss tapestries began  
as single spores caught  
in a sapling's leaf-scar.

\* \* \*

Roots grow deep, not open  
in light and air, but lapped, cramped, crowded,  
jammed and crossed, rigid, ingrown;  
arthritic fingers clutch earth, seek water, cradle stones.

\* \* \*

Gravel bar: without the bead lily's hexagram  
or the fir cone's logarithmic spiral--  
without the sonnet's symmetry

or the haiku's clipped syllabics,  
winter floods pack cobble in patterns.

\* \* \*

Under the paper thin skin,  
the yew's inner bark burns red--  
black coals broken open, glowing.

\* \* \*

Vine maple winds through the forest,  
turns hands flat to the sun.  
Light pools in the palm  
the way water pools  
in the lungwort's lobes.

#### IV. Forest Time

Water time. Soil time. Tree time.  
One by one, cone scales open,  
drop seed. Roots reach for water,  
hair by hair, into the fallen log.

Mite time. Orchid time. Spore time.  
Corm and fungal hypha meet,  
exchange nutrients. A single flower  
rises leafless from the duff.

Owl time. Bear time. Vole time.  
Truffle spore and blackberry seed pack  
fecal pellets, while one by one  
the old firs fall to logging.

Moss time. Stone time. Creek time.  
The wild crash of flood  
in winter, the crack of log on stone,  
the shifting of boulders;  
the silk of water on mossy rock,  
the slow circling of leaves  
in summer--even in eddies,  
creek time moves faster  
than tree time.

Storm time. Wind time. Fire time.  
The pungent sap of a splintered bole  
glitters in sun, stings the nose.  
The singed bark of an old growth fir  
thickens as the furrows,  
lined with black velvet, deepen.

Earth flow, debris slide, stream erosion.  
Standing or fallen, a fir slows time. A creek  
releases it. And a stone?  
ground round by the knock  
knock knock of water and rock,  
scoured by sand, colonized  
by lichen, worn by acid,  
grain by grain, a stone unlocks time.

## V. Drainage Basin, Lookout Creek

Shaped by water and fire,  
light and time, the shifting of plates,  
and the past and present of man,  
the Blue River Experimental Forest  
was established in 1948,  
renamed in 1953 for Horace Justin Andrews,  
Regional Forester.

What does it mean to name a place,  
to name a body of water--a lake,  
a river, the smallest ribbon  
seeping from a mountain-side?  
The official map offers a handful of names:  
Cold Creek, Longer Creek, Snag Creek,  
Mack Creek, Devils Creek--  
a network braiding into Lookout Creek,  
mingling with the Blue River  
in the Blue River Reservoir,  
stopped by a dam.  
Elsewhere, the map designates  
whole webs of creeks as research sites:  
*Watershed 1. Watershed 2. Watershed 3.*  
Studded with stakes, vessels, tubes,  
towers, tools for measuring  
air flow, water flow, nutrients, vegetation,  
creeks tell researchers everything  
but their names.

Dated, numbered, aluminum tags mark  
a decomposing log or a spotted owl's nest tree.  
When the sun shifts, the tags catch the light,  
gleam for a moment, rare as the silver flowers  
of the phantom orchid. Human ephemerals,  
they record love for this forest,  
love and hope: some one else will read  
this log, this hillside, this creek,  
in two hundred years.

\* \* \*

Owl Crew Report:  
Lower Browder  
10:24 leave truck/canoe  
11:00 begin  
11:28 ♂ 4 note response  
11:30 ♂ visual  
M1 ♂ ate  
M2 ♂ delivered 1998 nest tree  
M3 ♂ ate  
12:30 depart

Four notes, rich, melodious--  
a human voice calls down  
a spotted owl. Silence. Then response--

four notes, pause, and four notes again.  
Forest music.

Incongruous, the little white mouse  
quivers on the branch,  
nose twitching, running first one way  
then the other, then still,  
waiting. Claws extended,  
the owl swoops, takes the mouse  
in a silent velvety glide, a quick sweep of wings.  
The owl crew watches,  
then follows him--the Lower Browder male,  
tagged when he was a fledgling,  
now mate to the Lower Browder female  
who has used this nest site since 1990.

\* \* \*

Log Decomposition Site.  
Over one hundred logs six meters long:  
Douglas fir, Pacific silver fir, western hemlock,  
western red cedar: weighed; sampled for density,  
moisture content, nutrients;  
tagged; placed; checked at intervals.  
Days. Months. Years.  
While moss blurs the saw's flat cuts  
and ambrosia beetles bore through fermenting bark,  
while hemlock seedlings take root  
in rotting wood, data  
is entered into a computer. Indifferent  
to the hands that measure them,  
the logs sleep, the air thick  
with their silent dreaming, their patient  
un-becoming. This is not a graveyard,  
not a site of death or decay,  
but a site for storing and unstoring and restoring,  
releasing and composing:  
log recomposition site.

\* \* \*

In an old growth forest,  
not even the earth is still:  
stakes set four square  
trace trapezoids twenty years later.

A science of debris:  
a bit of bark, a scrap of lichen,  
a dropped needle or cone,  
a stone shifting on the gravel bar,  
a shed snake skin, a wasp  
depositing eggs near the wood borer's larva--  
pages torn from a book--read by a research.

