Nature Trails

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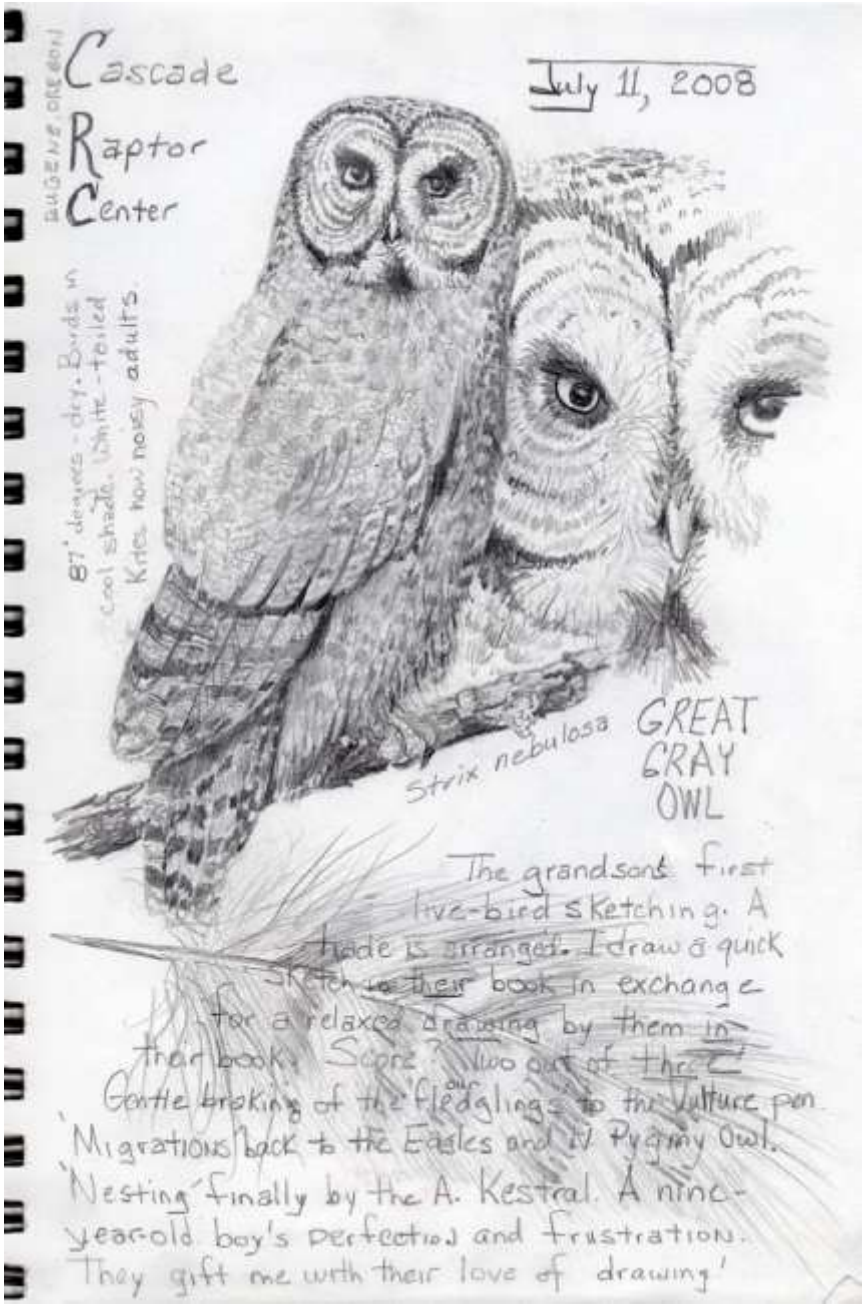

Conveying Nature in Personal Sketchbooks:

The Soul of Sketchbooks

Kristine Kirkeby, Artist and Illustrator

Eugene, Oregon

Friday, 17 January 2014, 7:30pm,

Room 100 Willamette Hall, UO Campus

Kristine Kirkeby is a passionate person. She is passionate about art. She is passionate about biology. And she is passionate about teaching the rest of us to connect to the natural world through art. For most people these passions might seem like currents flowing in opposing directions. But Kris Kirkeby is not most people---she unifies the languages of art and science as a professional scientific illustrator.

