"WHETHER WE AND OUR POLITICIANS KNOW IT OR NOT, NATURE IS PARTY TO ALL OUR DEALS AND DECISIONS, AND SHE HAS MORE VOTES, A LONGER MEMORY, AND A STERNER SENSE OF JUSTICE THAN WE DO."

—WENDELL BERRY

Above: Robert Dawson, *Former Colorado River wetlands, Mexico*, photograph; *Previous page:* Robert Dawson, *Polluted New River, Mexicali, Mexico and Calexico, California*, photograph

THE GLOBAL WATER PROJECT

Robert Dawson

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There is a growing awareness that the world is entering an era of a water crisis of global dimensions. From a "war for water" over the corporate takeover of water resources in Bolivia to fighting the displacement of tribal people by large dams in India local water issues are beginning to have global implications. The inspiration for this project came during the summer of 2001 when Robert Dawson traveled with writer Jacques Leslie to follow activist Medha Patkar in her effort to stop the construction of the Sardar Sarovar dam on the sacred Narmada River in western India. Fifteen years after receiving a Goldman Environmental Prize, Medha is still struggling to improve the lives of thousands of tribal villagers who are being displaced by the dam. It became clear to Dawson that this epic battle over water was symbolic of other struggles being played out throughout much of the world. What these issues represent help define the critical water issues of the twenty-first century.

Without water, life as we know it ceases. We have the same amount of water on earth now as we did when our planet was new. We literally are a "Water Planet." However, more than a billion people today do not have access to clean drinking water. Within the next ten years 40% of the world's population

Robert Dawson, *Marsh restored from agricultural runoff near the mouth of the Colorado River, Mexico*, photograph

will live in water-stressed countries. Future wars may be fought over water instead of oil. Armed conflicts have erupted over water in California's Owens Valley in the 1920's and the Arab-Israeli war in 1967. India, Pakistan and Bangladesh have come close to war over water disputes. And former U.N. Secretary-General Butros Boutros-Ghali said " the next war in our region will be over the waters of the Nile, not politics." In 2000, the populace of the third largest city in Bolivia rioted in the streets against police and soldiers over the privatization of their water. It was an ominous wake-up call from the people of Cochabamba. A recent United Nations report predicted rising demand for water is likely to threaten human and ecological health in many countries for generations to come.

In 1999, Dawson traveled to Vietnam and Cambodia to explore the site of one of the most divisive wars of his lifetime. After spending twenty years photographing water throughout the American West, Dawson used this trip to explore water in the broader international context of Southeast Asia. He began to understand that much of what he learned in the American West was relevant for much of the rest of the world as well. After his 2001 trip to India it became clear that the issue of water was global in scale and he then began his Global Water project. Dawson has made recent explorations of global water to Iceland during the summers of 2004 and 2005 where he photographed the struggle over the construction of a vast dam complex in the Central Highlands. In 2006 and 2007, Dawson has been examining where the oversubscribed Colorado River dries up in northern Mexico, battles over indigenous water rights along the Chixoy River in Guatemala and along the Klamath River in Northern California and water issues throughout South America. This study will eventually result in a large-scale book.

Robert Dawson, *Mayans who survived a dam flooding their village, El Naranjo, Guatemala*, photograph

Robert Dawson, *Shrimp Farm, Cam Rahn Bay, Vietnam*, photograph

Robert Dawson, *Drip irrigation, San Joaquin Valley, CA*, photograph

ODE TO WATER

for the Water Protectors

Adam Cornford

I.

Origin
immanent
aleph of life
colorless
thief of the spectrum
translucent as spirit
we are inside you
as you are inside us
deep and deeper
sidereal blue
ocean's green malachite
repeated
in the lungs and intestines
Primeval and mineral
you fill the womb
where the embryo grows
like the first archaea
under a sky of blood
You fill our hearts
red moons
driving the double tide
through our arteries
through dense mangroves of muscle
to the shores of the skin.
You replenish
the green distilleries
of rose and redwood
you ascend inside cornstalks
like filaments of light
and thread the oak's
lichened labyrinth
you bathe the delicate feet of rice
and the heron's claws
as you travel always
where the planet sends you.

II.

Water
you fall in trillions
of vertical mirrors
from cloud cordilleras
you spin down tiny cogwheels
toothed with ice
in winter's machine
then you ascend again
from morning leaves
from the map's mirrored veins
from the sea's laboring shoulders
from our breath
How could we ever
exhaust you?
How could we torture and scar
your immense
four-dimensional
seraphic body?

III.

But that's what we're doing
water, all of us
trapped like you
in capital's everyday circuits
passing you
through the pipes
of stupidity factories
shitting and sweating
into your clarity
the gray ash of power
greed's acid sludge
trapping you
in overheated sky
as violent clouds
garroting you
with razor-wire molecules
souring your currents
with carbon-charred air
so that your undulant
miles-wide
oxygen gardens choke
and the great reef cities
become their own ghosts—

IV.

No more.
Now water stands up
in us, ocean ascendant
on bone masts and spars
in arterial rigging
We water defy
iron-sheathed black snakes
pumping their corpse-tar
into the mouths of deep springs
blinding the rivers…
Let we water millions
flow chanting through cities
we water drain out of offices
warehouses terminals
flood bare marble capitols
break in unceasing waves
against the armored
machines of the Poisoners
the Makers of Desert
let we water rise
we water rush over
and around, we water
break through
and wash away.

with deep thanks to Pablo Neruda

Lauren Grabelle, *Earth, Water, Dam*

HUNGRY HORSE DAM

Lauren Grabelle

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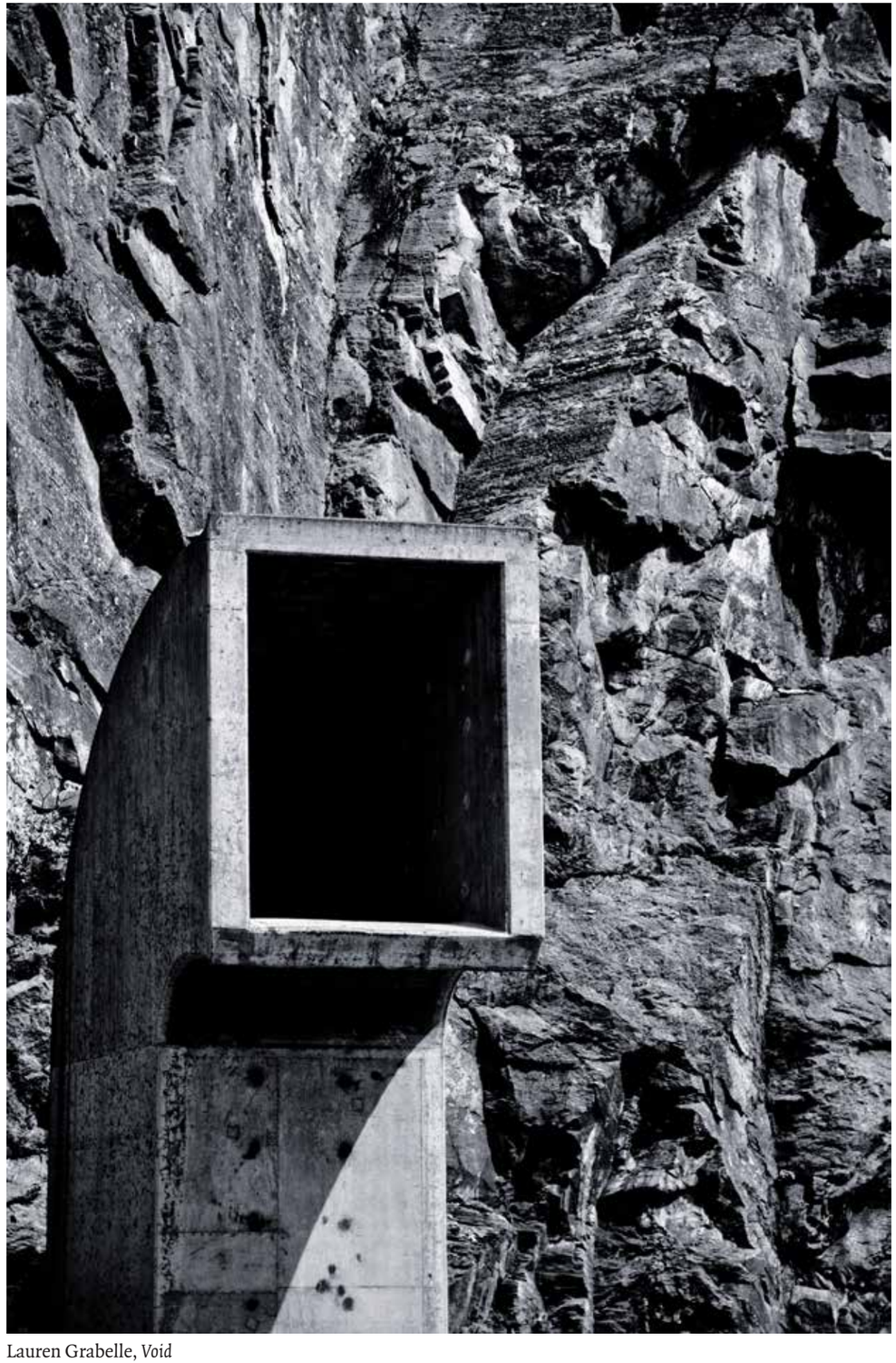
Photographer Lauren Grabelle's series of photographs of Montana's Hungry Horse Dam captures the space where natural landscapes intersect with the human interventions that attempt to subjugate them to our will. The sloping, parabolic plane of the dam's walls is in tension with the textures of the land and water they interrupt, reminding the viewer that even landscapes which appear on the surface to be majestic and powerful are actually incredibly fragile. Completed in 1952, Hungry Horse Dam was constructed on the South Fork of the Flathead River to provide hydroelectric power, flood control, and irrigation for the state's residents. This photographic series captures not only the beauty and expansiveness of the rugged terrain of the American West, but also the depth of humanity's compulsive need to alter those landscapes—endlessly reshaping, redirecting, extracting.



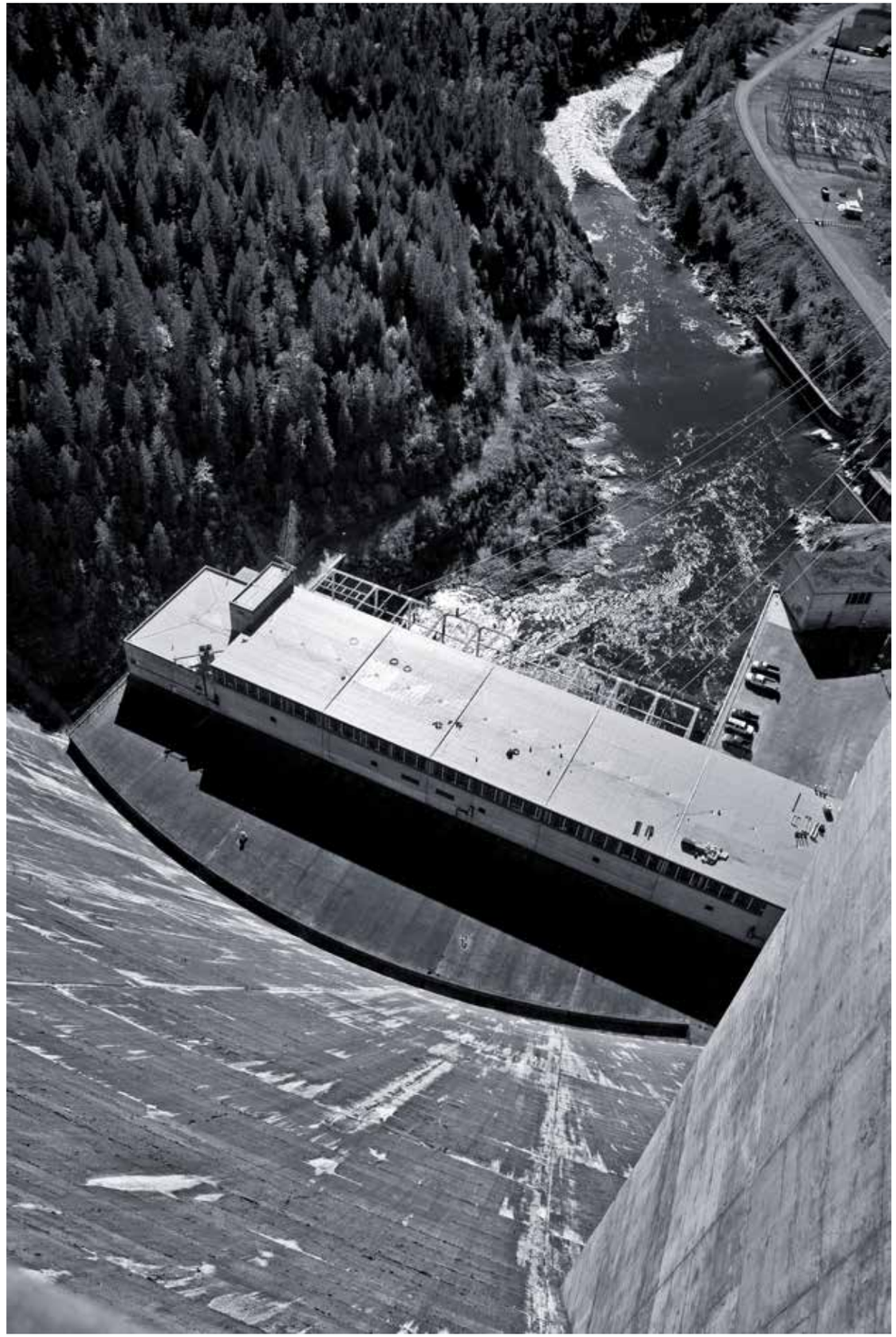
Lauren Grabelle, *Void*

Left: Lauren Grabelle, *Dam Against Forest*; *Above:* Lauren Grabelle, *Cloud*

Lauren Grabelle, *Lost Horizon*

Lauren Grabelle, *What Remains*

Lauren Grabelle, *From the Sky*



Lauren Grabelle, *Flathead River*

Patrick A Kikut, *Glen Canyon Dam*, 2019, watercolor

Patrick A. Kikut, *Powell Reservior: Navajo Generarting Station, Crossing of the Cultures*, 2019, watercolor

Top: Patrick A. Kikut, *Sea Ice, After Church, Gold*, 2018, oil on canvas
Middle: Patrick A. Kikut, *Sea Ice, After Church, Blue Green*, 2018, oil on canvas
Bottom: Patrick A. Kikut, *Sea Ice, After Church, Violet*, 2018, oil on canvas

Top: Patrick A. Kikut, *Temporary Marker, Sea Ice, Gold*, 2018, oil on paper with temporary grave marker; *Middle:* Patrick A. Kikut, *Temporary Marker, Sea Ice, Blue Green*, 2018, oil on paper with temporary grave marker; *Bottom:* Patrick A. Kikut, *Temporary Marker, Sea Ice, Violet*, 2018, oil on paper with temporary grave marker

Zaria Forman, B-15Y *Iceberg, Antarctica no. 1*, soft pastel on paper, 72 by 72 inches, 2017. Courtesy of the artist Zaria Forman.

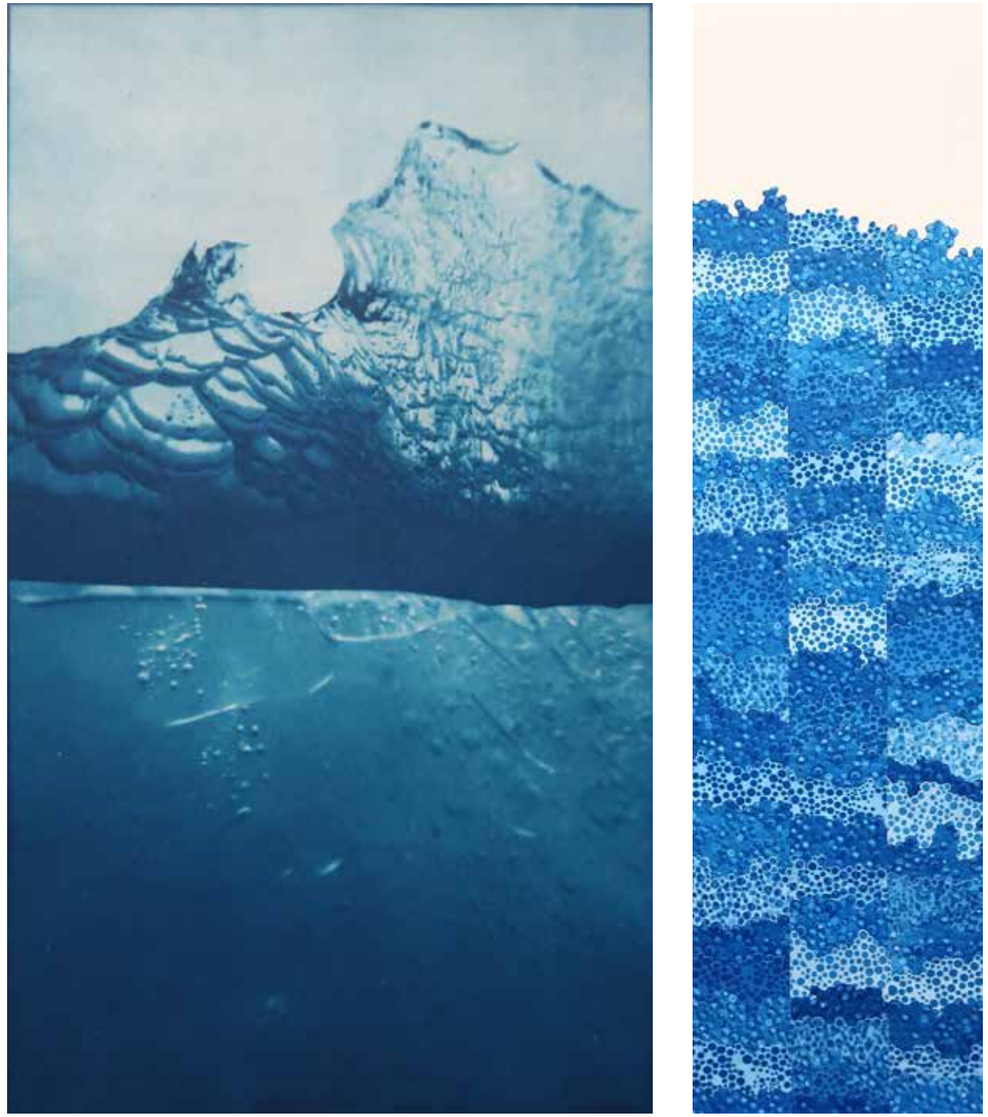
EXTINCTION

for Paul Shepard

Elizabeth Herron

Even cold erodes, and the ice
that held itself in glacial cleaving
grows eager to lie down in the sea
where the great bears will finally sleep,
sliding quietly into the depths.
Their bones roll the bottom
in layers of darkness. What is left
besides light descending
into blue shadows, the billowing
curtains of salt, the slow heft of the sea?
How can we let what is lost
settle of its own weight
into the secret grief, the emptiness
we mistake for something missing
in ourselves?

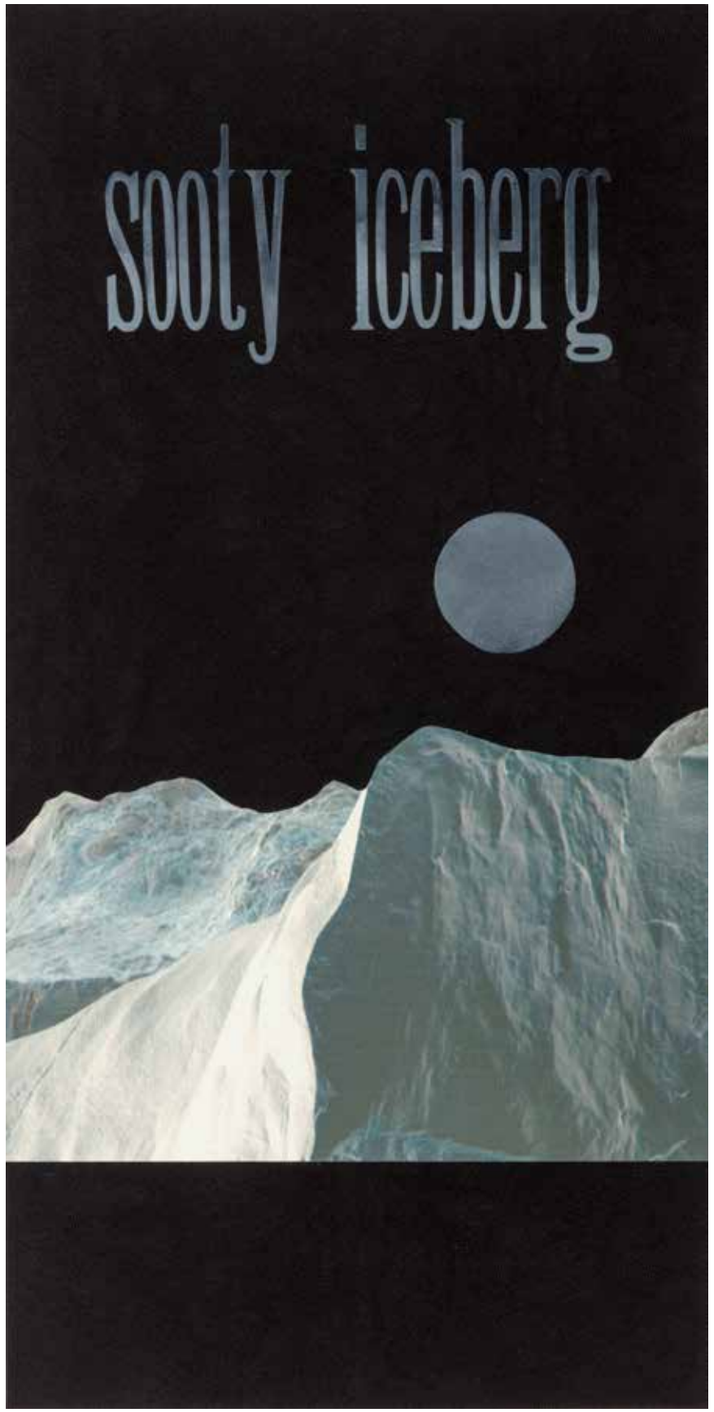
Rachel B. Abrams, *untitled (frazil XLI)*, 2019, Paper on Recycled Matte Board, 19.75 by 10.75 inches