Each stake stumbled upon in the middle of the forest,  
each aluminum tag and magenta flag,

each rope reaching up into the canopy  
or pipe reaching down into the creek  
tells the walker: Someone has measured  
this flow, tested this soil, weighed this log,  
tells the walker: someone loves this place.

## VI. Clearcut

A wealth of brush:  
vine maple, hazel, alder, willow,  
broom, bracken, iris, daisy,  
blackberry, and cascara grow wild.  
Young firs rise like fountains,  
the tips of their branches heavy  
with new growth, while finches flicker  
in the thickets. Hawks ride thermals,  
their dark shadows fingering  
the tips of the firs,  
and dragonflies shimmer  
on wings like silk threads.  
Here, six years after the cut,  
it is not the earth that is naked,  
but the trees left standing at the edge,  
trunks bare to the crown.  
This first flush of new growth  
pulses, hides soil scraped clean  
of debris, leached, burned over,  
fungal mats destroyed.  
Later, when the new firs grow thick,  
shade out the brush,  
the silence of monoculture  
will fall over this worked land.  
But for now, this hillside sings.

## VII. The Art of Science

Listen to the sounds of the forest,  
the sounds of the land, the sounds  
of a place loved and touched  
by human hands. A boulder rolling down  
a hillside, stone nudging stone in creek water,  
the shudder of an earthquake.  
Trill, whistle, hum, grunt,  
growl, chatter, coo. Pods snapping  
in summer heat, beetles  
chewing rotting bark. Bear bells,  
laughter, the grinding of gears  
as a log truck winds down the mountain,  
a whispered promise.  
Geophony. Biophony. Anthrophony.  
A forest symphony.

Let the words of science be brittle  
as yew bark, sticky as monkeyflower  
three-pronged as a fir cone--  
let the words of science be honed by use,  
shaped by lips and tongue,  
rounded, smoothed, cut, faceted  
as stones tumbled in creek water  
in winter floods--feathery  
as moss silked with rain,  
papery as the lobes of lichen  
fallen to the forest floor,  
spongy as an old growth log  
slowly leaching nitrogen into the soil--  
let the words of science be things  
and the imagination play with etymologies:  
*mycorrhiza*: fungus root  
*cotyledon*: *kotyle*: cup  
*plicata*: pleated  
let the tongue linger over *involucra*,  
*fascicle*, *bract*, the teeth crunch on  
*clastic*, *schistosity*, *calyx*.

Begin with love, a composite  
of science, art, imagination,  
and the pure world of the senses--  
with the things the hand can touch:  
the peeling papery bark of a yew,  
the curve of a snail shell,  
the beard lichen's wiry hair--  
with color and taste and smell  
and the call of a thrush at dusk,  
the velvet glide of a spotted owl.

Begin with love and the questions  
the heart asks: why stones  
arrange themselves in lapped patterns  
on a gravel bar. How old growth trees  
resist the quickly mutating pathogens

that attack them. Where the orchid  
lacking chlorophyl gets its sugars.  
Let the body then the heart learn  
the forest and remember:  
Data collection, computer analysis,  
digitalized imaging begin  
with hand and eye, tongue, nose, and ear.

And while the pencil hovers  
over the page or the hand grips  
a water gauge, the scientist  
has time to stroke the willow leaf's silk,  
breathe in the lemon scent  
of chanterelles, follow the arc  
of a swallow's flight.  
The artist, too, has time to taste and touch,  
and then to study the moss spore's journey  
from protonema to gametophyte, time  
to trace root and hypha to fir  
and fungus, count  
the fir cone's three-pronged bracts.

### VIII. Design

Any language can be broken  
into pieces: brush stroke, half note,  
phoneme, pi.

The language of the forest breaks  
itself. Seed spore root needle leaf  
thread of moss lobe of lichen  
chips of bark insect wing egg shell  
chrysalis feather bone scat--  
each bit of debris a letter,  
a word, part of a syntactic unit.

Creek water runs close to earth's bones.  
Pebble and stone, riffle and pool,  
eddy and fall: Each winter the gravel bar shifts,  
and in spring, the eye  
learns a new creek. To love  
a watershed is to know:  
next year, this branch, this flower,  
this stone won't be *here*.

Even in abstract painting or music--  
color shattered on canvas,  
a line, a cube, an atonal scale--  
the eye and ear find order  
in the rhythm of brushstroke,  
the rhyme of form, the length  
of silence between one note  
and the next.

And in the forest--fallen tree,  
shred of lichen, broken limb,  
stripped cone and pile of scales,  
rotting leaf, shed snake skin,  
scattered spore--in the forest,  
the body weaves tapestries  
of light and sound.

A forest can't choose, gives itself  
to science or art the way it gives itself  
to fire or flood: indifferent,  
the inner core untouched, it sings  
to itself. Dead wood is not dead.  
Press your ear close.  
Listen to the beetles chewing.

Coda

The poet asks: What is the smallest bit of matter?  
and the scientist replies: A string.

String. Knot. Web. Watershed.

Only in the mind can there be  
one word, one note, one brushstroke;  
only in the mind can there be one orchid,  
one owl, one vole, one fungus, one fir

Only in the mind can there be one forest.

compose decompose  
pause  
recompose