For Kirkeby the twin languages of biology and science were established early, perhaps an outcome of the extreme weather in rural northwestern Minnesota. In the winter when it was too cold to go out, her mom sent her off to draw, and in spring and summer she was sent outside to play in the woodlands around her parent's small farm. Like most kids she was especially fond of a forbidden spot, a wooded creek she calls Little Mississippi, which is in fact in the upper reaches of the Mississippi River drainage.

Following graduation from high school Kirkeby went to Bemidji State College and then to the University of Minnesota, but she finished most of her biology classes at Nicolet College in Rhinelander, Wisconsin. Trained as a histologist, her career as a professional scientific illustrator began when, in a USDA insect physiology laboratory and then in a forest genetics lab, the researchers found out she could draw. Her passion for art soon asserted itself, and she moved to the University of Wisconsin, Oshkosh, where she completed a fine arts degree.

Kirkeby then returned to Minnesota, moving to Minneapolis-St. Paul. Professionally trained in both biology and art, she convinced the University of Minnesota College of Biological Sciences to create the facility 'Biological Sciences Art Services.' As Director of that facility she worked for seven departments doing science-related art, including graphic design, scientific illustration, and photography. As University funding cuts became more common the facility was pushed to become self-supporting. Change was imminent.

So after 14 years at the University of Minnesota, Kirkeby became a freelancer. Deciding it was time to give back, she designed an art and biology curriculum for K-12 schools, appropriately called "Art in the Natural World," and was accepted to the Minnesota State Arts Board Artist-in-Residency Program. She traveled the entire state of Minnesota, literally from Iowa to Canada, Wisconsin to the Dakotas, in a van in the company of preserved mammals, birds, insects, plants, and ten microscopes. This led one of her young students to ponder out loud: "Ms. Kirkeby, if you crash and your trunks fall out, what will people think?"

In 2000 her at the University of Minnesota, and they decided that Eugene was where they wanted to live. Kirkeby transferred her prodigious and far-reaching skills to the southern Willamette Valley, where she taught in classes in the University of Oregon Talented and Gifted Program, the Sweet Home After School Program, and nature drawing classes at the UO Museum of Natural and Cultural History and Mt. Pisgah Arboretum. She modified her 'Art in the Natural World' curriculum for the Lane County Audubon Society, creating the program called 'Audubon in the Schools', which to date has reached about 7000 students. Kirkeby is justifiably proud of those days as an educator. She puts it this way: "I taught kids not only to look, but to really *see*."

Kirkeby's illustrations have graced countless scientific textbooks and journal articles, and her art has appeared in juried shows with the Salem Art Association, the Karin Clark Gallery in Eugene, and most recently in "Focus on Nature XIII" at the New York State Museum. Her "retirement" as a professional illustrator has freed her from black and white and she now works in watercolor as she "invites viewers to take a hiatus from broad horizons and enjoy the unnoticed minutia of our natural world."

The Guild of Natural Science Illustrators (GNSI) is a national organization that brings together artists who otherwise, by the nature of their work, tend to be isolated. Kirkeby has been a long-time member and served as President for two years. While interacting with fellow GNSI members she found that most were like her in being passionate about the loose sketches that are the beginning of a final illustration. The sketch initiates an intense incubation period in which the artist connects deeply to the object and visualizes it as a completed whole. An idea is hatched. If career illustrators connected so deeply with their sketches, could "regular" folks capture this as well? So she solicited personal sketches from her professional

colleagues and Kirkeby's program 'The Soul of Sketchbooks' came to be.

Clearly the Eugene Natural History Society has in our midst a rare individual possessing expertise in art, natural history, and education. Are you fascinated by the artistic connection to nature? Are you looking for ways to more deeply experience the natural world? Have you considered extending your journaling with sketches? On Friday, 17 January, at 7:30 pm in 100 Willamette Hall, Kristine Kirkeby will present **"Conveying Nature in Personal Sketchbooks: The Soul of Sketchbooks."** Join me there; this will be a wonderful show. Tom Titus

Out and About

"Out & about" is a periodical encouragement to Eugene Natural History Society members to get out and experience our magnificent Oregon. Photos and descriptions provided by David Stone.