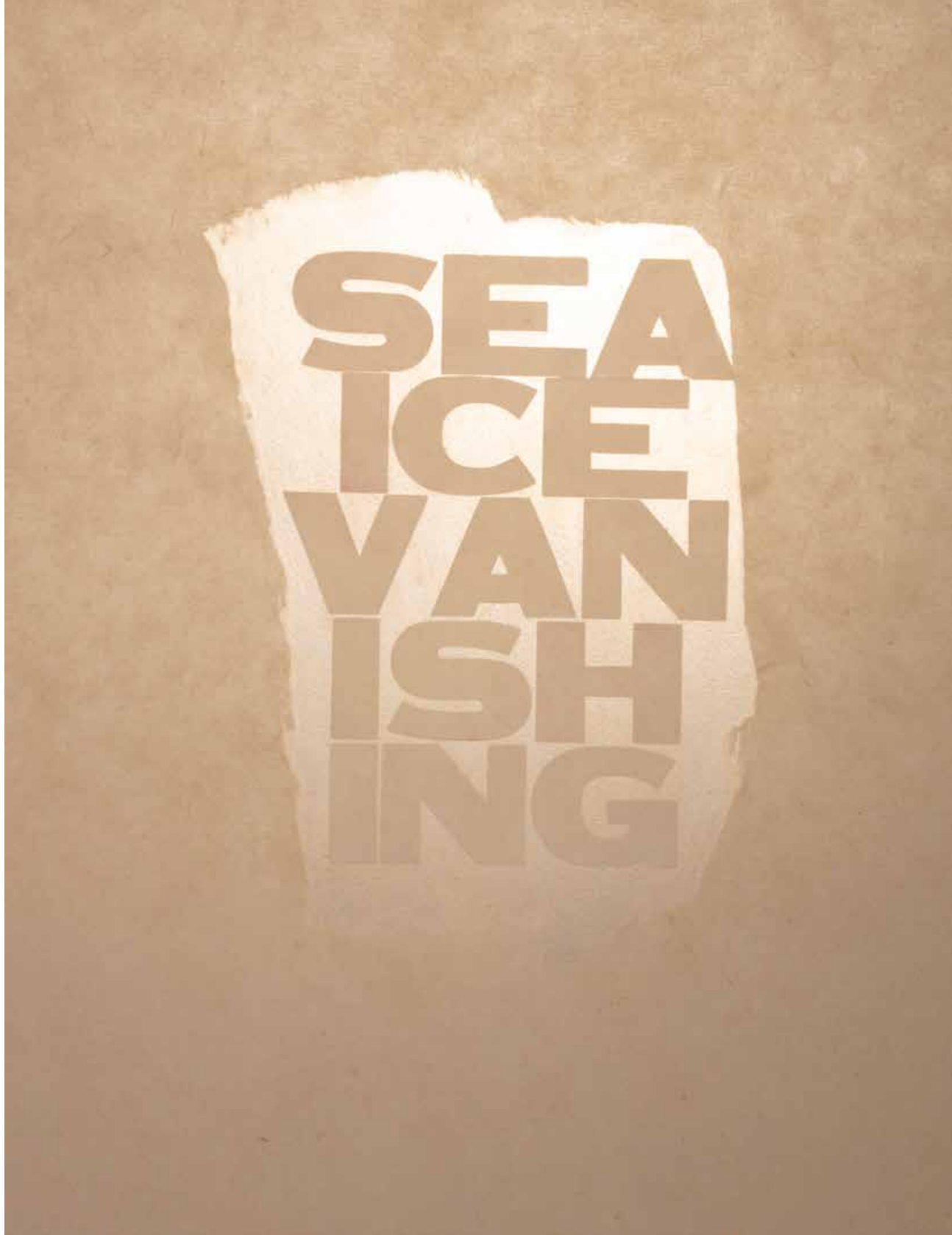


Left: Rachel B. Abrams, *untitled (extinct polynyas I)*, 2019, Paper, 10.25 by 6 inches; *Right:* Rachel B. Abrams, *untitled (frazil XLII)*, 2019, Paper on Recycled Matte Board, 25.75 by 6.75 inches

Having experienced the immensity of Arctic glaciers, as well as the psychological devastation of standing on land that was until recently covered by a glacier, I wish to bring this experience home, to allow someone who may not have the opportunity to be in the physical space of a glacier, to be in the psychological space of a glacier. These collages are in part developed from exposing light-sensitive paper to plastics and glass, using known pollutants of the sea to render the trapped gases stored in the layers of glaciers, gases which when studied illustrate the level of ecosystem health, gases that as we fail to act on climate change transform from stored information to lost evidence.

Rachel's work will appear in the Extraction Exhibition FIRE and ICE at Connecticut College, New London, CT, in September through October of 2021.





Above: Sue Huggins Leopard, *Blackout*, 2020, letterpress and ink jet photo
Right: Sue Huggins Leopard, *Vanishing*, 2020, letterpress and wax on Kitikata paper, photograph by Steve Baldwin

ICE RECEDING/ BOOKS RESEEDING

AN EPHEMERAL SERIES OF HAND-CARVED ICE BOOKS RESEEDING RIPARIAN ZONES.

Basia Irland

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I am enthralled by the way the ice books give physical form to dialogue and scientific understanding of climate change's impact on our rivers, and the way the melting of these books represents both a kind of renewal as they disperse their seeds and a reminder of the ice being lost daily in the arctic.

—Emma Komlos-Hrobsky,
Poets & Writers Magazine

Ice Receding / Books Reseeding emphasizes the necessity of communal effort and scientific knowledge to deal with the complex issues of climate disruption, poisonous discharge from mines, and watershed restoration by releasing seed-laden ephemeral ice sculptures into rivers. I work with stream ecologists, biologists, and botanists to ascertain the best seeds for each specific riparian zone. When an ecosystem is restored and the plants grow along the riverbanks they give back to us by helping sequester carbon, mitigating floods and drought, pollinating other plants, dispersing seeds, holding the banks in place (slowing erosion), creating soil regeneration and preservation, acting as filters for pollutants and debris, supplying leaf-litter (for food and habitat), promoting aesthetic pleasure, and providing shelter/ shade for riverside organisms including humans.

This project presents a lyrical way to promote positive actions that will have constructive results in helping restore streams around the world and provides a model that can be easily replicated. River water is frozen, carved into the form of an open or closed book, embedded with a global cross-cultural ecological language consisting of local native seeds, and placed back into the stream.

The title of this series of projects, "Ice Receding/Books Reseeding," was originally conceived for Weather Report, a groundbreaking exhibition and catalogue about the climate crisis curated by author and cultural critic, Lucy Lippard for the Museum of Contemporary Art, Boulder, Colorado. In order to call attention to melting glaciers, poisonous radioactive drainage from the milling of radium, and embed an action within the sculpture, I carved a 250-pound tome from ice and engraved it with a seed composition. Arapaho Glacier, which provides a large percentage of Boulder's drinking water, is receding rapidly due to climate disruption. When it is gone, from where will Boulder residents, both human and non, obtain water? These sculptures depict problems, including receding glaciers and dangerous outflow from mines, and a suggestion for action—reseeding riparian zones to reduce some of the effects of climate disruption through plants and to bring attention to the overwhelming number of streams that are adversely affected by toxic mine drainage.

I am honored to be invited globally to create ice book projects where I work closely with local communities. For me, an important aspect of a community-based ethic is gifting. The participants have donated their time, energy, ideas, and enthusiasm to each ice book project, so it is with great joy that I give back by presenting each person with a handmade gift related specifically to the river where we have all worked together. Reciprocity.

Ice books have been created around the world and I personally witness the high number of rivers that are contaminated with toxic mine drainage. The seven rivers, with accompanying ice books, I have chosen to discuss here are Boulder Creek, Colorado; Ottawa River, Canada; Headwaters of the Río Grande, Colorado; Oconee River, Georgia; Great Miami River, Ohio; Big Wood River, Idaho; and Deckers Creek, West Virginia. I will not go into the chemical details but will list the types of mine and the results that detrimentally effect the quality of streamflow.

Basia Irland, *Tome I: Mountain Maple, Columbine Flower, Blue Spruce*

Boulder Creek, Colorado

According to the Colorado Geological Survey, Colorado is home to about 23,000 abandoned mines, with more than 550,000 located within the United States. Minerals and precious metals such as gold, silver and tungsten comprised the primary activities within Boulder's mining industry. Some of the mills that processed ore near the mouth of Boulder Canyon and into the town of Boulder still have concentrations of poisonous radioactive materials from the milling of radium. Even though the mines have been closed for a long time, present day concerns include acid drainage, mine pilings left behind, heavy metal accumulation, and radon. The Environmental Protection Agency has rated the Rocky Mountain Region as having the highest possible occurrence of radon, a carcinogen, and also estimates that over forty percent of Western watersheds are contaminated from mine leakage.

Ottawa River, Canada

There are currently no solutions for permanently safeguarding the radioactive waste that has been generated for ninety years along the banks of the Ottawa River at the Canadian Nuclear Laboratories. So far, the river is safe, but the probability of radionuclides contaminating the aquatic ecosystem is very real. Ottawa Riverkeeper is working to protect the drinking water source of over two million people by trying to find ways of containing the nuclear waste securely for hundreds of years and how to prevent any leakage into the river.

Basia Irland, *Tome II: Freemont Cottonwood (Populus Fremontii), at dusk, Rio Grande*

Basia Irland, *Ottowa River Book One: Red Maple (Acer Rubrum), American Elm (Ulmus Americana), Canada*

Río Grande headwaters, Colorado
Draining into Willow Creek, a tributary of the Río Grande, three million gallons a week of acid mine drainage carrying lead, cadmium and zinc leach from the collapsing Nelson Tunnel, which led to a Superfund designation. Zinc levels are particularly high and disrupt fish reproduction for four miles down to the confluence with the main stem of the Río Grande, where the dilution begins to ease the impact somewhat. From its beginning in the mountains of southern Colorado, the Río flows 1,875 miles through New Mexico, and becomes the border between Texas and Mexico. It is the main artery that glides through my hometown of Albuquerque, New Mexico and so I have a deep attachment to this river and have created community-based projects along its entire length.

Oconee River, Georgia
Kaolin quarries release effluents containing cadmium, sulfide mineral contamination, and zinc, which is poisonous to fish populations.

Great Miami River, Ohio
The second largest mining operation in Ohio is sand and gravel (which are the only mineral resources to be produced in every state in the U.S.). Backhoes and bulldozers dig deep into the Great Miami River, shoveling up tons of gravel from the water and dumping it on the banks, thereby disturbing the flow and changing the shape of the river. This process releases contaminated sediment downstream, and lowers the streambed, causing the water to move faster.

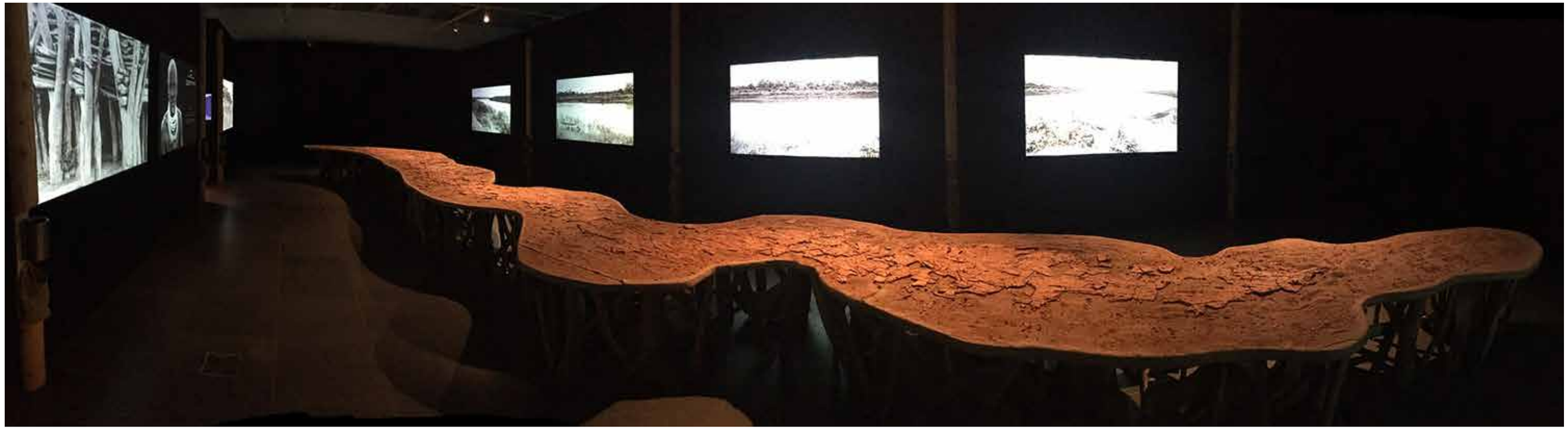
Big Wood River, Idaho
Arsenic and other poisons from abandoned mine sites continue to leak into nearby wetlands and the East Fork of the Big Wood River threatening native trout populations and other species.

Deckers Creek, West Virginia
Since the pH level (the measure of acidity of a solution) in Deckers Creek drops from 7.7 at the source all the way down to 4.2 at the old Richard's Coal Mine site that continues to leach poisonous acid mine drainage into the stream, we used a limestone "text" on the ice books instead of seeds. Limestone is an alkaline agent with the ability to neutralize strong acids.

Basia Irland, *Molybdenum Mine, Vol. I*

Molybedenum Mine, Volume I and *II* commemorate a huge scar that gapes across acres of abused wilderness in northern New Mexico caused by the Chevron Questa Molybedenum Mine (formerly, the Molycorp Mine). Wandering illegally among the heaps of discarded mining equipment, Basia Irland found the text for these hand-carved wooden books – fool's gold and rust – poetic justice for this site, the tailings of which historically killed aquatic habitat for over ten miles downstream in the Red River and contaminated the soil. The mine began operations in 1920 and was officially closed in 2014.

Basia Irland, *Molybdenum Mine, Vol. II*



Above: Jane Baldwin and Leonardo Sangiorgi, *Se A Parlare Non Resta Che il Fiume (If Only the River Remains to Speak)*

The metaphorical sculpture of desiccated red clay symbolizes the crumbling and parched meandering Omo riverbed, deprived of its annual flood cycle by controversial Ethiopian dam developments.

IF ONLY THE RIVER REMAINS TO SPEAK

Jane Baldwin

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Se A Parlare Non Resta Che il Fiume | If Only the River Remains to Speak, is an art installation with the common goal of raising awareness about the environmental and humanitarian crisis taking place in the Omo River Valley in southwestern Ethiopia and Lake Turkana, Kenya.

Narrated in the voices of the women, this art installation tells a present-day story of a river and the indigenous peoples it sustains. The poetic multimedia journey honors the women of this region, the birthplace of humankind, and reveals the deep bonds between humans and their habitat, between other peoples and ourselves. This exhibition, through the power of personal storytelling, gives voice to the voiceless—documenting the dignity of their lives and the tragic consequences of hydroelectric power projects currently underway. Grave human rights atrocities and environmental intimidation now threaten the tribal peoples, as dams, land grabs and villagization destroy their self-sustaining way of life.

This immersive art experience, using technology to simulate human interactions with the women, is a collaboration of Studio Azzurro Produzioni, an artistic multimedia firm based in Milan, Italy, and Jane Baldwin of Sonoma Valley, California, in support of Survival International, Milan, and its global movement for tribal people.

It was first exhibited in Milan, at the Museo delle Culture (MUDEC) in 2018–2019, as part of the museum's Future Geographies. For an in-depth understanding of the art installation please visit www.janebaldwin.com/news.

Preliminary conversations are underway to travel *Se A Parlare Non Resta Che il Fiume*, in Europe during 2021.

Studio Azzurro, rendered image: *If Only the River Remains to Speak*

SALMON RIVER

Jon Jost

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Rising in the Sawtooth range in central Idaho, the Salmon River runs north from the Norton Peak in the Sawtooth area, to Stanley, then cutting east towards Challis and Salmon, then cutting west to Riggins where it sharply turns north again before making a u-turn near White Bird, it goes south and joins the Snake River. It runs a total of 425 miles, all in Idaho, passing through the Salmon River and Clearwater mountains, there called The River of No Return, through a steep 7,000-foot-deep canyon, the third deepest in the United States (Kings Canyon in California is deepest, and nearby Hell's Canyon of the Snake River is second).

The Salmon River is one of very few undammed rivers of its scale in the United States, and two segments, the Middle Fork and a section of the main Salmon River, known as the Main Fork, are protected as National Wild and Scenic Rivers. The Middle Fork was one of the original eight rivers designated Wild and Scenic in 1968. It is magnet for rafters and fishing.

The geology is typical of the entire area, with a deep history of tectonic shifts making once oceanic islands inland mountains, from the collision 200 million years ago of what is now the American continent and the subduction plate along the northwestern Pacific Coast. More visibly marked are the signs of the much more recent basalt flows, which stamp the entire Columbia River area of Oregon and Washington, and much of Idaho. The columns of basalt protrude clearly in much of this area, and can be seen in the walls of the canyons, and the sprawl of the once molten liquid, building to a depth of one mile thick, which flowed often over a period from 10 to 15 million years ago can be seen bent and twisted by geological forces. It makes for a stunning and varied landscape.

Historically 45 percent of all the steelhead (ocean-going rainbow trout) and 45 percent of all the spring and summer chinook salmon in the entire Columbia River Basin was produced in the Salmon River and its basin contains most—up to 70 percent—of the remaining salmon and steelhead habitat in the entire Columbia River Basin. While the entire Salmon River runs wild, the chinook, steelhead, and sockeye salmon populations are subject to the effects of four dams along the Lower Snake River, into which it feeds, and then to a sequence of four further massive dams across the Columbia River. While belatedly these dams were installed with fish ladders for the salmon runs, the population dropped precipitously and though they were listed in the mid-90s under the Endangered Species Act, the salmon remain at risk and have not recovered.

The "harnessing" of rivers, to extract energy for conversion to electricity, to control flooding, to provide lakes for recreation, and to store water for irrigation is, for us, perfectly natural and intelligent—why let all that water and energy go to waste? When we do such things we seldom think two steps beyond the immediate logic of our desires. It is usually only after we have acted that the real bill becomes clear.

In the case of the Salmon River, it would seem innocent, its wildness a protection against accountability. But being part of the natural world, our world, it is intimately connected to everything else. The Salmon River is part of the Snake, and the Columbia and then the vast Pacific Ocean. And there are bills to be paid.

In Puget Sound there are three pods of Orca killer whales, their numbers now down to 73. Aside from the usual risks of cohabiting with humans, the Orcas are being depleted because one of their major food resources—salmon—are, like them, diminishing rapidly in numbers. The Orcas are being starved to death. And so in the spawning grounds of the Salmon River, in Idaho, the chain that leads to Puget Sound is broken. The laws of unintended effects resound.

Jon Jost, *Berkeley Pit Collage #7*, photo collage

Jon Jost, *Slag Wall #2*, photo collage

BRINGING BACK WATER

Elizabeth Herron

That night you went down the street
to bring back water – sweet
smell of rain
on your shirt, the good water
from who-knows-where
in its killer-plastic bottle. Wind
through the open door, leaving
returning. Now stars,
too early for the old moon.
There is a wilderness of pure joy
beneath all sorrow.
It's where things begin.

GIRL IN FRONT OF YELLOW WALL

Sönke C. Weiss

In November 2018, fifteen years after my first visit, I photographed this girl in front of a yellow wall in Gulu. It was a Sunday. She was washing dishes. To me she looked like a ballerina. Poetry in motion. A wonder, considering Gulu's history. Gulu is a city of around 150,000 people in northern Uganda not far away from the border to South Sudan. Between 1987 and 2006 the Lord's Resistance Army, a militant religious cult group, fought a war against the civil population. More than 100,000 people died, two million were internally displaced, and up to 100,000 children were forced to fight as child soldiers. The wounds of war are beginning to heal. A new generation is rising, expressing the will to prosper and to strive for progress—a better future. To me, Gulu is the archetypical African city. Despite all challenges, the people love their homeland and do not want to leave. One of the biggest issues is lack of water. Droughts—a few decades ago unheard of—are common now. The climate is visibly changing.

CLEAR LAKE

Peter Goin

Clear Lake is touted as the largest, natural freshwater lake entirely within California; its ancient history dates back more than 480,000 years. Clear Lake's volcanic basin is located on a topographic divide between the Russian River system to the west, and the Sacramento Valley, east. The lake initially drained to the Sacramento River, then into the Russian River, and currently drains into the Sacramento River. The Grigsby Riffle, a rock sill located at the confluence of Cache and Seigler Creeks near Lower Lake, impounds the natural lake level. However, as a managed reservoir, multiple decrees enacted from 1920 to 1995 have sought to balance the storage of water for downstream water supply, maintain levels for local recreation including fishing, and minimize local flooding. Because of the limited discharge capacity of the Cache Creek channel, the lake will flood during extended periods of heavy rainfall. Clear Lake is approximately eighteen miles long, seven miles wide, and is a relatively shallow lake, with depths averaging twenty-one feet, maximum depth of fifty-nine feet.

Clear Lake State Park, on the southern shores of the lake, advertises that swimming is popular, and that professional fishing organizations have designated Clear Lake as the nation's number one bass fishing lake, complemented by catfish, blackfish, bluegill, crappie, hitch, and Sacramento perch. Yet, Clear Lake is threatened. The fish are perilous to consume, catch-and-release is less a reflection of enlightened sporting ethics, and more about self-preservation. The lake contains poisonous mercury, noxious matted algae, deadly cyanobacteria, and Hydrilla. One report indicated that the problem of neurotoxin contamination is serious enough such that a large dog, drinking its water, could die in only 20 seconds. During summer months, heavy blooms of blue-green algae, the source of the neurotoxin, combined with suspended sediments cloud the water and limit transparency, and trigger a noticeably foul odor. The lake is nutrient-rich, enabling high densities of noxious aquatic insects, particularly the gnat, provoking during the 1940s and 1950s the use of DDD. Entering the food chain, the pesticide led to the reproductive failure of western grebes. Mercury from the abandoned Sulphur Bank Mercury Mine, a USEPA SuperFund cleanup site, converts to the toxic organic form methyl mercury, a food chain contaminant. The lake is monitored, and signs are placed at public parks and access points. Health warnings are issued. Lake County Public Health urges boaters and recreational users to avoid direct contact with or use of waters containing cyanobacteria, particularly dangerous for children and pets. To those visiting Clear Lake, looking is one thing, consuming, another.

Peter Goin, *Pier reflections*, 2019, Pirates Cove, Clear Lake

Peter Goin, *View from shoreline*, 2019, Pirate's Cove, Clear Lake

Peter Goin
Last light and table, 2019, private dock, Pirates Cove, Clear Lake

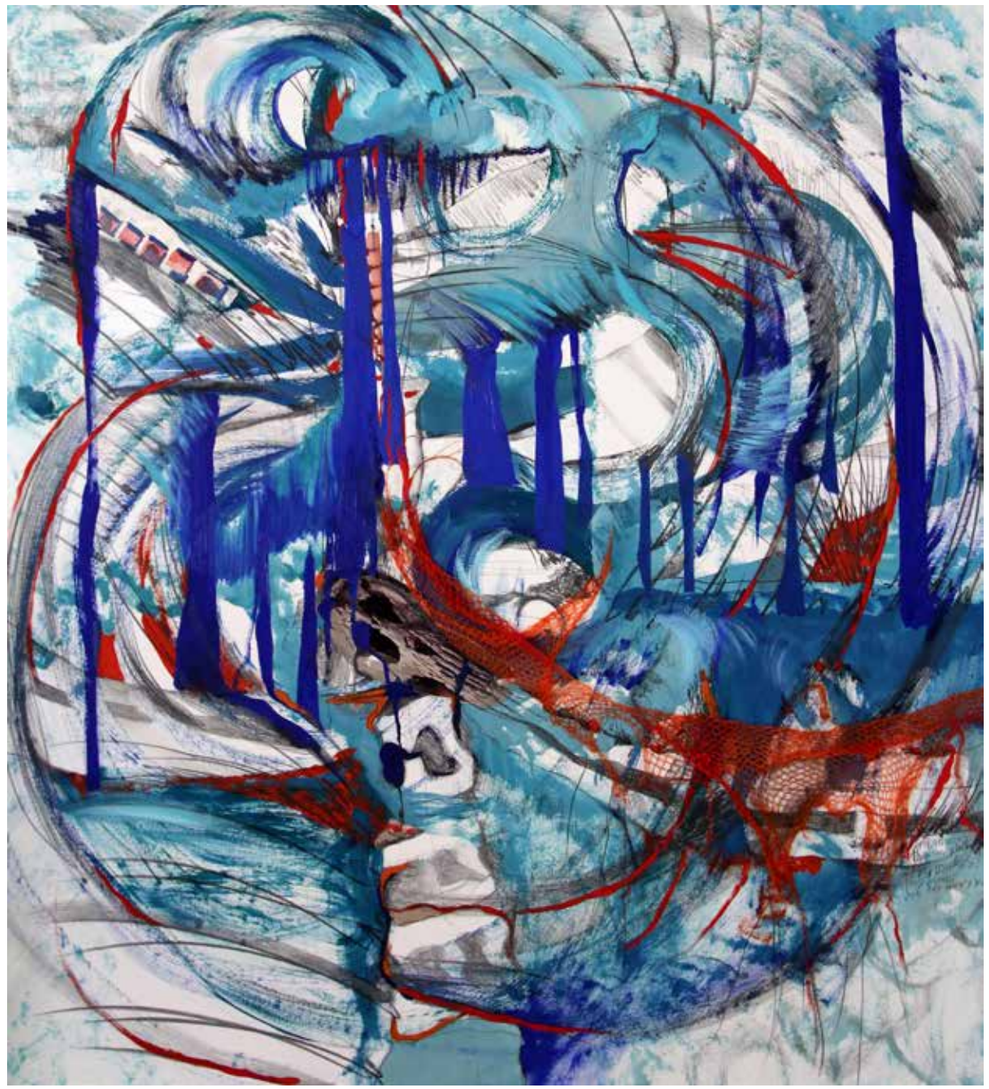
Michael Lundgren, *Waypoint*, 2018, 36 by 26 inches, pigment print

Michael Lundgren, *Current*, 2019, 24 by 30 inches, pigment print

Michael Lundgren, *Vent*, 2018, 30 by 24 inches, pigment print

Mandy Barker, *WHERE? – No One Wears A Watch*

Pam Longobardi, *Swerve*, 2019, over 500 ocean plastic objects from Alaska, Greece, California, Hawaii, the Gulf of Mexico and Costa Rica; steel specimen pins, 96 by 54 by 8 inches



Jill Vaughn, *First Came Ardi, Then Plastic*, 2019, oil paint, pencil, paper and plastic netting collage on paper, 56 by 50 inches

Hans Holbein painted *The Ambassadors*, a double portrait with a distorted skull in the foreground to represent the commonality of our mortality. In my piece, an elongated image of the skull of Ardipithecus, the first female biped discovered in Ethiopia, is placed in the foreground of a human ribcage in the Pacific Ocean's plastic gyre. In making this work, I question our literal consumption of plastic; where has the feminine gone in nature; and are we still controlled by the "wealthy ambassadors" of today?

ENVOI: SAN FRANCISCO

Tess Taylor

"A number of the ships, wharves, and other infrastructure of San Francisco's Gold Rush waterfront lie buried beneath the streets, sidewalks…"
—California Disasters, 1812–1899

City of shipwrecks. City of water.
Sand hills where mountain lions

prowled above windjammers.
City whose first Anglo historians proclaimed

themselves to be the only modern progress
& promised to "sweep away *forerunners*"—

who wanted to bind the world's many peoples
& with their new port to do China

"what the British had done with India
(but sooner)."

City of Gold Rush & bust & boom;
city of mudflat; of private wharves.

Buildings to ships, ships into buildings;
forest to everything;

city of old growth & redwood pilings.
City of whores & Mackinaw blankets;

of Irish whiskey & fireproof paint;
of schooners abandoned for goldfields

the Niantic *the Apollo* *the General Harrison.*
City whose abandoned ships became

floating opium dens next to floating prisons.
City of otter pelts & shovel salesmen,

whose white settlers funded their own microgenocides;
city of quick fires & tallow & opium;

of murre eggs stolen off the Farallones—
City of landfill & movable real estate

where right now a woman in underwear
howls in the street

& a barefoot teenager
scratches his sores

& an addict begged the last of my rice
just outside this room where I am writing

city of faultline city of water:

As much as of anywhere I am of you

Christopher Volpe, *T'Gallant Sails*, oil and tar on canvas, 36 by 48 inches

LOOMINGS

Christopher Volpe

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My paintings for the Extraction Project use the primordial material of tar as their medium. The tar comes in for its deep, metallic black color, its aqueous quality, its earthy sepia tones when thinned, and its resonance for our moment in history.

I started painting with tar when two things in my life converged: re-reading Herman Melville's *Moby-Dick* and becoming fascinated with nineteenth-century painter Albert Pinkham Ryder, who's said to have used tar in his paintings. The resulting series is *LOOMINGS*, so named after the first chapter of *Moby-Dick*. I hope the series evokes what Herman Melville saw prophetically in the 1850's: American industrial history as a neverending pursuit of wealth and the domination of "savage" nature, even at our own expense.

However, the works aren't narrative, nor do they illustrate events in Melville's novel. But like the book, they're largely, at least for me, about the confrontation of our own ignorance, our melancholy quest for knowledge, reality, and enlightenment in an unknowable universe. More than a whaling story, *Moby-Dick* is really a vast American prose poem epic invoking the history and future of America and our relationship with the cosmos.

America's global industrial dominance began with the Quaker whaling ships; petroleum (oil) is the successor to whale oil, which literally fueled the industrial revolution, lit the night, and greased the machinery for the rise of what Melville, already in 1851, called "the all-grasping Western world."

Christopher Volpe, *Westward*, oil, tar and gold leaf on canvas, 16 by 24 inches

As Melville does in *Moby-Dick*, the paintings consider the "oceanic feeling" in terms of humanity's problematic longing to transcend or at least make peace with nature even while encroaching upon it. Tar paintings outside this series address extractive culture directly. *Event Horizon #1* and *#2* are both based on AP photos of the 2010 Deepwater Horizon industrial disaster in the Gulf of Mexico, the largest marine oil spill in history.

Although my painting has always had roots in the landscape (or seascape), working with tar brings a lot of things together for me, referencing what I've long felt is our culture's warped relationship with nature while synthesizing contemporary visual and literary symbolism and resonant works of art and literature of the past.

Since Melville published *Moby-Dick*, we've had 150 additional years of oil-driven industrialization. Humanity continues to exploit nature without adequately understanding our place within it or even our own history. We're still tempting Ahab's unknowable gods and flouting signs and portents of extinction.

Christopher Volpe's work will be exhibited in the upcoming show FIRE AND ICE *in New London, CT from September 1 to October 15, 2021.* LOOMINGS *was awarded the St. Botolph Club's "Outstanding Painting" award and the Nellie Taft Grant for visual arts. Works from the series have been exhibited at Patricial Ladd Carega Gallery, Center Sandwich, NH, Matter & Light Fine Art, Boston, the St. Botolph Club, the New Bedford Art Museum, and Kimball Union Academy in Meriden, NH.*

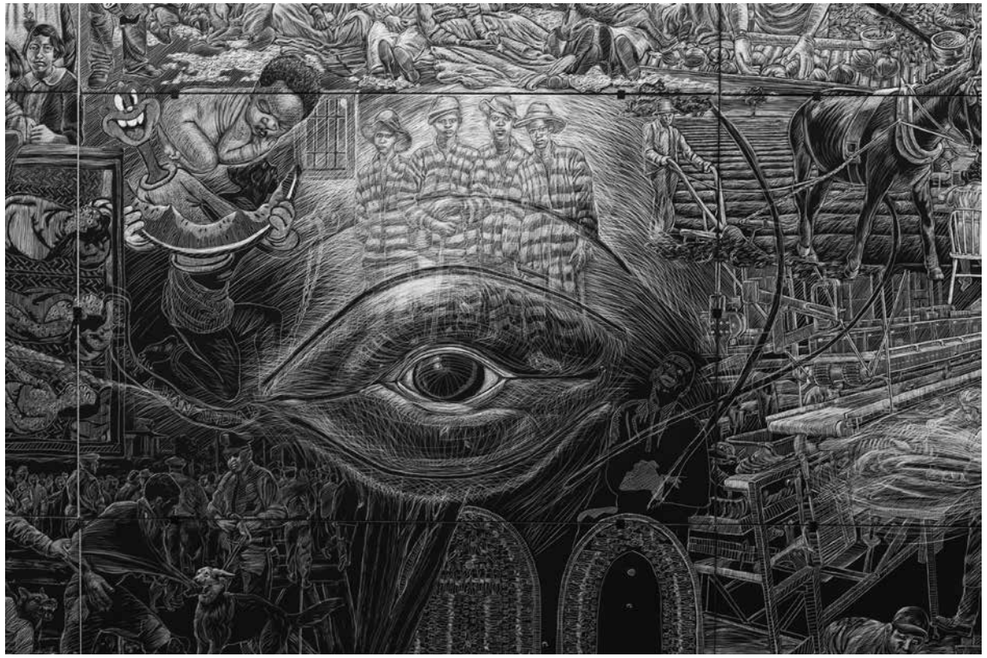
Christopher Volpe, *Event Horizon #2*, oil and tar on canvas

Christopher Volpe, *Event Horizon*, oil and tar on canvas, 48 by 48 inches

Jos Sances, *Or the Whale…*, 2018 – 2019, scratchboard, 14 by 51 feet

Sances' massive drawing is inspired by *Moby-Dick* and the history of whaling in America. The whale's skin is embedded with a visual history of American capitalism, images of human and environmental exploitation and destruction since 1850. The whale is a metaphor for survival, immortality, and a reason for optimism.

Jos Sances, *Or the Whale…*, *Detail*, 2018 – 2019, scratchboard, 14 by 51 feet

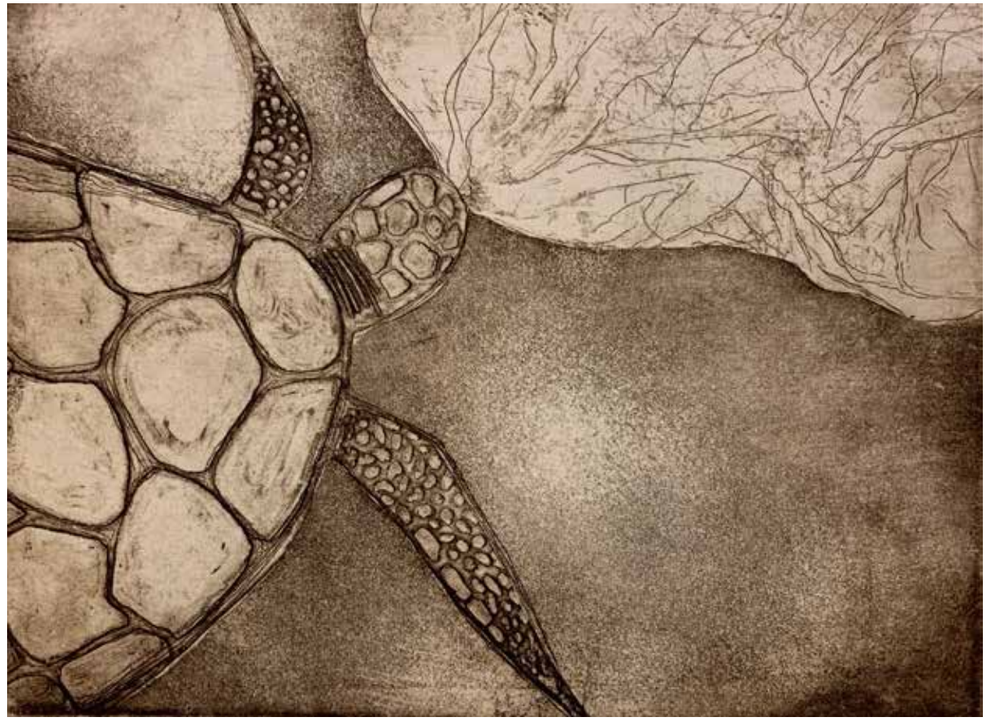


Jos Sances, *Or the Whale…*, *Detail*, 2018 – 2019, scratchboard, 14 by 51 feet

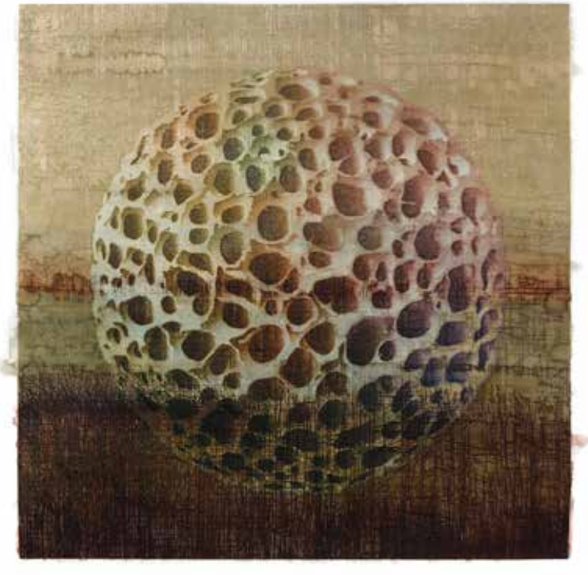
Diane M. Stemper, *Few Remain: Unionids*, 2019, etching with aquatint on Arches Cover. The etching is an image from a larger book project about freshwater mussels. Diane Stemper's 2019 artist book, *Mussels: What Was | What Remains*, was inspired by the current endangered species status of freshwater mussels and the Mollusk Collection at the Hefner Museum of Natural History, Miami University, Oxford, Ohio.

Jennifer Parker, *Coccolithophore*, 2019, water, calcium carbonate, spirulina (algae), and gum arabic, on paper

The Algae Society is a global collective of interdisciplinary researchers working to establish a new community with algae as a non-human international research partner. As a working group we aim to collaborate, conceive, cooperate, and experiment with algae as a united society bound together in an interdependent system of organisms adapting to global warming. Our collaboration is a creative approach that seeks to benefit, support and educate the public of our symbiotic relationship.



Karen Baden Thapa, *Sea Turtle Eating a Plastic Bag*, 2019, etching



Donald and Era Farnsworth, *Glass Houses II, right panel (Actinomma Antarctica)*, archival pigmented inkjet print with watercolor on Arches hotpress watercolor paper

Actinomma Antarctica is part of Donald and Era Farnsworth's Glass Houses series depicting diatoms, a class of tiny, single-cell organisms found in nearly every body of water on Earth that build delicate shells for themselves out of silica. Diatoms are major sources of oxygen in our atmosphere and are estimated to be responsible for 25% of the carbon fixation (conversion of carbon dioxide to organic compounds) in the ocean. By enlarging these microscopic life forms and bringing them to the surface of their work, the Farnsworths invite us to consider both the beauty and the ecological importance of these otherwise invisible creatures.

WE GATHER AT THE GATE

Melissa Tuckey

A hawk cleaves the air above Watkins Glen
another train rattles the track above the gorge

Here where ferns lace columbine cliffs
above the water's wake, where streams carve
history into shelves of rock
and all who feel the cold steel vibrate
wonder about compression

Propane trucks hurtle two lane roads
and I've got a tree planted in my heart

Stranded assets, blind thrust fault
Salt mines beneath our sacred lake

SENECA LAKE

Melissa Tuckey

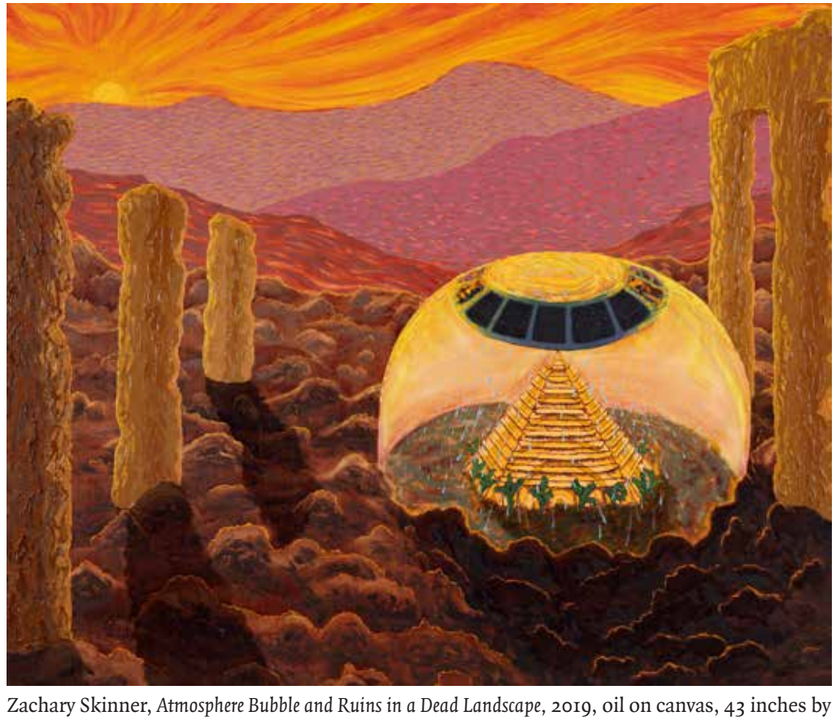
Propane trucks idle
one more hour, one more day
daffodils in bloom

Crow caucus darkly
awake as wind blows across
hungry water

White waves blown sideways
shiver of wind through maple
an oriole sings

A child learning her
letters, a hand-painted sign:
I am the lake I love

Zachary Skinner, *Survival Camp with Water Collectors, Kale, and Oil Pipeline*, 2019, oil on canvas, 41 inches by 30 inches



Zachary Skinner, *Atmosphere Bubble and Ruins in a Dead Landscape*, 2019, oil on canvas, 43 inches by 36 inches

Zachary Skinner, *Flood Water with Water Towers and Hut-Raft*, 2019, egg tempera and oil on panel, 8 inches by 9 inches

Skinner's paintings reflect his conceptual interest in the Anthropocene landscape and geo-engineering. Some recurring motifs in his work are invented structures that interact with sunlight, wind, and/or rainwater, as well as inhabited nomadic huts—all situated within a barren landscape. His work presents a narrative of increasingly violent weather exacerbated by climate change, and the technological sublime—reflecting on the dangerously dysfunctional interdependence of man and nature. Skinner creates paintings that flow freely between authenticity and parody, fetishized forms and flatness, the Romantic sublime and the post-apocalyptic, invention and destruction.

Bernadette Howard, *Nightfall*, 2016, mixed painting media, pigments, on canvas, 30 inches by 40 inches by 2.5 inches

Bernadette Howard, *After the Rains No. 13*, oil and pigment on canvas, 48 inches by 48 inches

Eva Maria Horstick, *Our earth is leaking*, 2016, Ruhr area

Eva Maria Horstick, *If trees had dreams*, 2003, Spain

Eva Maria Horstick, *The lost connection between humans and animals*, 2003, Africa and Ruhr area, collage

WAS IT I

Sheila Packa

who drank from
the springs in the headwaters
trampled tradition
escaping the small town
or the mine the men the thefts
joined the union and strikes
or swam through water-filled mine pits
snuck past gates trains conveyors
furnaces beer cans bottle filled weekends
portaged through chains of lakes
drifted through culverts below railroad tracks
beneath the bridge of language
inebriated no man
no woman no grandchild
of the Divide wanting
lessons from libraries or schools
that came down by arson
not banker or engineer or driver
of cars that rolled in the ditches
not miner with cows or chickens
or cats in the barn
not the wife with the pressure cooker
the gas station attendant or candy store
not the owner or lifeguard or seamstress
not husband or lover or lake
who broke it off seeped in the ground
evaporated
got in the car and kept going
through the streets of rain
free love and tokes of weed and war
and war at the corner
of a movie theater and real
at the corner of never coming back
of dawn and dead of night
of erosion and accretion
through lock and dam
nervous breakdown and exhilaration
listening to broken records old tapes new
at the place where friends desert you
through any channel on any road
through the gutters and sewers
not seeing stars for the light
nor bounds because gorgeous
unrestrained rides of your life
are around the bend within reach
effluence surging into waves on the beach
moonlit white capped deep
shadow and silver or tin or stainless
lines lifting bending
with roots that hold down a city
or a country or the earth
beginning -- beginning
is the voice of sirens ringing in the places
where towers have fallen
lightning and flood
search and rescue
in the rising water broken city
what I took for sunrise
was dynamite

KEG PARTY

Sheila Packa

> *Nothing to lose anymore, comrade*
> *nothing to lose but our chains.*
> —*Joseph Kalar*

One night, around a bonfire in a gravel pit
near Biwabik, beer glowed with firelight.
Music blasted through car speakers.
It was getting cold beyond the fire.
A river was falling over stones through Merritt Lake
down through Esquagama that carried
the moon into Superior. Clouds were scudding
through the sky. The poets were quiet.
All my life I had listened
to the trains taking this earth away
to the ships in the harbor to the steel mills.
There was a story I'd heard
about the underground mine
and it's rats. Some of the workers
tied string to crusts of bread
and dropped them in the holes of the floorboards.
This was a form of recreation.
The rats took the bait
and miners reeled them back.
In the old days.
Now we have open pits, taconite and big plants
with rolling furnaces to make pellets
from the grey dust, a breakthrough
in technology. We emptied the keg
peered into the walls of night and fell deeper.
I brought up the word 'oubliette'
a dungeon with the opening at the top
the word with the same root as oblivion.
No way out.
Some wanted to get on at the mine.
Some were going away if they could.
Some were going to die young.
Below the stars of the Big Dipper
voices rose like effervescence or sparks flying.