Skiers in the Waldo Country

For a unique winter experience, load up your cross-country skis and head for the Waldo Country. The road into Gold Lake is closed to cars and snowmobiles and makes an easy day trip. From that road you can proceed to Gold Lake itself (where there is a shelter stocked with firewood) and loop back past Marilyn Lake, or for a longer, more difficult trip, take the side trail to the Maiden Peak shelter.

Ice Floats by John Carter

As I sit at my dining-room table and look out the window on this early December day I am watching the snow come ghosting down, each flake tumbling this way and that, the sum of untold millions of them creating a blanket six inches deep and growing by the hour. It's a beautiful, peaceful sight, from in here in my warm house.

Looking at the whiteness, the essence of purity, makes me think about the miracle that is water. We don't think about it as miraculous because it's so common, but right now I *am* thinking about it, and realizing yet again that the way it behaves is anything but common.

One of water's many strange properties is what happens when it changes from liquid to solid. The solid phase stays on top of the liquid phase. Ice floats. So what, you say, everybody knows that. But wait. Lots of other compounds have a liquid phase and a solid phase, and when they freeze, what happens? The solid phase sinks. That's true for most other pure liquids. Take hexane for example. It freezes from the bottom up.

Suppose water suddenly joined the majority – switched molecular parties as it were. What would happen to a lake if a cold snap like the one we are in while I write this lasted too long? As ice formed it would sink to the bottom. The surface of our lake would never develop that solid skin. Ice-skating would be a thing of the past. But even worse, that skin, that sheet of ice we are so used to, would no longer be there to insulate the rest of the water in the lake. Water at the surface would continue to freeze, the ice would sink, and eventually the lake would

freeze solid. So would the fish and their eggs, the aquatic insects, the crayfish, the frogs, the pollywogs. So would everything living in the lake. The last ice age might have frozen the oceans solid.

You can see where I'm going by now. This simple but strange property of water – its solid phase being less dense than its liquid phase – is critical for aquatic life in areas where temperatures routinely get below its freezing point.

To get at why water is so different we have to think about how the water molecules in our lake interact with each other. You might be surprised to learn there is a lot of empty space in a glass of water. Here's a tortured analogy that might help make sense of that. Imagine that you are in a big room on a space ship in a zero gravity situation. There are hundreds of others floating around in the room with you, and you all have tiny, weak magnets attached to your hands and feet, aligned so that hands repel hands but attract feet, and feet repel feet but attract hands. You have the following instructions: bend at the waist, twist your upper body to the side, hold your arms out straight, spread them but keep them above your head. Keep your legs straight but spread apart. You now approximate a gigantic water molecule, as far as how you interact with the others in the room. Now, let the magnets do their work and form as many weak connections to other persons as you can for ninety percent of the time you're in the room. The other ten percent of the time you can drift around by yourself, but you have to keep that weird posture. The magnets are so weak a hand and foot will only attract each other when the arm of one person and the leg of the other person are in a straight line. As soon as one moves a little so this line is no longer straight, the attraction breaks. So ninety percent of the time you'll be touching up to four other persons and each of them will also be touching up to four persons (one of whom is you) but for the other ten percent you'll be free, drifting around between groups. More and more persons are let into the room, each with the same set of magnets and instructions, until the room is full. If you have that picture firmly in mind, now think about how many more persons could fit into that room if nobody had magnetic attractions for anybody else and the instructions were simply to get as close together as you can. Clearly, under the first set of instructions there is quite a bit of empty space in the room.

Now back to water. Each individual water molecule *can* form weak interactions with four others; two of them interact with the central oxygen atom, and the oxygen atoms of the other two interact with the two hydrogen nuclei of that central water molecule. And each of the four molecules our first one is interacting with can also interact with three other water molecules. The arrangement in this group is defined by the water molecule's shape, and the properties of the hydrogen and oxygen atoms that it is comprised of, and one result is that the water molecules are not as close together as they could be if they just nestled next to each other like cordwood. I say '*can*' because these interactions are ephemeral in water's liquid state, forming and breaking many, many times a second. But at any instant *most* of the molecules in a volume of liquid water will be involved in this four-handed molecular square dance. I say *most* because in the liquid state about ten percent of the molecules are unattached, zipping around in that empty space, like you were when you didn't have anybody else attached to your hands and feet. So yes, there is a lot of empty space in a glass of liquid water.