Above: Meridel Rubenstein, *In the Marshes*, 9 part work, S. Iraq, 2011–17; *Left: Adam and Eve in the S. Iraq marshes, near the possible Historic Site of the Garden of Eden*, 2011–2012, 34 x 59.83, UV-cured pigments on linen with wastewater garden drawing, 2017

EDEN IN IRAQ:

WATER EXTRACTION AND RESTORATION

Meridel Rubenstein

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The marshes in southern Iraq, formed by the Tigris and Euphrates Rivers, are home to one of humanity's oldest cultures. The Marsh Arabs developed their unique way of life around the resources of the marsh, once the third largest wetlands in the world. The Tigris and Euphrates Rivers cross on the eastern edge of the marshes at the Shatt al-Arab; this intersection is thought to be a possible site of the historic Garden of Eden.

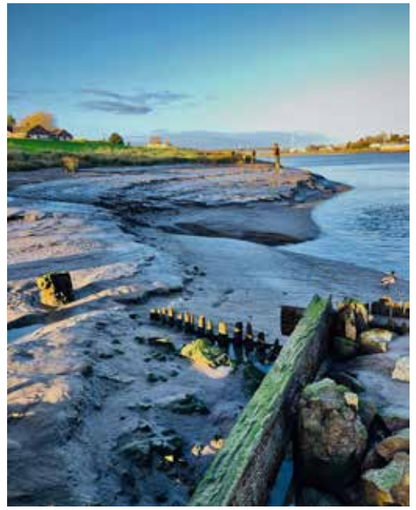
In the early 1990s, Saddam Hussein's forces secretly drained the immense Southern Iraq wetlands, to punish the Shi'a rebels hiding there. They transformed it into a desert, murdering tens of thousands of Marsh Arabs and compelling hundreds of thousands more to flee. Conflict and violence altered the Marshlands into a desiccated parcel, disturbing its ecological composition, and leaving detrimental vestiges that still pose serious challenges to its survival.

The efforts of Nature Iraq NGO, my Iraqi sponsor, to regreen the marshes and culture, are legendary. For those millions of migrants afloat in Europe today, the Marsh Arabs of the Mesopotamian marshes in southern Iraq offer a stunning example of a violently displaced people returning home to regreen and restore their desertified land.

In 2011, I initiated the Eden in Iraq Wastewater Garden Project. This interdisciplinary water remediation project in the wetlands of Southern Iraq, uses environmental engineering, art, design, and wastewater to make a restorative garden for health, cultural heritage, and environmental education. Initially funded in Singapore by a research grant from Nanyang Technological University (NTU) 2013-2017, in 2014 we became an official project of Nature Iraq NGO in El Chibaish, Thi Qar and Suleminiyah, Kurdistan. In April 2019, The Center for Restoration of Iraq Marshes and Wetlands (CRIMW) and the Iraq Ministry of Water Resources (MOWR) committed to funding this project in 2020.

I returned this last time to Iraq to find deep gratitude for our eight years of work and financial support at the National level in Bagdad. We were funded to begin building the wastewater garden this past winter. Just as we prepared to return, extraordinary popular protests erupted, followed by President Trump's reckless assassination of the Iranian General Soleimani. The Iraq government fell apart, so we are now on hold until a new Prime Minister can be selected—allowing passage of a National Budget of which we were a part. Iraq is at a critical moment in its short and conflicted history. The disaffected and furious young are demanding untethered democratic governance with allegiance no longer to the U.S.A. or Iran. It's still unclear whether they can fully succeed. But huge changes are ahead.

My photoworks emphasize the resilience of the ancient marsh people and the environmental miracles taking place in the Mesopotamian Marshes. In the imagery, the effects of war, the oil industry, and agriculture are not ignored but are there as part of the ecologic and cultural fabric. These photoworks (2011–17) are printed with uv cured acrylic inks on linen, vegetable inks on prepared aluminium plates, or woven as jacquard tapestries with cotton threads.



Karen Frances Eng, *Silt*, 2019, images from a long-term photographic project documenting the dance between land and tides at the intersection of the Great Ouse and the North Sea

SILT

Karen Frances Eng

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I live at the mouth of the Great Ouse at King's Lynn, a town in West Norfolk established in 1101. The Great Ouse flows here into the Wash, a square bay and estuary that opens into the North Sea. It is an important conservation site, designated for protection by multiple bodies, including RAMSAR and the Royal Society for the Protection of Birds. Lynn's position at the juncture of waterways between Europe and England made it the kingdom's most important port town in the 1300s, as it served as one of England's centres of commerce as a member of the Hanseatic League – a powerful trading alliance that linked 195 European cities including those in modern-day Germany, Poland, the Baltic states, the Netherlands, Russia and Belgium. It continues its maritime tradition as a centre for fishing and shipping.

Humans have drastically reshaped this part of the river over the centuries, starting with Dutch engineers who excavated it in order to drain the boggy Fenlands to the south, reclaiming fertile land for agriculture. However, the coastal plains in this region live with the ever-present threat of flooding. Since then the river has been moved, contained and dredged in order to suit the needs of the time. Today, with the expectation of rising waters due to climate change, local authorities are considering building a barrage that will protect the town. Of course, this will come into conflict with the desire to preserve the ecosystem and landscape – the paradoxical position humans have put ourselves in when it comes to how we relate with nature.

For now, nothing will stop the wild forces of water here. Tides at this spot flow hard and strong, sucking water all the way out at low tide to reveal banks of shiny silt. This fine mud creates ever-changing shapes, sculpted by water flow and marked by birds' feet and stuck debris. I photograph the shape-shifting interaction of land and water as a daily activity, marvelling at – and taking comfort in – its endless transformation.

THE SERIAL LIQUID EARTH

Ashwini Bhat & Forrest Gander

"The Serial Liquid Earth" is a collaboration between sculptor, Ashwini Bhat, and poet, Forrest Gander, meant to model the collaborative efforts necessary to address our epoch's great emergency: species extinction, desertifying landscapes, acidic seas, global warming. At this critical historical moment we've designated the Anthropocene, what we stand on ethically is inextricably linked to what we stand on physically. It will take our grounded understanding of what is at stake for us to imagine the kinds of collaborations that might lead toward a sustainable world of interdependencies.

IGNEOUS

They will slaughter you
|
pray for you and wish you peace
|
\
but there is something
/
wrong with this

EROSION

We wake, drunk.
\
The planetarium
\
locks into place
\
under our hair; we take
/
the bus,
| |
neurons flicking out in pairs.

UPLIFT

\
You are entitled
| \
to be uncertain:
/
swallow the Cambrian
/
tongue, now crack
/ |
the head crammed with teeth

Dahn Gim, <<*Souvenirs From Earth: Black* >>, 2019, Augmented Reality, Nylon, Plastic, Trash, 24 by 36 by 5 inches

SOUVENIRS FROM EARTH (SERIES)

Dahn Gim

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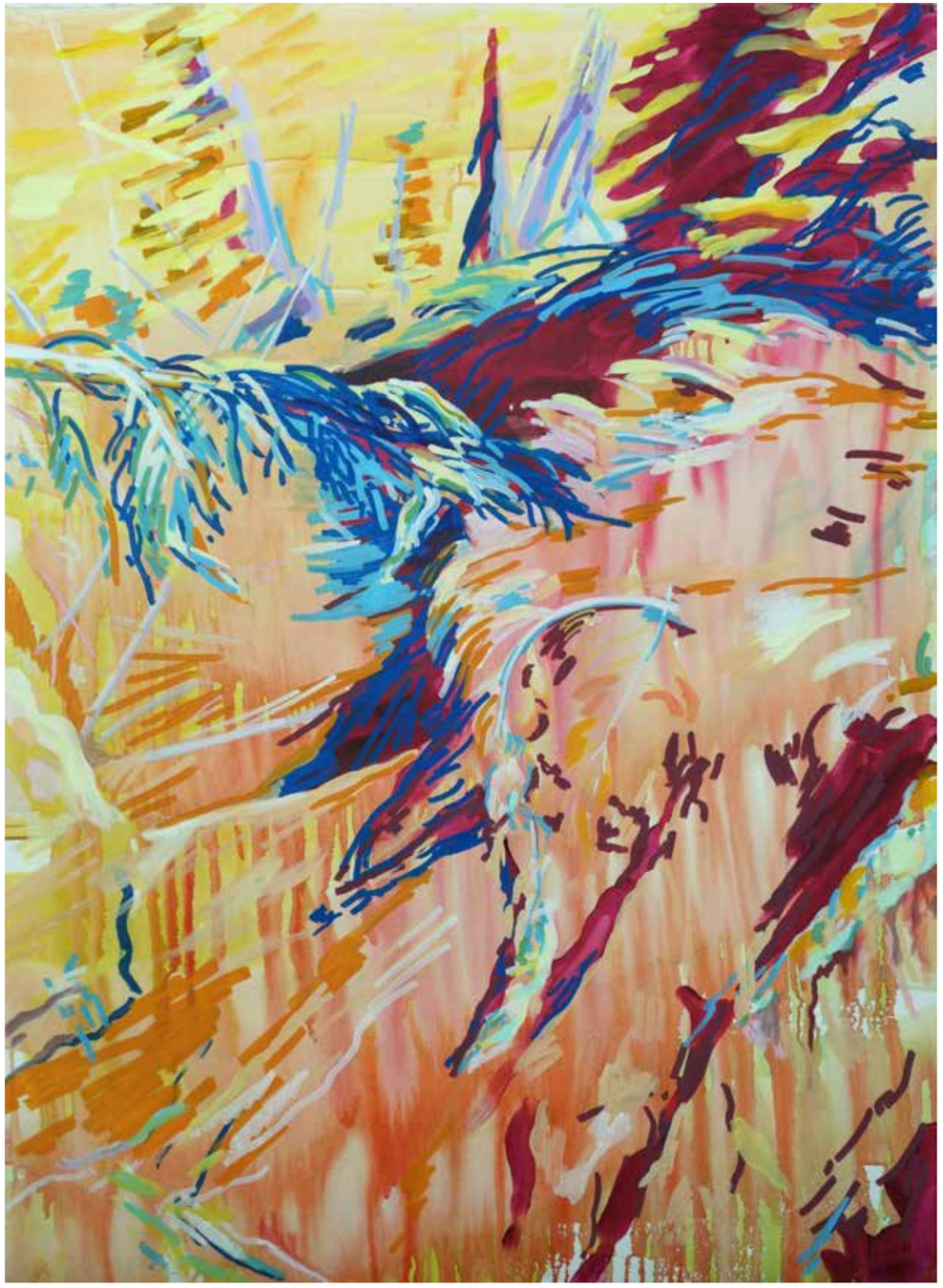
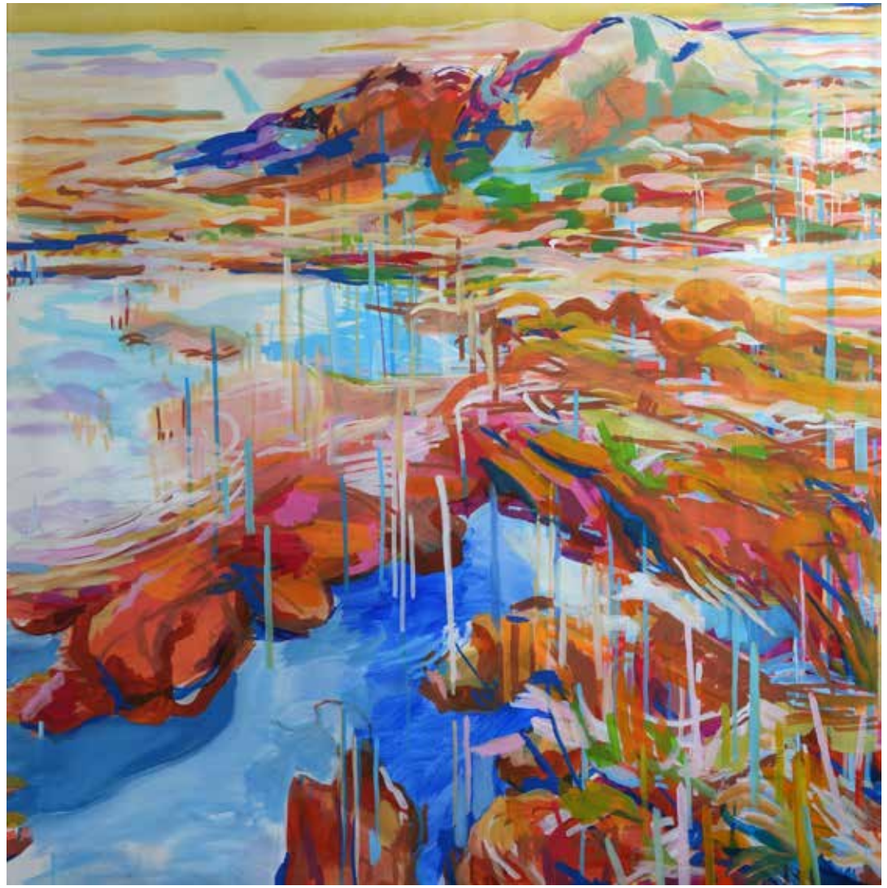
Dahn Gim's current series of sculptural work is an adaptation of the processes of collecting, re-assembling, and redefining discarded and found objects from her environment—from junkyards and curbsides, to the public parks and beaches of the city of Santa Monica. This collecting process, which also incorporates augmented reality, serves as a reminder of the excessive consumption of materials by human beings, and the billions of tons of waste that we carelessly dispose into the atmosphere, the oceans, and the land.

Dahn Gim, <<*Souvenirs From Earth: Black* >>, 2019, Augmented Reality, Nylon, Plastic, Trash, 24 by 36 by 5 inches





Above: Nikki Lindt, *Forest Boreal Thaw Alaska*, 2019, ink and acrylic on paper, 60 by 40 inches; *Facing page:* Nikki Lindt, *Permafrost thaw Bog*, 2019, Ink and acrylic on paper, 60 by 60 inches

PERMAFROST THAW

TUMBLING FORESTS OF THE NORTH

Nikki Lindt

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Permafrost Thaw, Tumbling Forests of the North is a multimedia project exploring how recent climate change is contributing to thawing permafrost in the Arctic landscape. I have been studying and documenting landscape collapse due to permafrost thaw for several years at the Toolik Field Station in northern Alaska. While onsite I recorded the sounds of permafrost thawing. The vividly colored and expansive sketches and the entrancing sound of permafrost thawing stand in stark contrast to the ominously surreal destruction of the changing landscapes. Though collapsing, these places are still growing lushly but in strange new ways. This duality suggested by my work reflects the complicated relationship and struggle between the immense destructive power of climate change and the persistent nature of growth.

HOW MUCH I WANT YOU

Anna Yin

> *Green, how much I want you green.*
> *Great stars of white frost*
> *come with the fish of darkness*
> *that opens the road of dawn.*
> —Federico Garcia Lorca

The North Star disappears tonight—
How long fading? no one can tell...
The city below busy with its contemporary complicity—
cars and passengers streamline as in a dream;
neon lights flash their false paradise.
Red rebellion buzzes on my screen,
sirens wailing.
Flaming in this fever,
I hear my own voice, frail and lean:
Green, how much I want you green.

Green oak, green door,
green park, green path,
all are burnt by the fire...
My lost people
weep before the winter falls,
weep before the vast cost.
I wish the summer storms
will slap hard on the land,
soak-scalding the madly crossed
great stars of white frost.

Truth, bleeding truth,
not from the red book,
not from the red oath,
but from the throats that have been cut.
My lost people
fooled by the heartless,
brain-washed,
burnt-muted,
living in the red starkness,
come with the fish of darkness.

Come stars, come rain.
Guide and cleanse
our lost men!
Awake us, shape us;
help us grasp the green peace.
Put thorns on our crown;
through the furious fire
compass us with the lion's mane.
Take us to the green lawn
that opens the road of dawn.

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GREEN

William Heyen

I could easily have been translated into the next dimension—lightning,
the ground sated, the wind

blowing arrows down around me from dead ash—but I kept sawing,
kept stacking

because the emerald ash borer came at us fast here in Seneca country,
I'd seen larvae

surfacing from bark, & then the jewel stage, trees sucked dry
by the Asians

against which you can pay mucho green for injections of poisons
to save a tree or trees,

but what's the use? I bitched, I lamented, I counted, I accepted the perfect
invasive species

who had no natural enemies here, who moved west across America, who maybe
will mutate & return

for our maples, oaks, catalpas, spruce—I kept sawing, kept stacking,
the grass blew green,

the sun went green, limbs fell in green light, my brain strobed
metallic green, I sawed.

Sara Mast, *Wound*

Sara Mast, *North Star*

SHEARD'S QUARRY

David Annwn Jones

Colourless, translucent,
pass through a silica star:
a powder of edges
stings the eyes:
six-sided prisms whirling,
seething through each other.

Somehow, in Roussillon's
ochre quarry, red changes
to pale and I'm back
in the sand quarries
of Cheshire, playing after
the trucks fall silent.

They've heaved acres
out of the recumbent dark.
Stepping down into it,
Simultaneously I'm
outside to the wide air
open, and intimate

as if in a room
where sand-grains
ease and quieten
underfoot, familiar
as a skin I shrugged off,
now re-discover.

I have been here all along
for sixty years, without knowing.
The birds seem careful
about themselves
in the few trees
around the rim;

all that moves here,
this surface accepts their patterns
and sets them into a circle of crystals.
We have come back
in a mirror made by no man
it is time to recover.

Heidi Gustafson, *Coastal Washington*, geologic exposure documenting 200,000 years of glacial movement and major climatic changes

Heidi Gustafson, Ochre pigments gathered from Coastal Washington geologic exposure shown in image on facing page. Minerals include: magnetite (black ochre), vivianite (blue ochre), hematite (red/pink ochre), goethite (yellow ochre), glauconite (green ochre), mineralized peat, and several other glacially distributed clays and sediments.

Andie Thrams, *Field Studies No. 19, Naupaka*, 2014

ON CONSIDERING EXTRACTION

Andie Thrams

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Ours is a profoundly difficult time, wrenching if one has a pulse that beats in harmony with any of nature's rhythms. As we plummet into a worrisome future, the concept of extraction holds disturbing resonance in resource and cultural spheres. How did we get here? What can we do? Can we avoid hopelessness? Does art matter?

Out of the Garden & Into the Fire

> *"For some people, what they are is not finished at the skin, but continues with the reach of the senses out into the land… Such people are attached to the land as if by luminous fibers; and they live in a kind of time that is not of the moment but, in concert with memory, extensive, measured by a lifetime. To cut these fibers is to cause not only pain but a sense of dislocation."*
>
> —Barry Lopez

Earth has always been our Garden of Eden. We were never kicked out. We extracted ourselves from Paradise by embracing hierarchies, assuming ourselves superior to certain other humans and creatures, more important than rivers, oceans, and forests. This arrogance has separated us from the natural world and created a vacuum within which we have justified extracting Earth's resources in destructive and unsustainable ways. This is not an effective longterm survival approach. If we fail to reconnect ourselves to the Garden (our biosphere), we may find ourselves in a living Hell.

Much of Western art, technology, and religion reflect separateness. The grand landscape painting traditions of the West reveal a distant view, portraying nature as something other, an idealized or frightening world from which we extracted ourselves. We spend hours interacting with brightly lit screens, holding them between us and the world, finding them more seductive than the wildness of our real embodied selves. We are locked into technologies that burn fossil fuels, warming the planet and harming most lifeforms. How can one grapple with this?

Andie Thrams, *Field Studies, Populus tremuloides*, 2019

The Net of Indra

> *"…and take ourselves as no more and no less than another being in the Big Watershed."*
>
> —Gary Snyder

On considering extraction, I wonder what energies and actions can move us toward a sustainable and more compassionate way of being? I grapple with these fearsome times by exploring interconnection. This is where I know myself to be effective and hopeful.

Indra's net, an ancient metaphor in Hindu and Buddhist philosophies, describes the infinite interconnectedness and interpenetration of all beings in the universe. Contemporary science confirms this entwinement of life forms. Trees are connected to each other and other plants via vast networks of underground mycorrhizal fungi. Salmon DNA is found in coastal forest trees. Our bodies hold the cells of more "other" organisms, such as bacteria, than they hold of what we think of as "us." Slime molds, butterflies, fish, birds, whales, and likely all that lives is being scientifically proven to be connected to each other in fascinating, tangible ways.

Back to the Garden

> *"And we've got to get ourselves back to the garden."*
>
> —Joni Mitchell

When we reawaken our dormant awareness of connection to all lifeforms, it is harder to justify exploitation and mindless extraction. What rekindles connection? Here is one person's path.

Concerns about burning fossil fuels, greenhouse gases, climate change, plant and animal extinction, unsustainable mining, fisheries, and forestry practices are not new. When the first Earth Day occurred in 1970, I was a senior in high school becoming aware of environmental degradation. I have carried this increasingly alarming awareness throughout my life alongside the delight of artmaking adventures outdoors from Baja to Alaska. Grappling with this paradox has been my very own lifelong zen koan.

I have found insight into this koan through painting and creating artist's books in remote forests. This work sustains my connection to the natural world, helps me deal with environmental angst, and brings me hope.

Why Artist's Books?

Starting with coloring books, and later sketch books and journals, I have delighted in sitting on the ground outdoors, drawing, painting, and writing on paper. Studies in art, natural history, and design at UC Berkeley led to work in illustration and graphic design in Northern California and Alaska. The natural history field journal tradition has inspired and generated a lifelong practice. For a long while, I thought of my journals as visual diaries and source material for studio work. I never considered them art.