When water *freezes* it's as if the caller in the square dance said, "Stop! Everybody get in a group!" In the solid state there are no floaters, every water molecule is involved in an interaction with four others. So if you have a given *number* of water molecules, the ten percent that were unattached and *between* groups now join a group, and the total number will occupy about ten percent more space in the solid state than in the liquid state. So there's even more free space in ice than in liquid water. This is why your outside water pipes break if you, like me, sometimes forget to drain them and then the temperature goes to 5 degrees above zero as it's supposed to tonight: water expands when it freezes.

Same *number* but larger *volume* means lower *density*, so ice is less dense than liquid water, and it stays on top of the lake instead of sinking to the bottom. So when you're up on Diamond Lake this winter catching trout through a hole in the ice, or when you're skating on a frozen pond, you can be glad that water is weird.

Wilderness With a Twist by Reida Kimmel

Europe, settled, farmed and urbanized for all the centuries of our recorded history, torn by wars, religious strife, plagues and pogroms, is not a place we would associate with wilderness. I was therefore perplexed when I read about the Re-Wilding movement in Europe. How could such a densely populated continent, whose ecosystem is so thoroughly manipulated, ever see a return of 'natural' nature? Could advocates find spaces where land

could be returned to a semblance of its ancient state? In fact, there are areas, never modernized, where traditional farming is dying and not being replaced by industrial development. From Poland, in the northeast, to the Balkans and the mouth of the Danube in the southeast, there are truly vast tracts where such iconic species as the European bison, wild boar, bears, lynx, wolves, red deer, roe deer, beavers, and otters abound. To the west, on the Iberian Peninsula, chamois, lynx, a threatened eagle species, and the world's highest flying bird, the vulture *Gyps rueppelli*, live not far from land that has been peopled and farmed for more than eight millennia.

Rewilding Europe and the World Wilderness Congress are aiming for the creation of ten wildlife and wilderness areas encompassing over two million acres by 2020. They hope these areas, created from abandoned land, could provide sustainable sources of income for marginalized and dwindling local populations, through appropriate tourism and the revival of traditional agricultural practices. This model, factoring in the human population instead of trying to exclude it as we do in North America, is characteristically European. It says we must include people because humans have been having an impact on the environment for at least the last forty thousand years.

Presently Rewilding Europe is focusing on increasing protected acreage in four natural areas. The Danube Delta in Romania and Ukraine is very much an area of rural poverty, and yet rich in ancient buildings and quaint villages. Its Letea Forest has trees seven hundred years old, and the Delta itself is one of the hemisphere's most important stopover places for migratory birds, an ideal area to see the development of tourism. Birds, history, an ancient forest, room to roam: what could be better?

Well, perhaps the Carpathians. Over a million acres of land in the Eastern Carpathians in Poland, Slovakia and Ukraine already receive a degree of protection. To the south, the Romanian Carpathians also have wilderness potential. Native European species, long extinct in Western Europe, thrive here, including Europe's largest population of its native bison, the wisent.

Two areas of focus for the re-wilding movement are fascinating because they lie in densely populated Western Europe. Along the border of Spain and Portugal, the Western Iberian Peninsula has seen the collapse of traditional agriculture and the abandonment of land. Former fields are now dense thickets of fire-prone brush. This is a land where fire has always played a prominent role. Without periodic fires native plants are smothered and unable to reproduce, with a devastating effect on native fauna. Traditionally, grazing animals, cropping, and prescribed fires kept the brush controlled. A suggested alternative to farming is to create tree plantations featuring such fire-prone species as eucalyptus. This is a recipe for ecological disaster. Instead re-wilding advocates want to introduce grazing by ancient breeds of cattle and horses to keep the vegetation controlled in the way that it has been for thousands of years. You readers are shaking your heads and thinking "horses and cattle! Horrible! They will ruin the land!" But cattle and horses truly belong here. Both domestic species were developed from indigenous wild ancestors. This is an ecology that has known the trample of hooves for millions of years. The livestock is harvested for meat. But there are also native predators. Portugal has two to three hundred fully protected wolves. Farmers get compensation for losses due to predation. Spain boasts a growing population of more than two thousand wolves, also protected. Again, farmers are compensated for losses.

I have not heard the re-wilding advocates talking of the return of Spain's magnificent chestnut and oak forests, which flourished in the centuries before Columbus. Perhaps that dream is for another generation, but further north, in of all places, Holland, there is some wild dreaming going on. Between 1916 and 1968, the Zuiderzee, a huge body of water on Holland's coast, was closed off and drained. Some of the new polders became farmland. Others were destined to be industrial developments. This was a totally man-made landscape in one of Europe's most populous nations. The Oostvaardersplassen was one of the last areas to be reclaimed from the sea. Lying only twenty miles from Amsterdam, it was to be an industrial area. The oil crisis of 1973 intervened, and the fifty-six square mile polder remained a place of shallow pools, inlets, and swamps. It was left alone. Flora and fauna invaded. The land forested itself with willows. When white-tailed eagles, great egrets, common spoonbills, European bitterns and great flocks of graylag geese moved in, the Oostvaardersplassen was declared a special protected area for birds. Now the Oostvaardersplassen is a national park. Plans to enlarge its acreage have foundered due to expense, but these problems could be overcome and the area connected by a corridor to a protected natural area in Germany. Heck cattle, a modern breed created to mimic the extinct aurochs, and semi-feral Polish Konik ponies graze the polder alongside red deer [our elk]. The Dutch are attempting to make this comparatively tiny 'wilderness' as much like genuine

nature as possible. Normally thirty to sixty percent of the large herbivores die annually. There is no attempt to harvest meat or to control reproduction. The nation lives in hope that wolves will return after being absent since 1640. It's only a matter of time. There are growing protected wolf populations in Germany. Wolves are now established in France. This summer there was exciting news. The first wolf, sadly killed by a car, was found in Holland. Even more exciting was the genetic analysis, proving him to be from the Balkans. Male wolves certainly do travel in search of new territories.

Close to my temporary home, advocates for natural spaces are attempting to restore areas of the fens, the huge wetlands that covered much of Cambridgeshire and Lincolnshire before being drained for farmland. Dikes, ditches, straightened rivers and pumping stations exposed the rich peat soil, creating a manmade landscape, not unlike Holland's. Now water is pumped into the restored fens and Konik ponies graze the reed beds, sedges and willows. It might not be your kind of wilderness, or mine, but re-wilding can do wonderful things to make Europe a better place.

Events of Interest in the Community

Lane County Audubon Society

You can access the current issue of *The Quail*, LCAS's excellent newsletter, from their website: http://www.laneaudubon.org/. A summary of their upcoming monthly meeting can be found there, as well as many other interesting avian tidbits. **See the February issue of *The Quail* for a summary of the Lane County Christmas Bird Count.**

Tuesday, 28 January, 7:30 pm. Spotted Owl Research In The Willamette National Forest: Population Trends And Current Status. Steve Ackers is the field crew leader of the Northern Spotted Owl project in the upper McKenzie watershed. An expert in wildlife population monitoring and mathematical modeling of demographic parameters, Steve has been studying the spotted owl in the H. J. Andrews Experimental Forest in the Blue River/McKenzie Bridge area for about 14 years. He will talk about spotted owl ecology, his research objectives, and the relationship between Barred Owls and Northern Spotted Owls.

Mt. Pisgah Arboretum

Saturday, 18 January, 10 am-noon. Life Among the Mosses Walk. Botanist David Wagner will tell moss stories and weave lichen yarns to help us understand the elfin world of mosses, liverworts, and lichens. Rain or shine. No registration required. Meet at the Arboretum Visitor Center. Fee: $5. Members free.

Friends of Buford Park and Mt. Pisgah

Saturday, 18 January, 2-5 pm. A River Runs Through It - Restoring the South Meadow Floodplain. Five years ago the Friends completed a large-scale river restoration project in the South Meadow of Buford Park. Join Jason Blazar, Stewardship Coordinator, for a tour to see the enhanced floodplain habitat, home to Chinook salmon, Pacific lamprey, western pond turtles and other threatened wildlife.