Andie Thrams, *Birdsong, Redwood Mountain Grove, Hermit Thrush*, 2018

When I landed at San Francisco Center for the Book in the 1990's, to learn how to bind my own journals, I was introduced to the book as a hand-held art form. This was a revelation, expanding how I thought about field journals. Soon after, the Sitka Center for Art & Ecology offered sanctuary for creative exploration. During a four-month art residency, I hardly used the provided studio. Instead I worked daily in the surrounding coastal rainforest, rain or shine, on unbound field journal pages. My studio was the forest, and the artist's book was becoming a resonant form.

Many aspects of the book form suit me. Folded or rolled sheets of paper are easily tucked into a pack or kayak. The materials I use, watercolor, ink, and gouache, are lightweight and also easily transported, allowing me to work in remote places. Moving through the pages of a book is like walking into a forest. One must enter in and move through to explore a book's content or wander a path. I find technical and spiritual resonance in illuminated manuscripts—the way a book of hours marks everyday sacredness—and in the accordion-folding screens used as alter pieces in Shinto shrines.

My field journals evolved into one-of-a-kind artist's books, made mostly outdoors. They hold drawn and painted imagery, often with hand-written text addressing environmental grief and natural history observations. Painting, walking, drawing, meditating, and observing nature are inseparable aspects of my practice. I trek into wildland forests on foot or by kayak for hours, days, or weeks. During these sojourns, I sit on the ground, next to trees and other plants, sometimes beneath a tarp, and work in response to each moment, clouds, plants, birds, animals. I invite the unpredictable in by painting with local river, lake, or sea water; allowing found bark, leaves, soil, sap, and fungi to mark the paper; setting work out in the rain; drawing with forest charcoal; painting with found twigs dipped in ink. The artist's book has provided a form to chronicle experiences of reverence and connection to place.

Feeling Small is a Good Thing

"I'm a little beast in a big, big universe."
—Hushpuppy, in the film
Beasts of the Southern Wild

I often work alone, and can feel very small, even as prey, but not without power. Feeling small creates attentiveness and a healthy sense of not being the center of the universe. I am but one tiny thread woven into a vast network, as the Net of Indra and the science of ecology declare.

Many experiences of powerful connection have happened while working alone: crossing paths with a swimming bear while paddling my kayak across a deep fjord in Prince William Sound, wandering through dense wildflowers in the Brooks Range to find myself face to face with a golden-eyed wolf, painting in a blueberry thicket in Denali National Park while caribou walked so near I could hear the clicks of their ankles, and receiving late afternoon visits from a pygmy shrew while painting in Glacier National Park. One of finest moments was

Andie Thrams, *Field Work, Kenai Fiords*, 2017

with a bear in a backcountry sequoia grove in Sequoia National Park who calmly but persistently approached my painting spot till I had to retreat to a nearby tall boulder—with my food in tow, but not my art supplies. This bear proceeded to gently bite into my plastic ink bottle, so carefully that she left tooth marks, but no punctures. Why did she do that? While exploring my art materials, she paid no attention to my repeated loud pleas, "Hey Bear! Leave those art supplies alone!" Finally, when my soft spoken husband arrived, he suggested I stop talking mean to this tolerant and curious bear, and quietly asked her to leave my art supplies alone and go. Which she did, leaving no damage behind. I still have that ink bottle.

These experiences and that bottle remind me I am a small creature woven into beautifully complex systems that include unknowable things. When I carefully trace the edge of a leaf with pen and ink, and think I am the observer, other creatures see me, many I will never know of. Who is the observer and who is the seen? My awareness extends beyond who I perceive myself to be, and each mark draws the world more deeply into my being. A mutual interpenetration occurs and I am changed. Reverence and awe expands where our edges are; and this can alter how the world responds to us.

There is no end to my delight in being an embodied human in Earth's Eden. There is no limit to my love for the beauty and mystery of life. This is biophilia, a word defined by Edward O. Wilson in his book, Biophilia (1984) to mean "the rich, natural pleasure that comes from being surrounded by living organisms." And yet...

Solastalgia

Alongside all this delight and attentive observation lives great despair, for what is happening to our beleaguered planet can't be ignored. The more one experiences a profound connection to this Earth, the more painful is awareness of its destruction. There is a relatively new term for this particular despair. Solastalgia is a word coined by Australian environmental philosopher, Glenn Albrecht, to describe the unique emotional pain produced by environmental degradation impacting people in their home habitats. This is homesickness for places we can never

Andie Thrams, *Field Studies, Enchantment*, 2019

experience again, for flowers that no longer bloom where we saw them before, for old growth forests where we wandered, now gone, the open pit mine scarring the wide open spaces where we once stargazed. This is the terrible pain of our times, and we ignore it at our peril. It is unbearable and paralyzing if we don't also experience sustaining connections to Earth and to each other.

A Path

"Use what you have. Do what you can."

—Bill Stewart

What rekindles a connection to Earth's energies is unique and findable for all. If more of us follow a path that fosters connection, our extraction-based culture will diminish, and fewer of us will fall into despair. Delighting in the Garden is life-sustaining and where resilience to fix our dislocated culture and repair our planet can be found.

My path is making art outdoors, studying natural history, sharing biophilia and solastalgia through artwork and teaching. This work is my prayer for wildness on Earth and keeps me connected to the Garden and hopeful.

When we first go outdoors, I ask my students to leave their devices behind. What happens next always gives me hope. Invariably, after moments of fidgeting, almost everyone of any age or ability, will sink into quiet wonder, listen attentively, jot down notes, trace a leaf, fall into the magic of now—available to us all the time, but often obscured by screens and feelings of isolation. It is so simple a thing: go outside and be still. It reconnects us to Eden and is always within reach.

I find solace believing my admittedly small acts matter, that these modest persistent efforts foster kinship and connection, even if for only a few, making a culture based on mindless extraction harder to accept.

Biophilia

"A walk through the forest strokes your fur,
the fur you no longer have. And your gaze
down a forest aisle is a strange, long
plunge, dark eyes looking for home.
For delicious minutes you can feel your whiskers
wider than your mind, away out over everything."

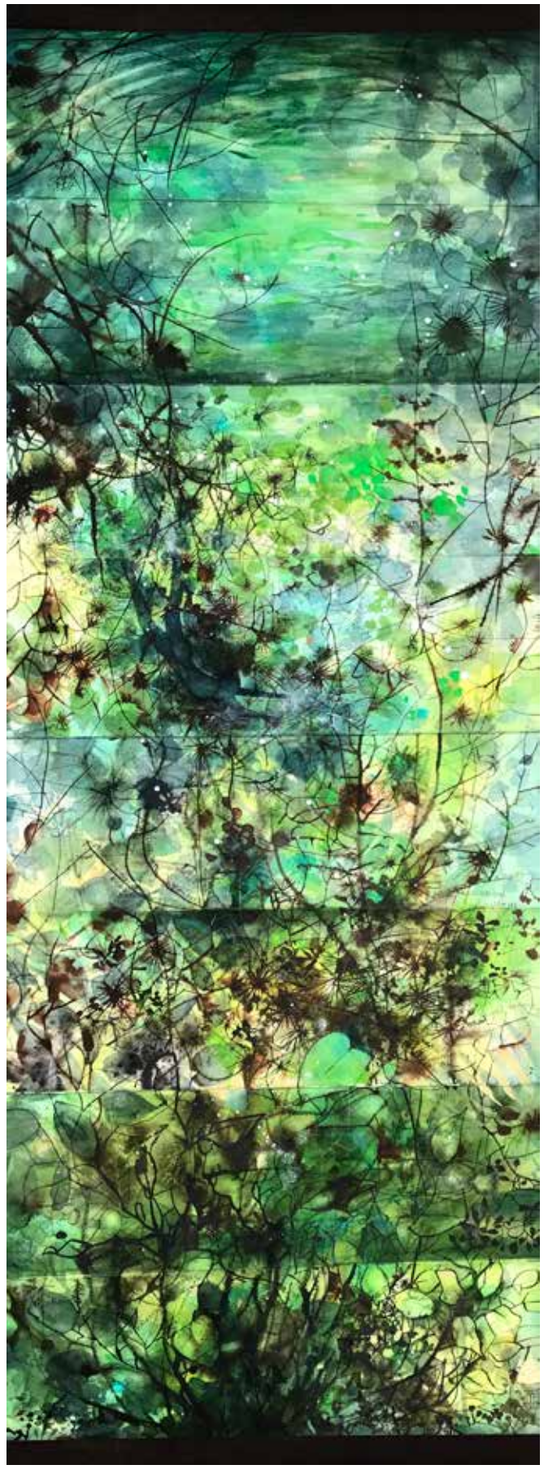
—William Stafford

Not sure what else to say here, I walk into the icy December morning. A cold sun streams through interior live oak and ponderosa pine, backlighting lichen-covered twigs and putting a dull sheen on manzanita leaves. I hear staccato chips from a ruby-crowned kinglet, chattering bushtits, the raspy-voiced oak titmouse, and raucous northern flickers. The air is calm and carries the crisp scent of pine. I feel deep gladness and an impulse to trace all the shapes and patterns I see with pen and brush. Then, I cry.

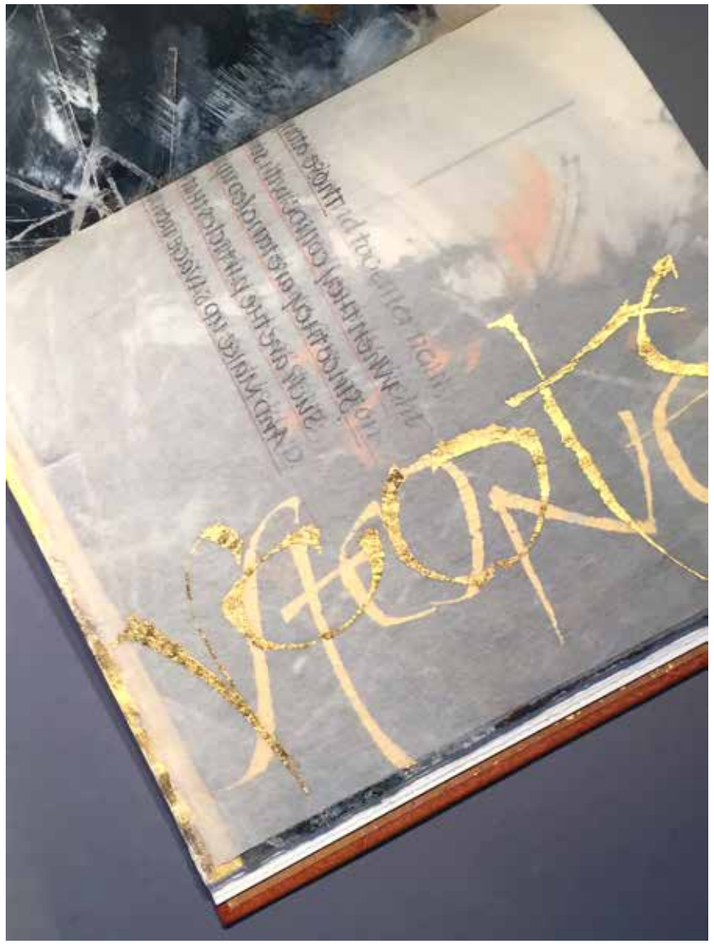
I notice dying needles high up in a pine and wonder: bark beetle? I know it'll all burn here, sooner or later (it last burned in the 1960s), and I worry we may be here when it does, or that we won't. I remember the wild delphinium, ginger, and tiny orchids I used to see in these woods, and haven't for a number of years. I am sad about neighbors cutting down everything that grows out of fear of fire. Why so few robins coming through this month, when we used to see hundreds each December? Are they just late? Are these "normal" fluctuations? Or more endless indications of the havoc we wreak?

I know I am part of what ails the Earth. My attempts to live mindfully don't make much of a dent. Still, I believe it matters if we try. So, I do. What we really need though, are fundamental changes to our social and political systems, with intelligent leadership willing to legislate sustainable policies. Seems to me voting is the single most influential act one person can take in the face of our culture of extraction. So, vote I will.

I'll also continue to experience and share the empowering feelings of solastalgia and biophilia, to feel it all and not forget what is happening. I'll try not to despair too much so I'll have energy to take action. And, for as long as I can, I will wander, sit quietly in wild places beneath giant trees, listen to birds, study and record as many shapes and colors as I can, and let every brushstroke weave me more deeply into my surroundings. I know feelings of separateness will fade, and a sense of wonder and reverence for our small planet will gladden my heart, and strengthen me for whatever is to come.



Andie Thrams, *Field-Studies No. 32, River Dream*, 2019



Suzanne Moore, *Roots of Stone*, 2017. Titus Lucretius Carus, Excerpt from *The Nature of Things*, 2017. Translation by A.E Stallings, 2007. Lucretius' first century insights regarding the question of origins, the nature of atoms, "the universe's rich variety" and the sacred nature of the earth we inhabit are timeless and compelling. He offers us a call to action, across the millennia.

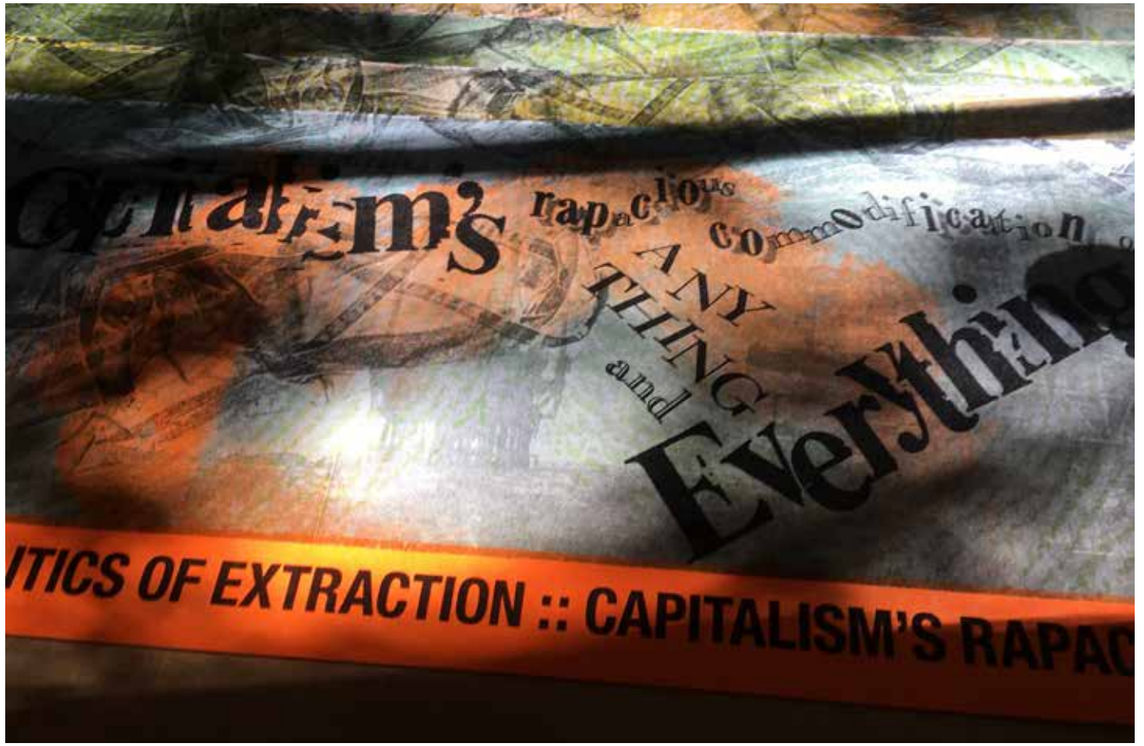
Suzanne Moore, *Roots of Stone*, 2017. Titus Lucretius Carus, Excerpt from *The Nature of Things*, 2017. Translation by A.E Stallings, 2007

Full leather binding by Donald Glaister, 2017

Robin Price, *Witnessing a Dire Future: Cassandra, Rachel Carson, and our Contemporaries*, 2016, mixed media on paper dipped in beeswax, gathered with linen cord and attached to board pedestal

Upper: Robin Price, *Ecological Reckoning: the agave plant book* (prototype for 2020 edition, shown with the artist), 2019, mixed media on paper dipped in beeswax with container created in collaboration with Daniel E. Kelm; *Lower:* Robin Price, *Gather Courage*, 2017, letterpress print with wood & metal

Felicia Rice, *The Necropolitics of Extraction*

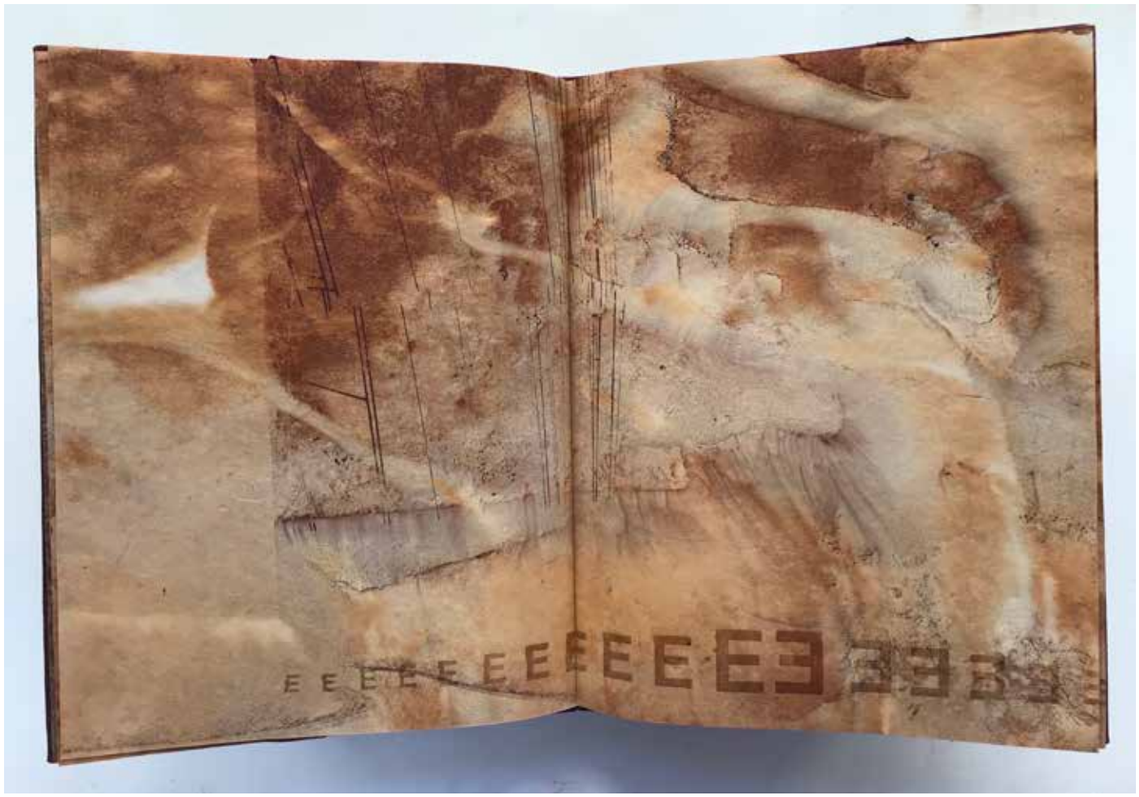


THE NECROPOLITICS OF EXTRACTION :: CAPITALISM'S RAPACIOUS COMMODIFICATION OF ANYTHING AND EVERYTHING :: COMPLEX CAUSALITIES AND EFFECTS OF GLOBAL EXTRACTIVISM :: EXPLOITATIVE INTERNATIONAL TRADE AGREEMENTS :: FINANCES OF DEBT SERVITUDE :: SACRIFICE ZONES GIVEN OVER TO RESOURCE MINING :: EMANCIPATION AND DECOLONIZATION :: MOVEMENT BUILDING AND SOLIDARITY WITH THOSE ON THE FRONTLINES OF OPPOSITION :: TO MAKE THE POSSIBLE GRADUALLY POSSIBLE, THERE IS NO OTHER CHOICE

THE NECROPOLITICS OF EXTRACTION
Text by T.J. Demos
Bookwork by Felicia Rice

An edition of forty 9" x 11.5"
accordion-fold books that extend to 17'

Moving Parts Press
movingpartspress.com/publications/extraction



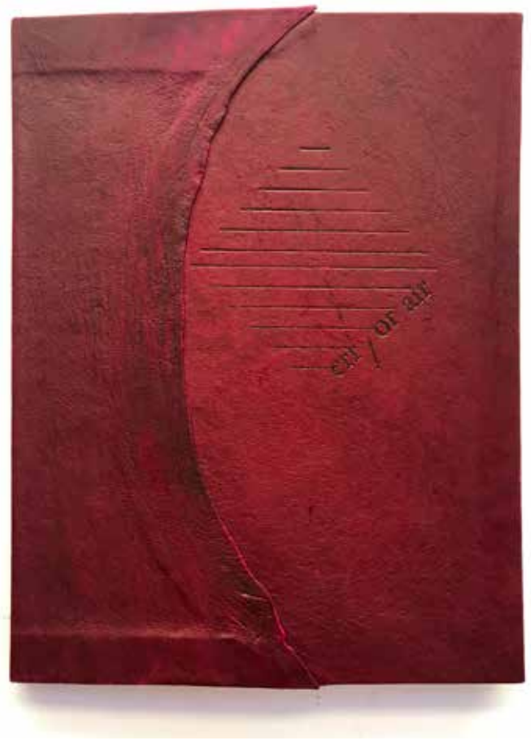
ERR/OR AIR

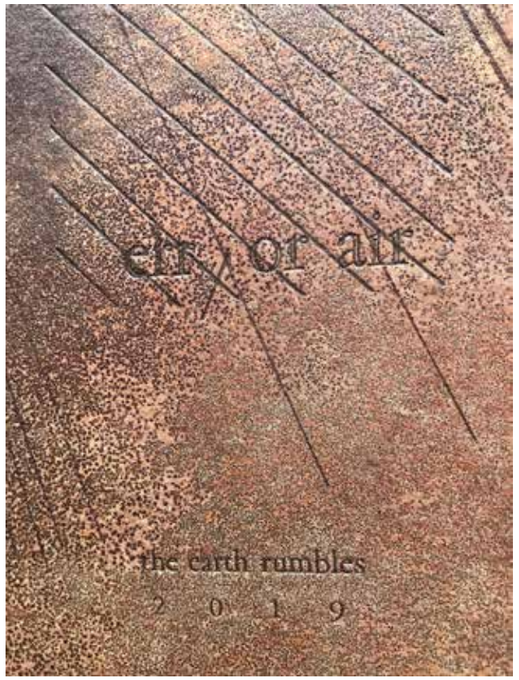
Brooke Holve

WWW.BROOKEHOLVE.COM

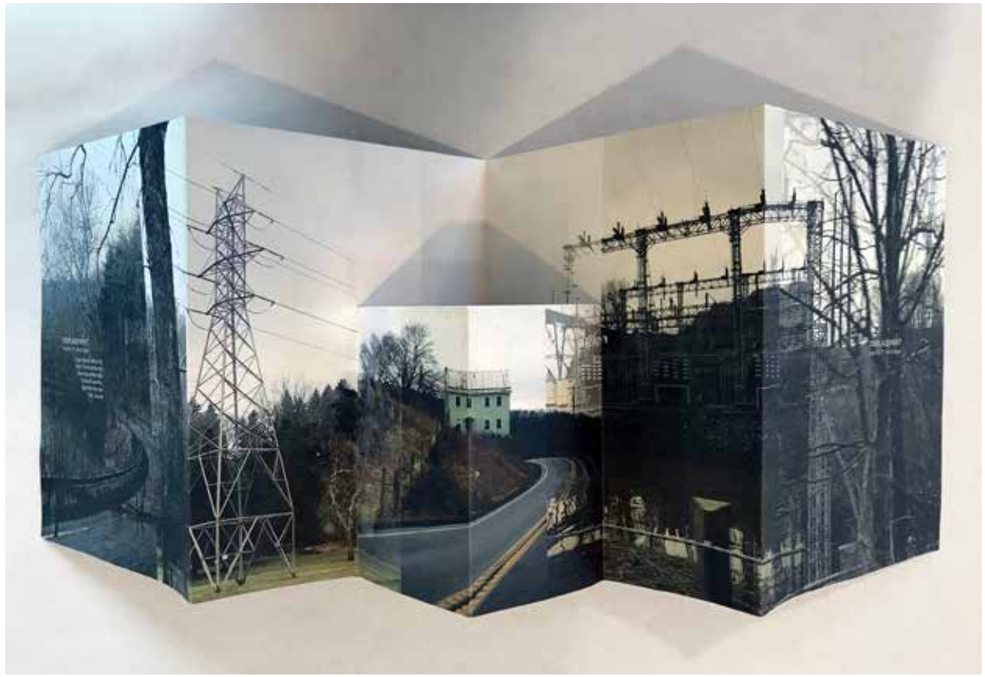
Brooke works to integrate process and material, her way of expressing content for the work. She often experiments using natural processes, subjecting materials to earth, weather, and other elements around, observing what happens with their interaction.