Sunday, 2 February, 1-4 pm. TNC's Willamette Confluence Preserve, Lower Middle Fork Complex - A New Perspective. John Helmer has permission from TNC to tour this section of the Willamette Confluence. You'll see more of the extensive gravel ponds and hear about TNC's plans to restore their connection to the Middle Fork of the Willamette. Despite the years of mining, it's a beautiful portion of the Preserve. Don't forget your binoculars; there are lots of birds on the ponds.

Nearby Nature Go to http://www.nearbynature.org/events to view NN's calendar, or call 541-687-9699.

Monday, 20 January, 8:30 am-3 pm. No School Day Adventure: Rock n' Fossil Fun. Can you "read" a rock? Discover the stories told by stones. Model the rock cycle, make imprint fossils, and take a hike to find your own special stone. For kids 6-9 years old. To register your child contact Beth Stein or Jo Niedeck at 541-687-9699.

Native Plant Society of Oregon, Emerald Chapter

Thursday, 16 January, 7:30 pm. Living History: The Ancient Bristlecone Pines. Charlene Simpson will tell about a trip she, Rhoda Love, and Veva Stansell rook to the Ancient Bristlecone Pine Forest in the White Mountains near the California-Nevada border. Location: Conference Room at Lane County Mental Health, 2411 MLK Blvd. 541-349-9999 for more info.

North American Butterfly Association, Eugene–Springfield Chapter

Monday, 10 February, 7 pm – refreshments, 7:30 pm – presentation: Organizing a Collection of Three Million. Dr. Christopher Marshall is the curator of OSU's arthropod collection of almost 3 million specimens, representing tens of thousands of species. He will speak to us about how he is digitizing and cataloging the extensive collection, so that researchers anywhere in the world will soon be able to pull out a "virtual drawer" and examine images of any specimen in the collection.

The University of Oregon's Museum of Natural and Cultural History

Exhibit Hours: Tuesday through Sunday, 11:00 am - 5:00 pm

Tuesday, 7 January, 4-5 pm. New Volunteer Open House. Explore the many volunteer opportunities available at the museum! From interpreting exhibits to leading educational tours to working in the museum store, MNCH offers a variety of fun ways to get involved. Come, eat cake, meet staff, and learn more.

Current Exhibits

- Cruisin' the fossil freeway with artist Ray Troll and paleontologist Kirk Johnson.
- Site Seeing: Snapshots of Historical Archaeology in Oregon.
- Oregon - Where Past is Present. 15,000 years of Northwest cultural history and 200 million years of geology.
- Tradition Keepers: Cornhusk Weavings by Kelly Palmer and Joy Ramirez.

WREN

Go to http://www.wewetlands.org/ for news of upcoming events, or call 541 338 7047.

Tuesday, 14 January, 9-10:30 am. Wetland Wander. Participants are asked to meet at the Stewart Pond Overlook, the gravel parking area east of the intersection with Bertelsen Road on Stewart Road in Eugene. Bring water, dress for the weather, and wear sturdy shoes. WREN will provide binoculars.

We welcome new members! To join ENHS, fill out the form below. Membership payments allow us to give modest honoraria to our speakers, as well as to pay for the publication and mailing of *Nature Trails*. Our web address: http://biology.uoregon.edu/enhs

MEMBERSHIP FORM

Name_____

Address_____

City_____State & Zip_____ Phone_____

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Annual dues for renewing members are payable in September. Memberships run from September to September. Generosity is encouraged and appreciated.

The following information is voluntary, but appreciated:

Would you like to: __lead field trips __teach informal classes __work on committees __

What would you like to hear a talk on? _____

Do you have special experience in natural history: _____

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If you now receive NT through the mail and you wish to begin receiving it electronically, contact Ruth BreMiller at brem@oregon.uoregon.edu.

ENHS Schedule of Speakers and Topics for 2013

17 Jan. 2014 – Kristine Kirkeby	– Conveying Nature in Personal Sketchbooks
21 Feb. 2014 – Bob Doppelt	– The Social Costs of Climate Disruption
21 Mar. 2014 – Robert Fleming	– From the Impenetrable Forest to the Namib Desert: Biodiversity in sub-Saharan Africa
18 Apr. 2014 – Richard Pugh	– Meteorites Rock From The Sky
16 May 2014 – Robin Hartman	– Energy from Waves: A Consideration of the Issues

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