In *err/or air*, she works again with "In the Wave of the Father," a poem she wrote and used to shape an earlier artist book, *Scrapped*. *err/or air* alludes to the "breaking down," the part of a larger cycle of shaping and reordering the earth.





Brooke Holve, *error/air*, Artist Book with Clamshell Box: letterpress, screen & xerox transfer prints on rust-stained kitikata paper, assorted papers, book board, New Zealand possum skins. 11 by 8.5 by .5 inches



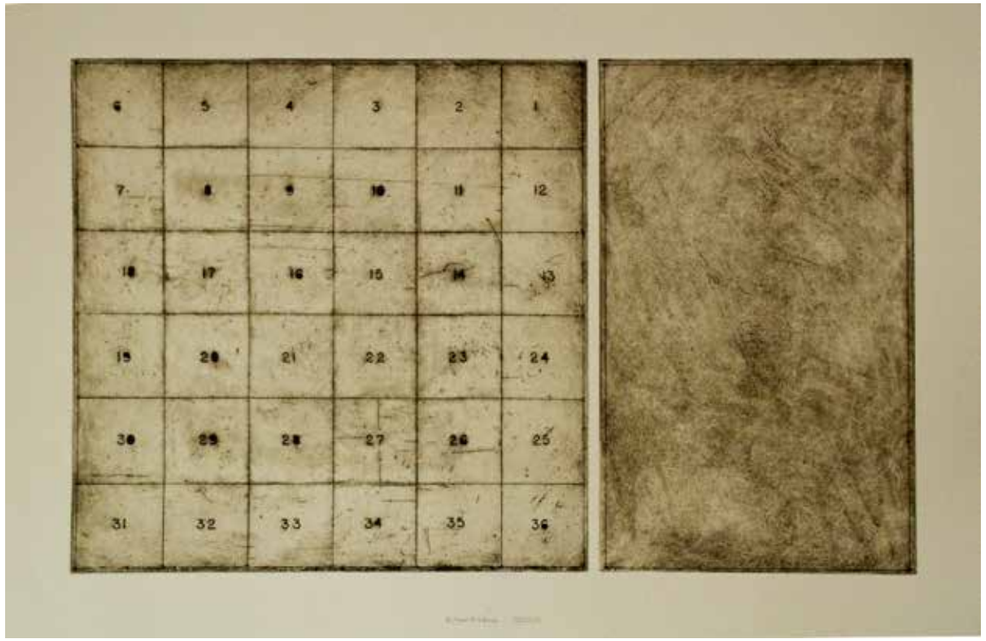
Kathy T. Hettinga, *DISPLACEMENT*, 2018, artist's book, 8 by 6 by 0.5 inches closed, 8 by 24 inches open, archival digital ink, paper Mohawk Superfine, 100 lb. text, 80 lb. self-closing wrapper

Tracy Linder, *Pound of Flesh*, *installation detail*, 2019, Tracy Linder, leather, polyester resin, mulch

Tracy Linder, *Tractor Hides*, 1997–98, photo emulsion on animal collagen, polyurethane, steel rod, disc, light

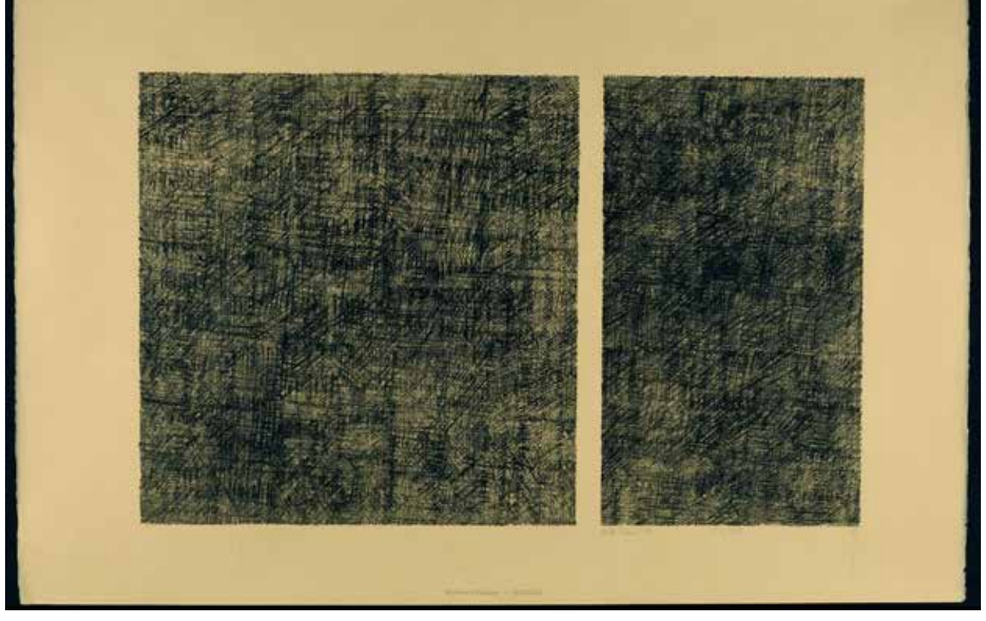
Brock Mickelsen, *Rewilding Silver King*, 2018, Scan of a 4 by 5 inch ambrotype. This image was created in collaboration with Silver King Lake, and our more than human siblings encircling him. If we are to serve as responsible stewards in the Anthropocene, we must relearn to listen with our whole being.

Brock Mickelsen, *"Wild" Apple*, 2018, Scan of a 4 by 5inch ambrotype. This image is part of an ongoing exploration into "wild" apple trees of the mountain west, an investigation in which the trees serve as segregate for discussing how non-native plants and people can become responsible members of more than human communities of place in the Anthropocene.

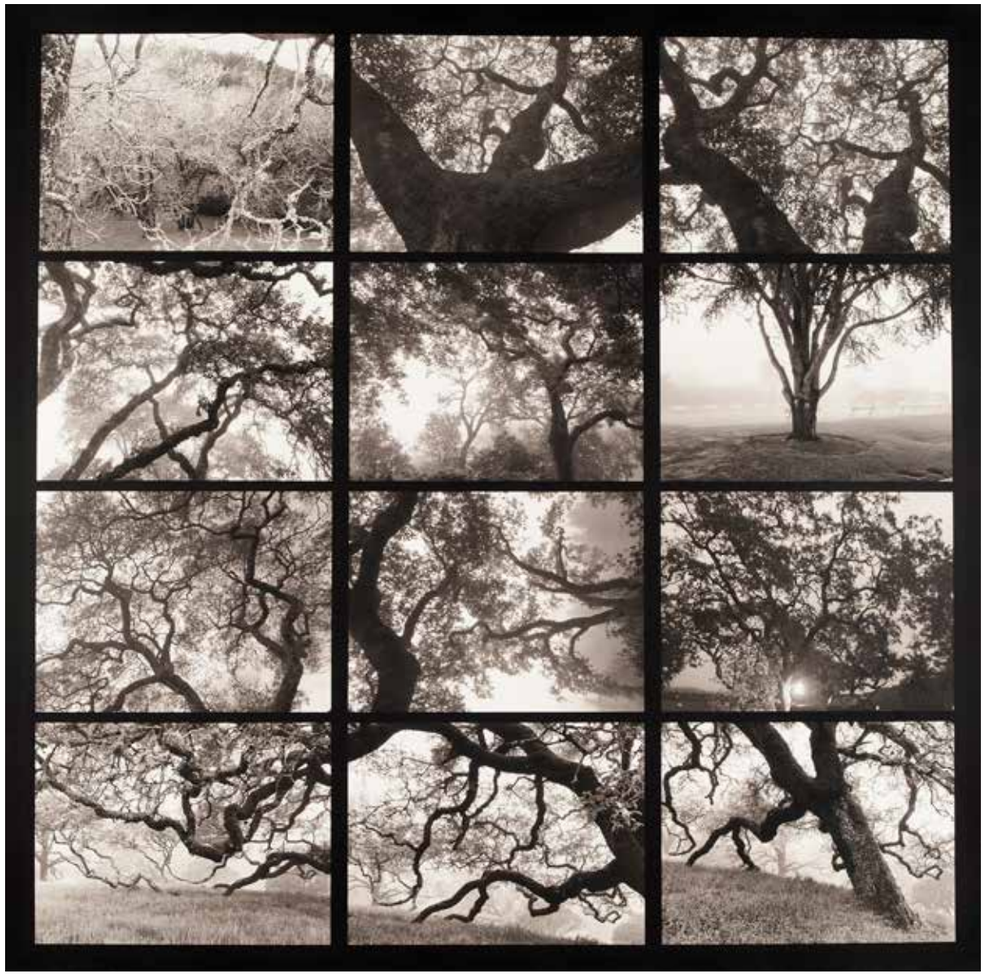


Steven R. Holloway, *Mapping the World (Township and Range division of the western* U.S.A.), etching, two matrices on Somerset

Steven R. Holloway, *The Gate at the Crossing at El Coyote on the Vamori Wash to Many Dogs Place (USA-Mexican border North 31˚ 33′ 31″ West 111˚ 46′ 57″)*, inked string and letterpress on crumpled Kozo



Steven R. Holloway, *Milk River* T&R *(Milk River and* T&R, *Montana-Alberta-Saskatchewan)*, lithograph on Kitakata



Above: Robin Dintiman, *Annadel Oaks*, 2018, Palladium Print. *Right:* Robin Dintiman, *Close to Our Bones: Being*, 2019, eucalyptus, fern, bamboo, trash, steel, eurathane industrial foam.

DOWN INTO EARTH

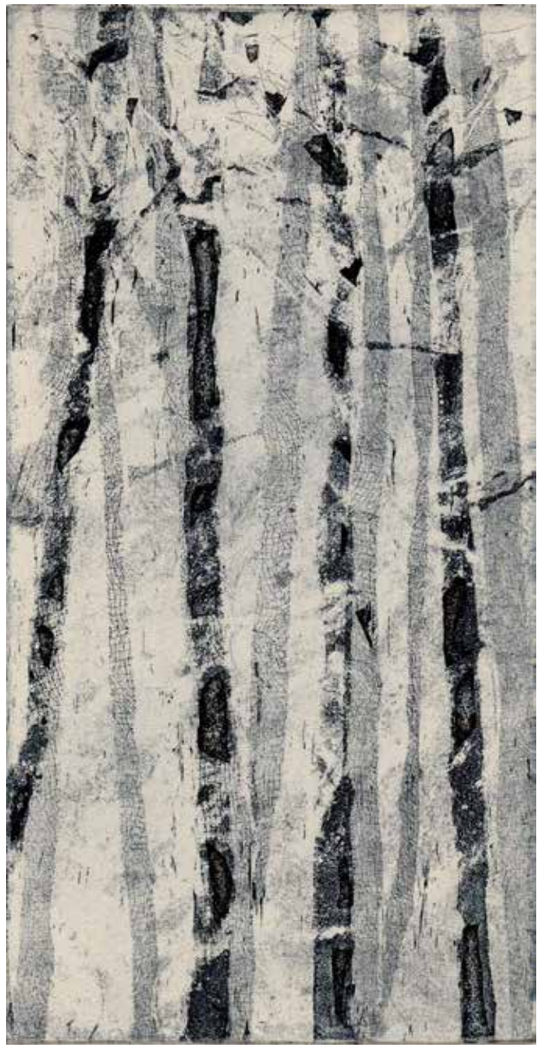
Robin Dintiman

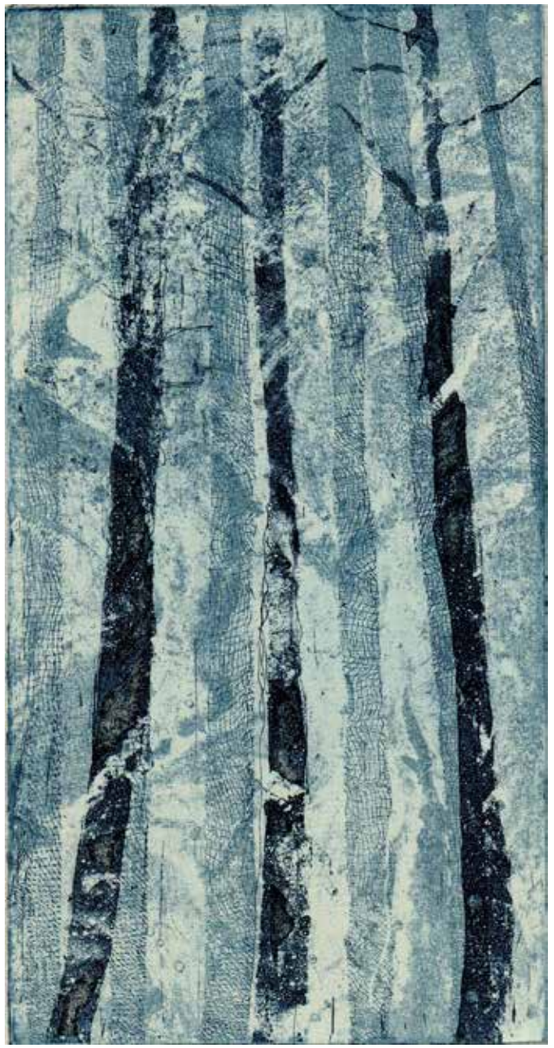
Departing, partly, uncomprehensible
Sebaldian in it's penetrating Mourning,
we are.
Earth, our return to point of departure, vanishing.
With awe, quaking our limbs apart from consciously
knowing in the bones.
We know, slipping on leaves comes tho.
Solastalgia carves into the heart, a naming, aids the raw
open wound.

OUR BREATH

Christina Isobel

I walk in the silence of the trees
A journey of the breath
Into the heart
Out to release—
Moss growing up my ankles.
One step, two
Straight as trunks
Branching from my spine
Bark a cracklin'.
Out the air goes
Through my mouth—
Curves in space
Following currents
Between two worlds,
Mending the particular
By connecting to the whole.
Leaves a canopy
'Round my shoulders
Sticking out my ears.
Now I know trees
Are the lungs
Of this world.





Left: Caroline Saltzwedel, *Forest #1*, etching
Right: Caroline Saltzwedel, *Forest #3*, etching

YOU ARE THE TREE

Nanette Wylde & Kent Manske

You are the Tree is an interdisciplinary, community-focused artwork by Kent Manske and Nanette Wylde commissioned by Fung Collaboratives for the Ark Kiosk in Redwood City, California (February 1 – March 8, 2020). The installation celebrates local labor while considering the linked histories of Redwood City, the San Francisco Bay Area and California as members of our shared global citizenry. The project juxtaposes the historical facts of the nineteenth century clear cutting of old growth redwoods from the Santa Cruz Mountains with the resultant development of Redwood City, both historically and currently, with emphasis on the contrast of disruptive innovations and resurgent interests in slow/by hand/craft industries.

Centered on the floor of the kiosk is a seven foot diameter replica of an old growth, coast redwood tree stump. The stump's multi-colored and highly textured bark alludes to the beauty and value of human and environmental diversity. Concentric growth rings are visible on the surface of the stump. Small flags mark significant disruptive innovation events which occurred during the last 400 years, the lifespan of the tree. A living redwood tree sprouts from the stump's center.

This handcrafted paper pulp structure was made from locally sourced, Redwood City, craft industry byproducts such as spent beer grains, eggshells, fabric scraps, flower parts, and hair. The twenty-five unique bark sections are tagged with legacy tree markers to identify both contributors and byproduct materials. Each section celebrates local labor and honors people who make things with their hands.

We live in a time of hindsight and nostalgia. The advancement of digital technologies and the way they have allowed us to see into and connect with the lives of others on a global scale, have something to do with this. Digital technologies have also changed the way we work. Humans are makers—our cultural and evolutionary histories are based, in large part, on our physical labor and inventions. Today, many of us work in offices in front of computer screens. Today, many of the challenges of survival—which previously involved being out-of-doors navigating wild places—have been replaced with monetary and data systems which require navigating people in offices and structures of compliance.

When California was being colonized by the Europeans and European Americans, the prized resources extracted from her soils were, of course, gold, and also the seemingly abundant, excessively majestic, redwood tree. These are the two primary resource extraction industries that resulted in the development of Redwood City. Neither was sustainable. Although it brought new populations to California, the Gold Rush was relatively short lived at seven years. The nineteenth century extraction of the Coastal Redwoods resulted in the removal of 95 percent of these old growth trees in less than fifty years. Globally, old growth trees of all species are still at risk, but now more for the land they occupy than the lumber they provide. Today the prized resources extracted from our planet are hydrocarbons in the form of crude oil and gas. These run the global economy, and the rights of control over them is the stuff wars are made of.

Here, in 2020, we are able to see many of the effects of our past practices, and many of these are not positive in terms of human and planetary health. Our cities, and even our countrysides, are built from materials extracted from our earth. These built environments were not designed as self-sustaining systems, but rather lack stability, depend on continuous maintenance and are ever hungry consumers of energy creating resources. Our habitual natures and societally created beliefs encourage us to continue in lifestyles that we know are unhealthy for us, individually as well as collectively, and are unsustainable as we continue to deplete earth's resources. Invented needs and media induced presumptions allow us

Kent Manske & Nanette Wylde, *You are the Tree (detail)*, 2020, community focused, paper pulp installation with legacy tree markers identifying local industry byproducts and supplier

to believe in our own absence of determinancy, and rights of privilege over the natural world. Our consumer demands discourage conservation.

Simultaneously, we are experiencing a resurgence of interest in and desire for slower lifestyles that involve the mark of the handmade. We are becoming aware of our psychological need as humans to be in wild places and away from our devices and plastic appliances. There are many things that feel empty or are just not as good when carried out by a robot, computer program, or artificial intelligence product than they are when made with human hands. We are drawn to nature as well as to the handcrafted, creative products of our fellow humans.

Redwood City is significant in the history of California because of its proximity to a variety of exploitable natural resources, and because of its natural geographical features—it originally had a sizable navigable creek, Redwood Creek, and it is the only deepwater South Bay port. The rapid development of this region is based on natural resource extraction industries. It is these that prompted California statehood in 1850, and mass migrations to California which began during the California Gold Rush. People were looking for new ways to "make a living" and improved lifestyles. Speculators and investors were looking for wealth.

There were five natural resource extraction industries which influenced and prompted the development of Redwood City. The first was the California Gold Rush which began in 1848 and ended by 1855. In 1848 California's population was consid-

Kent Manske & Nanette Wylde, *You are the Tree*, 2020, Seven-foot diameter replica of an old growth redwood tree stump with 25 unique bark sections made from industry byproducts, living coast redwood tree

ered to be roughly 160,000 people, most of whom were Native Americans. At that time, California had just been ceded to the United States as a result of the Mexican-American War [1]. The Gold Rush brought an additional 300,000 people, mostly European Americans, but also people from other lands. These immigrants perceived California's natural resources as opportunities available to be taken.

The clear cutting of the Coast Redwoods began in the 1850s [2]. The Santa Cruz Mountains which extend south of San Francisco to Monterey Bay, were logged first from the east side. The logs were dragged by oxen down to Redwood Creek and then floated up to San Francisco via tidal action for use and export out to the world. This resulted in the development of the Port of Redwood City [3]. Once the forests on the east side were cleared, logging began on the west side. The majority of these trees were hauled up to the summit and then back down to the Port of Redwood City as this was easier than moving them up the coast to San Francisco via the ocean. Every old growth tree in the Santa Cruz Mountains would likely have been harvested if not for a group of concerned citizens who founded the Sempervirens Fund in 1899 [4]. Most of the Coast Redwoods that we see today are between 50 to 150 years old. The old growth redwoods logged in the nineteenth century were upwards of 2,000 years old.

Poison residue from mercury mining continues to be a critical Gold Rush effect in terms of human and animal health in the San Francisco Bay region [5]. Mercury was used in gold mining to separate the gold from sediment and rock. California was rich in cinnabar, a common mercury mineral easily identified by its red color. This discovery resulted in thousands of mercury mines. Many were located in the Coast Range [6]. Mercury enters the Bay from tributaries near the mining source as well as being carried down from gold mining sites in the Sierras. The single most significant source of mercury in the San Francisco Bay is the New Almaden Quicksilver mine, located near the Guadalupe River in the Almaden Valley, now a part of South San José. When mercury enters water systems bacteria transform it into a highly poisonous neurotoxin, methylmercury, which is absorbed by plant life and subsequently moves all the way up the food chain to human and animal consumers of Bay Area seafood. Mercury continues to enter the Bay from various watersheds, including the Guadalupe River. There are attempts to limit mercury run off and clean up the Bay, but legacy amounts (meaning that which entered the Bay during the Gold Rush) of methylmercury which remain on the Bay floor are continuing to erode and are impossible to clean up [7].

For thousands of years prior to the Gold Rush era the San Francisco Bay was rich with oysters, which were a food source for the Ohlone and Coastal Miwok people. Evidence of this were the existence of massive shellmounds throughout the Bay Area [8]. These ancient oyster beds produced a relatively small oyster which the new inhabitants of the Peninsula thought to be inferior in taste to oysters from the East Coast. Thus attempts were made to reseed the Bay's oyster beds with East Coast varieties. As Bay Area cities developed and the area industrialized, pollution, including raw sewage and massive amounts of sediment from hydraulic mining in the Sierras, resulted in oyster industry failure. In 1923 South Bay Morgan Oyster of Redwood City sold their holdings to Pacific Portland Cement (now CEMEX). Pacific Portland Cement began dredging the bay to remove the oyster beds, some thirty feet deep, to make cement [9]. The decimation of the oyster population and loss of reefs significantly affected local wildlife habitats and ecosystems. Currently, the California Coastal Conservancy with the San Francisco Bay Living Shorelines Project are working to bring back the nearly extinct Olympia oyster and restore its long-lost reef habitat in the San Francisco Bay. This is important as oysters are exceptionally effective water filters, when not overwhelmed by excessive pollution [10].

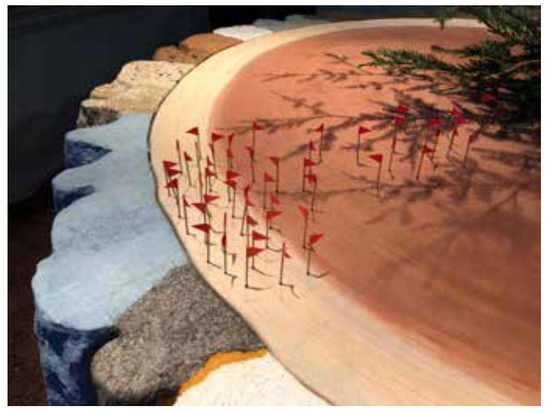
Salt extraction is another industry with a long history in the Redwood City area [11]. Significant environmental issues resulting from salt extraction have to do with the creation of salt ponds—the walling up of marshlands via built levees to prevent bay water in the form of tides from flowing in and out. This resulted in damage to tidal marsh ecosystems and bay wildlife [12]. It is estimated that 95 percent of the original tidal salt marshes were lost by 1990 [13]. Salt extraction is responsible for most of this loss. Tidal marsh restoration is a recent effort towards repairing Bay Area ecosystems [14].

Hydraulic mining is an example of a disruptive innovation which took place in California in the 1850s. This technology replaced pick and axe mining by using water cannons to wash gold and sediment out of the mountains and hillsides. It was responsible for significant scarring of the Sierras and fill-in of the San Francisco Bay and the Bay's waterways. Hydraulic mining in the mid-nineteenth century required daming of small valleys in the Sierras for the purpose of creating a high pressure water flow. After pounding a targeted hillside, the water flowed down towards the ocean. The Sacramento and San Joaquin Rivers are part of this watershed. These rivers' ecosystems were damaged by gold mining runoff—mercury and silt—which filled in their beds and contributed to flooding in the Central Valley. Rock and silt from this 1850s practice continues to enter the Bay watershed [15]. The collective labor requirements of hydraulic mining also transformed independent gold miners into wage labor workers.

Conclusions

One of the complexities of our current extraction-based culture is the relationship between issues of sustainability and the real need for human occupation, i.e. employment. Disruptive inventions such as artificial intelligence and robotic technologies compounds this human labor component as machines increasingly take on our previous physical occupations. We see this most obviously in political discourse around jobs and employment as reasons to continue in destructive and often outmoded extraction industry practices such as the coal industry. At least, the employment language is targeted at the vulnerable working class voter. It is likely not the real motivation to keep such industries going. The real motivation is most probably corporate profit.

So we have a dilemma. Humans need occupation—physically, mentally, and psychologically. We have evolved thus. But the culture we have created and currently exist in removes "meaningful" occupation from many of our lives. Consumption practices may be a substitute for meaningful occupation. However, most consumption practices do not address, let alone resolve, our shared global challenges. Rather they exacerbate many of our real, as well as perceived, problems. Sustainability of life on this planet, as we know it, among them.



Kent Manske & Nanette Wylde, *You are the Tree (detail)*, 2020. Flags on tree rings mark significant disruptive innovation events which occurred during the 400 years lifespan of the tree.

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Footnotes

[1] The Spanish began colonizing California in the 1700s. It became a territory of Mexico in 1822.
[2] Sequoia Sempervirens are among the oldest living things on this planet. They are also the tallest of trees reaching upwards of 379 feet and 29 feet in diameter. Their normal lifespan was between 1200 - 2000 years. They are currently considered endangered.
[3] Originally called The Embarcadero. Names in this region have changed many times over the course of Western settlement.
[4] The first protected grove was in Big Basin Redwoods State Park.
[5] Brilliant Earth.
[6] Only 12 percent of the 220,000,000 pounds of mercury mined was used for gold recovery. The rest was shipped out to Pacific Rim countries and western states. Alpers.
[7] Mann.
[8] Shellmound and Mound as place names continue in the Bay Area.
[9] "Pacific Portland Cement Company's mill at Redwood City, which produces cement far in excess of a million barrels annually, utilizes seashell accumulations from San Francisco Bay as its sole source of lime." Jenkins.
[10] Barrett.
[11] Various South Bay salt extraction industries ran from the current locations of the San Mateo Bridge all the way to the Dumbarton Bridge.
[12] Marshland, Salt marsh, Tidal marsh, Wetlands and Baylands are used interchangeably for this ecosystem.
[13] Clarke.
[14] Meadows.
[15] Romans.

Jacqueline Rush Lee, *Whorl II* detail, 2019, transformed book sculpture from "Whorl" Series, created in collaboration with nature, 8.5 by 7 by 5.25 inches

WHORL

Jacqueline Rush Lee

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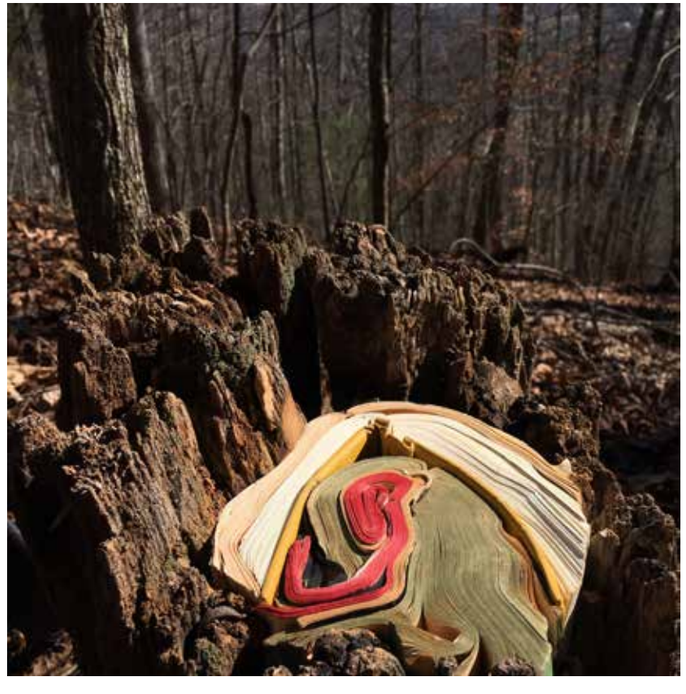
Referring to the basic patterns of the human fingerprint, Whorl is a site-specific, time-based installation that works in collaboration with nature. The installation consists of a number of sites where found, aged, cut logs and residual tree stumps of varying dimensions have book forms inserted into the cavities, then later extracted as documents of change.

As iconic vessels of culture, knowledge, and classification systems, books are returned to their botanical origins and gradually subsumed by nature; positing how time, and changing weather conditions and insect activity affect the narrative of the original work.

Whorl reflects on both the interconnectedness and precariousness of our relationship between nature and culture; stimulating dialogue on how we leave our mark on nature, and how nature eventually leaves its mark on us as a larger, comprehensive system at work.



Above: Jacqueline Rush Lee, *Crowning Whorl*, 2016 to 2019, manipulated books, stump from "Whorl" Series, site-specific installation, University of Hawaii, Bamboo Breezeway, HI; *Left:* Jacqueline Rush Lee, *Penland Whorl*, 2017, manipulated books, stump (site-specific installation), 3 feet by 2 feet by 2 feet

Jacqueline Rush Lee, *Whorl*, 2015, transformed book sculpture from "Whorl" Series, created in collaboration with nature, 11.5 by 7.5 by 8 inches

Jacqueline Rush Lee, *Flesh Made Word*, 2018, transformed book sculpture from "Whorl" series, created in collaboration with nature, 6.5 by 5 by 6 inches

EMANCIPATION PROCLAMATION

William Heyen

Whereas it minds its own business
& lives in its one place so faithfully
& its trunk supports us when we lean against it
& its branches remind us of how we think

Whereas it keeps no bank account but hoards carbon
& does not discriminate between starlings & robins
& provides free housing for insects & squirrels
& lifts its heartwood grave into the air

Whereas it holds our firmament in place
& writes underground gospel with its roots
& whispers us oxygen with its leaves
& so far survives our new climate of ultraviolet

Whereas it & its kind when we meet beneath them
shade our sorrows & temper our prayers
& their colors evoke our dream of beauty
from before we were born into this hereafter

We the people for ourselves & our children
necessarily proclaim this tree
free from commerce & belonging to itself
as long as it & we shall live.

THE WEB

William Heyen

I watched a wasp fight a spider whose geometric web encased honey-
suckle leaflets.

The wasp shook far strands where it had landed & gotten caught,
& now the spider

rushed at it, they grappled, then separated. I couldn't tell if either
had been wounded....

The spider retreated several inches, but fixed its eyes on the wasp
which got further

& further entangled until the spider attacked again—
they were a nexus

of fury—but the web broke, the wasp rose, & either by nature's accident
or design

carried the spider off to where an egg-laying wasp & egg-laying spider
might colonize

another acre, or where one might kill the other, or both,
or neither.

Ilja Herb, *The Fallen*

Removed from their intended industrial context of forestry, these chainsaws become more than old logging tools long since replaced by newer more powerful machines. The pastel background colors bely the brute force intrinsic to industrial logging operations, and their presentation could suggest an ornithological study or an insect collection. This lens playfully encourages the viewer to reconsider the importance of these machines as found artifacts that changed the physical landscape forever. These chainsaws, and others like them, were the tools that—for better or for worse—quite literally sculpted the physical landscape that surrounds us.

Ilja Herb, *Tree Circles CMYK*, C-prints

Tree Circles CMYK is a mixed-media exploration of anamorphic perspective and resource use. The images in this project are emphatically non-virtual—each circle of colour exists in the forests—but have been designed and executed to have the appearance of having been digitally created. Details in the 40 by 50 inch prints (Traditional C-prints) reveal the trees in the forest were in fact painted. Conceptually, I am interested in how this project allows me to explore perspective and authenticity in a physical, non digital, geographical sense. I'm using paint on the trees to bring a two dimensional form into existence in the forest. It is the photographs of each painted tree scene that complete each individual work.

Above: David Lauer, *Ejido El Largo Maderal, Chihuahua*. Despite climate change, harvests seem to grow every year. Organized crime is behind uncontrolled logging in the forests of the Sierra Madre Occidental and much of Mexico.

Left: David Lauer
Cerro Prieto, Chihuahua, 2016.
In 2016, after pillaging the forest, narco-loggers set fire to Cerro Prieto.

Top: Coleman Camp, *Degracene II*, 2019, silver gelatin with mordancage; *Bottom:* Coleman Camp, *Degracene III*, 2019, silver gelatin with mordancage; *Left:* Byron Brauchli, *Development of Gated Community "The Flowers," near Las Trancas, Veracruz*, 2014, copperplate photogravure.

ON SOLASTALGIA AND TERRIBLE BEAUTY

Holly Downing

As a painter-printmaker, I'm at work on three distinct bodies of work for *Extraction: Art on the Edge of the Abyss.* The studio photos included here offer glimpses of works-in-progress.

The first series is a set of engravings, some of which will be included in an artist's book for CODEX 2021. The book will feature my hand-colored 3 inch by 3 inch mezzotint engravings of particularly beautiful examples of federally listed endangered insects—part of the "insect apocalypse." Also featured are poems by Jane Hirshfield and book design and binding by Rhiannon Alpers.

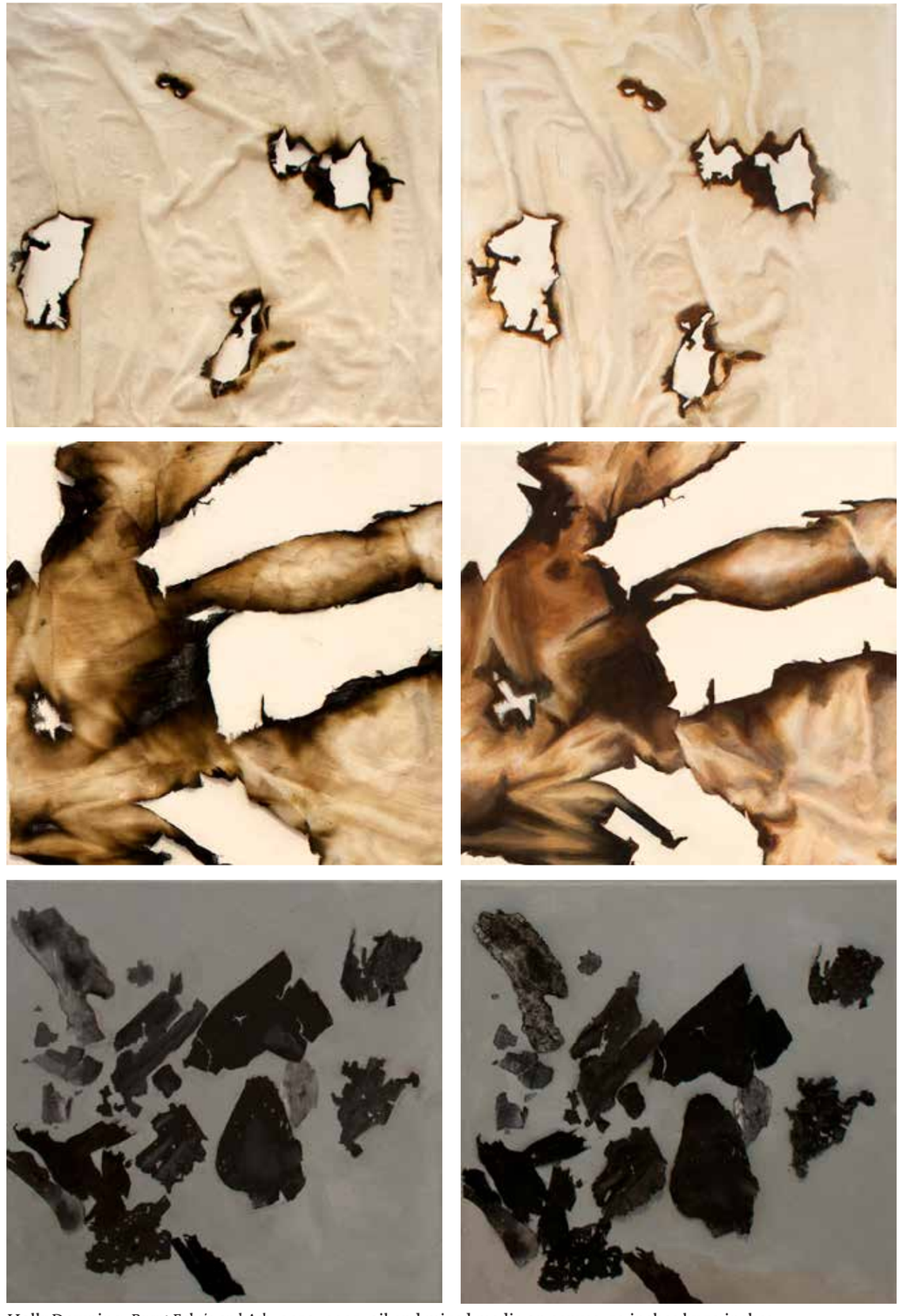
In addition, I have an ongoing series of 8 by 12 inch oil paintings documenting prominent California fires that have touched my life in some way. I think of them as belonging to the artistic genre "Terrible Beauty." I find beauty as a soothing balm in general, and also as an entry point whenever I am facing difficult realities.

And third, I've started a series of literally burned fabric or ashes (recovered in the aftermath of the Tubbs Fire). These charred materials are glued onto 12 by 12 inch canvases, and accompanied by equivalent sized trompe l'oeil paintings —facsimiles of the actual burned fabric or ash. For me these are visceral reminders of what we in Northern California have been experiencing in recent years with the warming climate.

In a crowded world with too much of everything, and particularly manufactured and plastic goods, I've intentionally made these projects small and handmade, with ties to the historic past. Their creation is an example of one individual's coping mechanism with "solastalgia"—that environmental despair so many of us are at risk of falling into.

Holly Downing and Rhiannon Alpers, *Vanishing*, 2021, artist book with 3-inch by 3-inch hand-colored mezzotint engravings

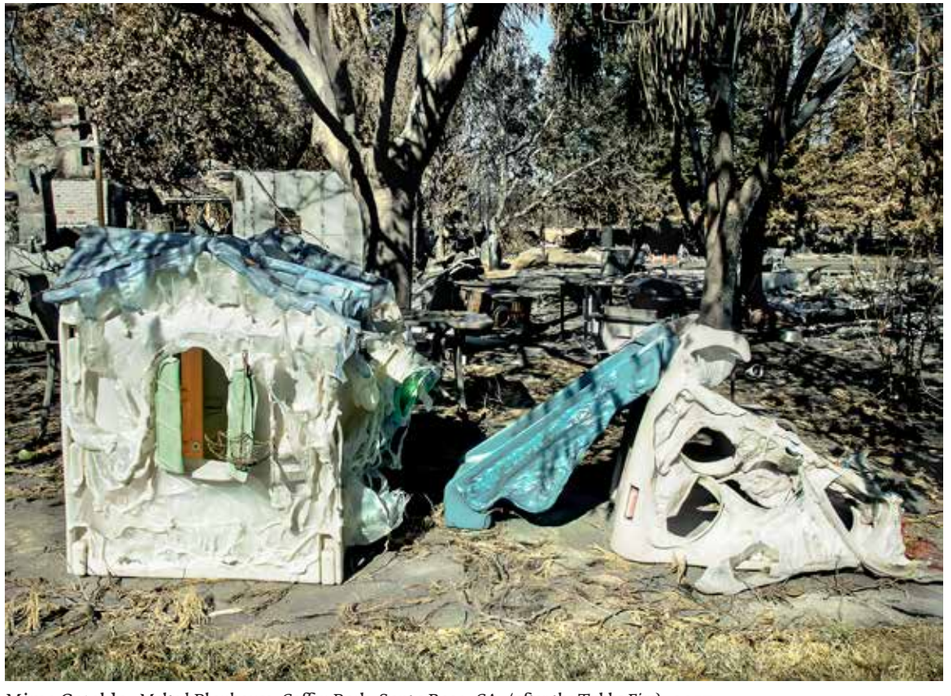
Holly Downing, *California Fire Diary Series, No. 1–5*, 2018–2021, oil on canvas, 8 inches by 12 inches. 2019's Kincade Fire scorched nearly 80,000 acres in Sonoma County, just two years after the deadly Tubbs Fire took out large swaths of Napa and Sonoma Counties. At the time the Tubbs Fire was considered the most destructive fire in California history, a record shattered only a year later by the Camp Fire in Paradise, CA, in which eighty-five people tragically lost their lives.



Holly Downing, *Burnt Fabric and Ash*, 2019–2021, oil and mixed media on canvas, 12 inches by 12 inches

Mima Cataldo, *Olea Hotel and Resort, Glen Ellen, CA, (after the Tubbs Fire)*, 2017

Mima Cataldo, *Burned-out Trailer, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire)*, 2017



Mima Cataldo, *Melted Playhouse, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire)*, 2017

Mima Cataldo, *Found Pets, Coffey Park, Santa Rosa, CA, (after the Tubbs Fire)*, 2018

Leslie Van Stavern Millar, *Illumination – Burnt Offering Series*, 2018, Gouache on rag paper, 10.5 inches by 12.5 inches

The *Burnt Offerings* Series of gouache paintings were initially inspired by a fierce forest fire which burned through the Jocko Canyon in Arlee, Montana near my home in 2013. Shortly after the fire was rained out I hiked through the burn area. I had anticipated a tragically damaged, somewhat scary, landscape. Instead, I was surprised to experience an intensely stark sculptural beauty in the scarred earth and carbonized trees. I began *Burnt Offerings* the day after my hike and have been working on the paintings off-and-on since that time, finding in them a depth of expression and possibilities for imaginative myth-making. *Tree of Life – Heavenly Visions* (2019) reflects the current direction of the series, in which I am focusing on transformation.

Leslie Van Stavern Millar, *Tree of Life – Heavenly Visions – Burnt Offering Series*, 2019, Gouache on rag paper, 30 inches by 22 inches

MY DEAR,

CB Follett

Every day I look at the news and see
your country torn open. I see you
in what's left of your house, your children
hollow-eyed around you, uncovered
against the cold. I see lines at the food stalls

that any moment may explode. I see
those few coins tied in the corner of your
kerchief and wonder when and how
you will get more. I see your eyes
hungry and suspicious. The dirt

on your arms means there is no water today.
If I knew your name, if you had an address
I would send you warm clothes. I would
send you peaches; paper and pencils
for the children. But I see only soldiers

with guns and thick boots. I see the corners
where snipers hide. I see your face and wish
I could hold you, lift you from the fallen
stones, take you where beds are covered
with clean sheets. Where the noises

in the nights are owls, not gunshots.
If I could I would build you a road
out of town, with a cart and donkey to
carry the children. You could take your
last pot and your grandmother's quilt.

If I could I would cleanse you
of the splatters of fear, give your children
books and hope. If I could, I would plant
you a garden, knit your sons sweaters,
brush your daughters' hair free of tangles.

Rain would come down again into your
barrels, candles would never burn out.
Somewhere together we would find your
husband, bring him, safe and strong, back to you.
The soldiers who shoot and rape would instead

rebuild your walls. We'd make a roof again.
I would learn your songs and we
would sing. The children would sing.
The rivers would run clean and horses
would again come down to drink.

"THERE ARE OVER 1000 URANIUM MINES AND MILLS ON THE NAVAJO NATION… BEFORE 1962, NATIVE AMERICAN MINERS WORKED IN THE MINES WITHOUT ANY PROTECTIVE EQUIPMENT AND LIVED IN HOUSES CONSTRUCTED FROM CONTAMINATED MATERIAL."

—MANUELA WELL-OFF-MAN

Above: Will Wilson, *Mexican Hat Disposal Cell with Monument Valley on the horizon*; *Previous page:* Will Wilson, *"Rare Metals" Tuba City Uranium Disposal Cell*, Tuba City, AZ

CONNECTING THE DOTS

POST-URANIUM EXTRACTION ON DINÉ LAND

Will Wilson

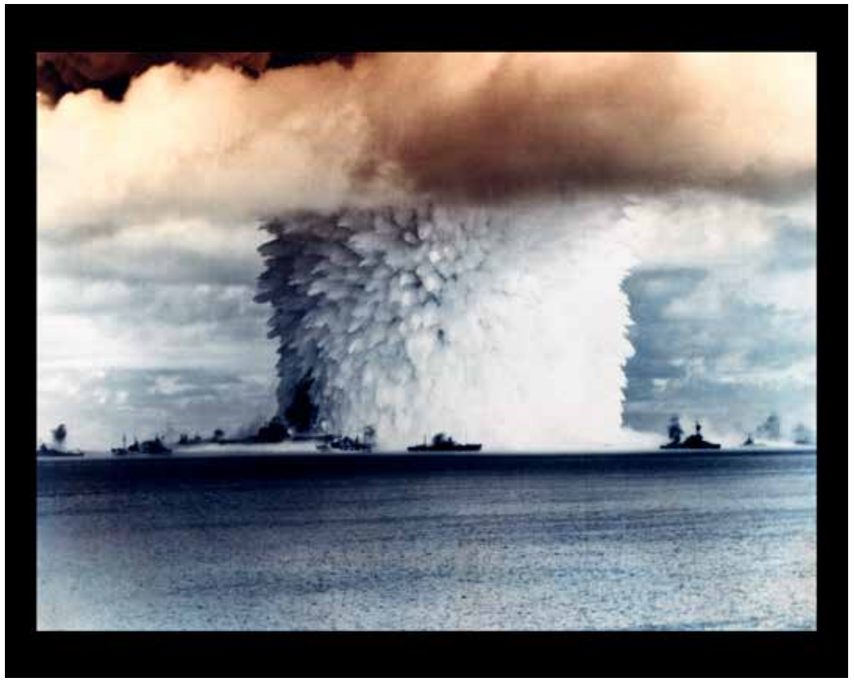
WWW.WILLWILSON.PHOTOSHELTER.COM

This project raises awareness about a critical opportunity for a just transition for the Navajo Nation. *Connecting the Dots* addresses remediation following uranium extraction that has poisoned the land and impoverished a people. I am creating an unconventional photographic survey using drone-based, aerial and app-activated photography to help Diné people re-story our narrative. My project presents a portrait of environmental and social injustice, but more importantly, shapes a platform for voices of resilience, wisdom, and vision for a transition to restorative systems of economy and memory making during the Summer of 2021.

Will Wilson, *United Nuclear Corporation's Churchrock Uranium Mill Spill, Evaporation Ponds*. The July 16, 1979, accident remains the largest release of radioactive material in U.S. history, having released more radioactivity than the Three Mile Island accident four months earlier.

Travis Wilkerson (Creative Agitation), *Our Past is Your Future*, 70 inches by 94 inches

Michael Light, *100 SUNS: 059 BAKER/21 kilotons/Bikini Atoll/1946*, 2003, 20x24 pigment print, ed. 5.
Images courtesy Euqinom Gallery, San Francisco



Michael Light, *100 SUNS: 057 BAKER/21 kilotons/Bikini Atoll/1946*, 2003, 16x20, pigment print, ed. 5

Michael Light, *Crater From 1952 MIKE Device, Elugelab Island, Enewetak Atoll*, from BIKINI ATOLL *06.02.03*, 2006

BIKINI ATOLL 06.02.03

Michael Light

WWW.MICHAELLIGHT.NET

Due to sustained atmospheric American nuclear testing from 1946–1958, Bikini Atoll is so radioactive as to be uninhabitable today. The 1954 fifteen-megaton hydrogen bomb detonation BRAVO, 2.5 times as powerful as predicted, succumbed to fickle winds that blew the radiation debris cloud back over the Atoll and the surrounding area, creating the worst radiological disaster in the Nation's history. America's largest nuclear test, BRAVO's power equaled 1,000 1945 Hiroshima bombs.

Hand-made book of fifteen aerial and surface images shot by the photographer in 2003. Printed on Epson Enhanced Matte paper using archival Epson Ultrachrome 3 pigment inks, adhered with archival Gudy 831 double-sided pressure adhesive. Archival stability well exceeds c-print standards. Custom box by John DeMerritt Bookbinding, Emeryville, CA. Edition of ten, signed on rear cover.

Michael Light, *Crater From 1952 MIKE Device, Elugelab Island, Enewetak Atoll*, from BIKINI ATOLL *06.02.03*, 2006

Michael Light, *Bikini Island, Radioactively Uninhabitable Since 1954, Bikini Atoll*, from BIKINI ATOLL *06.02.03*, 2006

HANFORD REACH

Glenna Cole Allee

WWW.GLENNACOLEALLEE.NET

Hanford Reach is an art installation combining photography, sound, and video projection to "map" the Hanford Area: the Manhattan Project site in Washington State where plutonium was created for the Fat Man bomb dropped upon the city of Nagasaki in 1945, and where plutonium production continued for decades thereafter.

The vast zone of Hanford encompasses nine nuclear reactors, one still operating; a 20,000 year no-go zone; twelve thousand-year-old native sacred sites; a pioneer ferry crossing point, and evacuated townships and orchards. Part of this terrain was recently re-imagined as a National Monument and "wildlife reserve; " the Hanford Reach installation is named after this reserve.

The core of the installation is a surround-sound piece: a sonic collage. This piece was created from fragments of conversations recorded with residents of the areas surrounding Hanford, and those involved in and affected by the construction and operation of the site: elders of the local Wanapum tribe; displaced farmers and farm worker advocates; nuclear engineers and radiation specialists; and "Downwinders:" those harmed by radiation within the long geographic "shadow" of Hanford.

The installation also carries the narration of a Hiroshima survivor of the Little Boy bomb blast, know as an "Hibakusha." This interview is available to be listened to distinctly on a headset. The intention is to link Hanford site with the experience of those affected by the U.S. bombings in Japan, and to bridge these conversations across space/culture as an active demonstration that nothing can be permanently "contained."

The sound collage is framed and anchored by mural-scale photographs that represent perspectival views of Hanford site and surrounding regions. The full installation also includes a floor-projected video that cycles through maps of the site, of the "plutonium' railroads spanning the site, and of the subterranean chemical plumes leaching towards the Columbia River.

The *Hanford Necklace/Atomic Necklace*, a chain of semi-transparent photographs of the distinctive scars worn by cancer survivors affected within the expansive geographic "shadow" of Hanford, hangs in a suspended spotlit ring. This work connects survivors in a visual constellation, each scar-photograph, a personal testimony of injury, of survival,

Glenna Cole Allee, *Photographs from the installation Hanford Reach*

and of healing. The "Necklace" will continue to link and to lengthen, and perhaps becoming a global "Atomic Necklace" linking survivors from radioactive zones across geographic distances.

Hanford Reach creates a space in which fragmented narratives weave together and collide: a space offered to counteract historic legacies of silence and secrecy, to explore themes of denial, the contested nature of truth, and the manner in which personal life histories are embedded within large dynamics of state power.

This project will continue to evolve and the accompanying sound archives/interview files to grow. Parts of the installation show independently; choice/arrangement of work is site-specific.

Glenna Cole Allee with invited artists:
Jon Leidecker/Wobbly: sound design
Michael Paulus: videography
Thanks to Puffin Foundation and Puffin West for funding support of this project in 2016, 2017, and 2018.

Glenna Cole Allee, *Image from the "Atomic Necklace"*

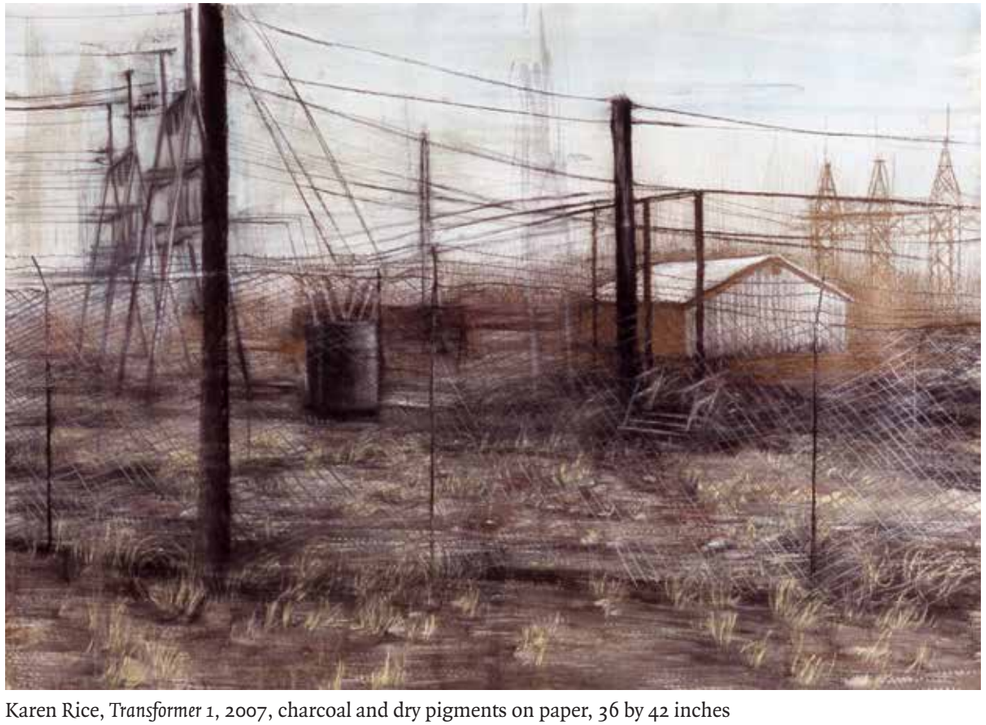
HIROSHIMA DAY ON THE KIM WILLIAMS TRAIL

David E. Thomas

"I always take this day off"
Dunsmore told me
a few years back
we were painting
his house
on Addison Street and a day
off
sounded good whatever
the reason
he said he followed John
Lawry
in this tradition, a philosophy
professor, Lawry had been
a sailor
in the navy
on a ship off Okinawa
when the bomb
was dropped
and he felt something deeply
wrong had occurred
many people did
but the excuse
that it shortened the war
and saved lives
stood
not that it mattered
to those
incinerated
in a flash
to shadows etched
on the rubble
that remained
in those grotesque after action
photos
the investigators took
today the river
carries floaters perhaps
ignorant of the entire
war
or at least indifferent
or maybe they too
celebrate
and resist by simply
enjoying
an afternoon
in the sun
that for a brief moment
was replicated
in a blast of destruction
from which
there has been
no return.

(in memory of John Lawry)

6 August, 2014
Missoula



Karen Rice, *Transformer 1*, 2007, charcoal and dry pigments on paper, 36 by 42 inches

Karen Rice, *Transformer 2*, 2007, charcoal and dry pigments on paper, 36 by 42 inches

Tony Bellaver, *Resource Extraction No. 2*, 2019, Olympic Peninsula, WA, 17 by 17 inches

Tony Bellaver, *Resource Extraction No. 1*, 2019, Olympic Peninsula, WA, 17 by 17 inches

ZONE ONE CHERNOBYL

CB Follett

A cloud of radiation passed over our house,
blew south, then the next day north,
then south again.
I did not see it, although I was outside
breathing in gulps of new April air.

Now our fields are bankrupt.
No one wants to eat the suspect beets.
No one walks in the forests.
Our children may never play there again.
The only birds they see are plastic.
The trees have drunk radiation, pith deep.
And stand forbidding like a wall of cactus.

We hide from rain and those of us who can
send our children away.
We haunt the markets for food from other places,
but little comes.
In the end we must eat local wheat.
But not milk or meat. So far, we don't eat them.

I have no appetite now. My bones and muscles
are losing their will. They tell me
my organs are rebelling.
My daughter lives with my brother in Moscow,
my sons far away with their grandparents.

I try not to complain or blame.
What good would that do? But sometimes,
I cannot get medication. The needles are old
and blunt. Contamination is a realized fear.
And, over and over,
why didn't they tell us?

I feel sadness that we can no longer
pick the mushrooms, or berries from the bush.
I suppose in time, we must, we will.

Vladimir Zimakov, *Chernobyl Aftermath 1*, 2015, charcoal on paper

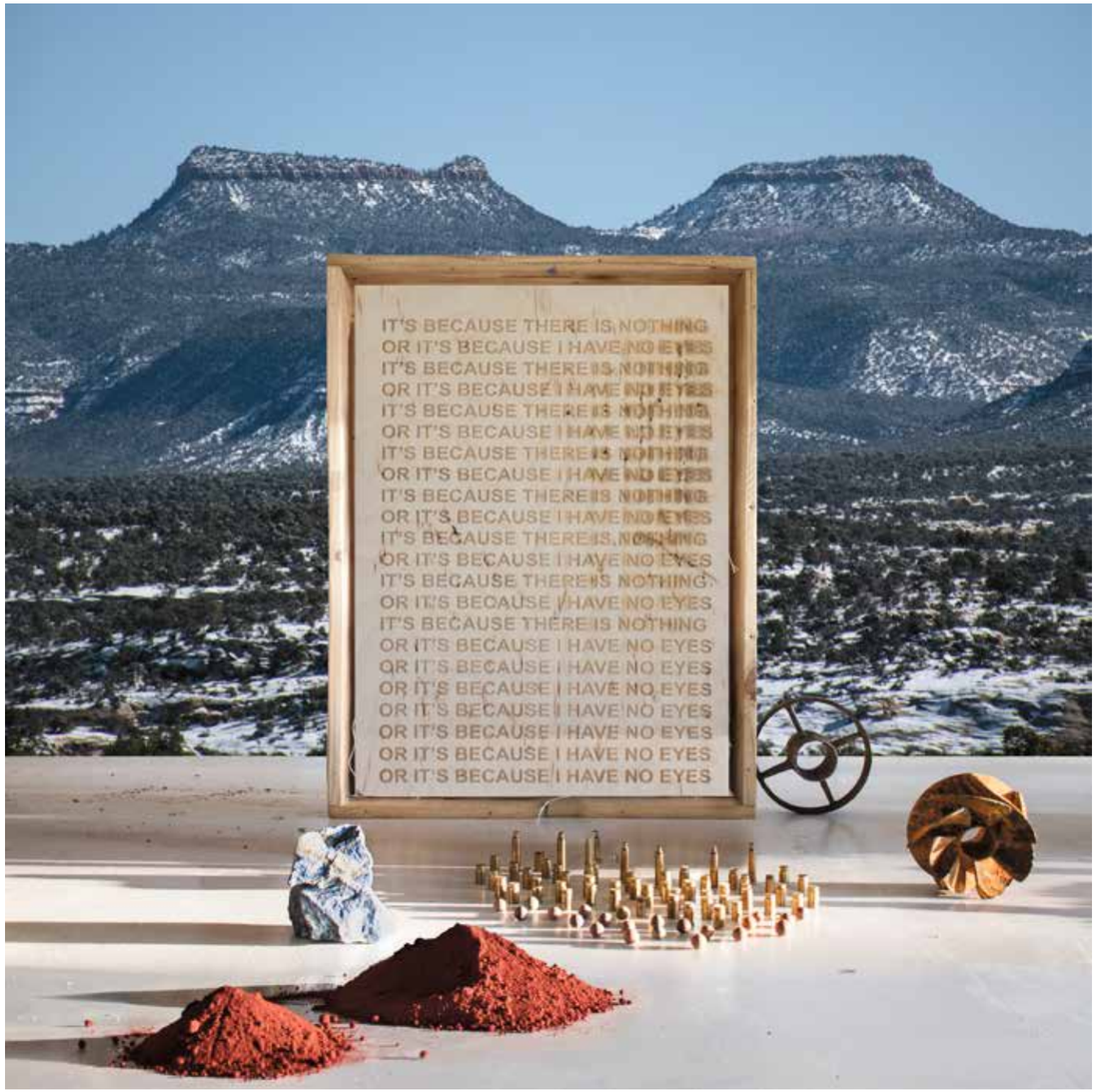
Vicky Sambunaris, *Untitled (Uranium tailings clean up)*, Moab, Utah, 2016, C-print

Vicky Sambunaris, *Untitled (Pump Jack)*, Kenilworth, Utah, 2018, C-print

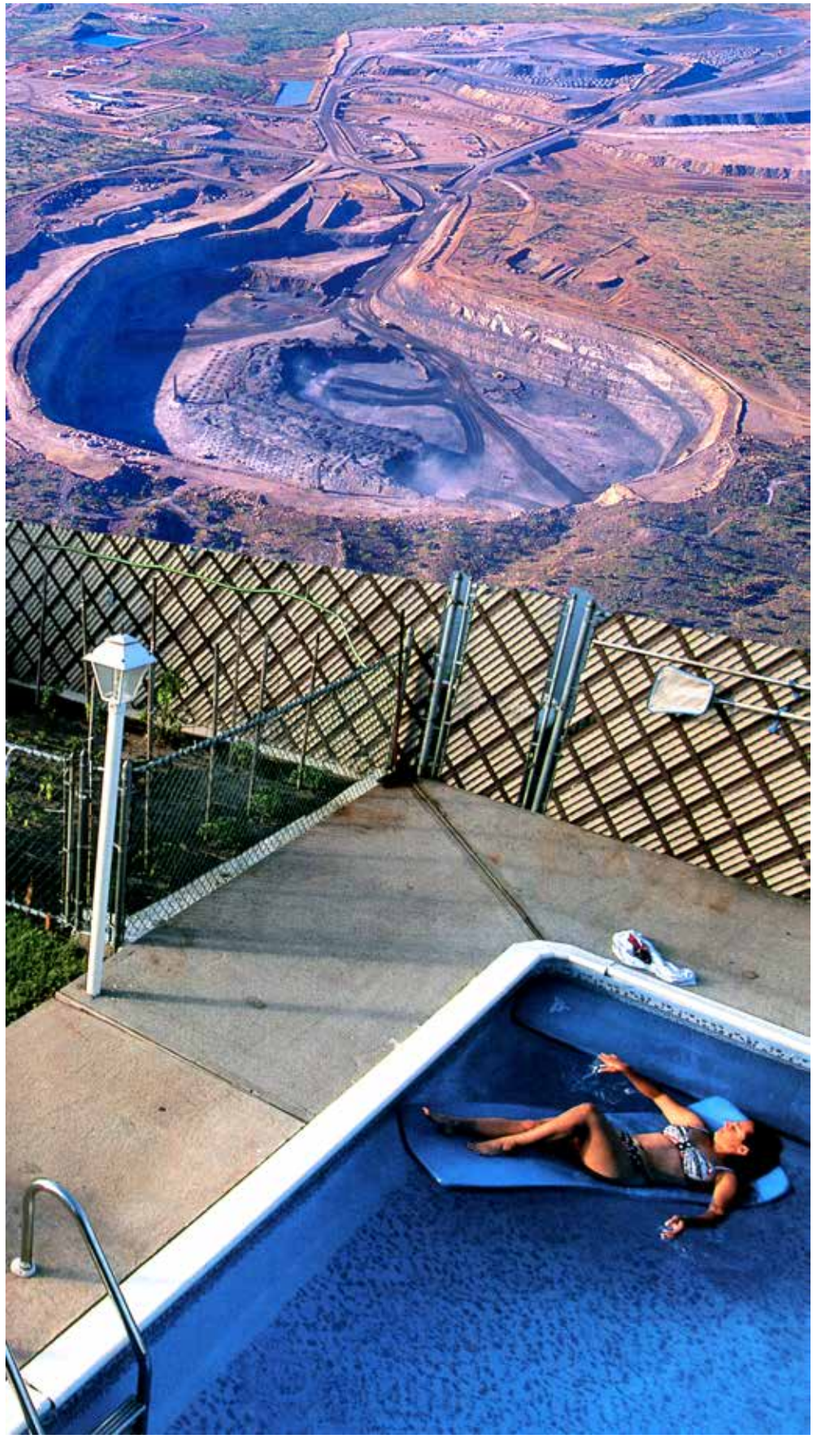
Eve Andrée Laramée, *Mount Taylor Uranium Mine, New Mexico*, 2007, photograph

Eve Andrée Laramée, *Uravan Uranium Mining Site, Colorado*, 2010, photograph

Mary Mattingly, *A Silence Contained for Years*, 2018, digital C-print



Mary Mattingly, *Between Bears Ears and Daneros Mine*, 2018, digital C-print



Peter Lyssiotis, *Untitled*, 2019, photomontage

Peter Lyssiotis, *Untitled*, 2019, photomontage

Peter Lyssiotis, *Untitled*, 2019, photomontage

RAPSON GROUP (GEOLOGY TEXT PANELS)

John Roloff

Rapson Group (Geology Text Panels), is a work based upon my original research as the public artist selected for the new Stephen Holl addition to Rapson Hall at the University of Minnesota, Minneapolis, MN in 2001. *Rapson Group (Geology Text Panels)* is located in the West Garden of Rapson Hall and shares the site with *Site Index*, a companion landscape project done in collaboration with Rebecca Krinke, Associate Professor of Landscape Architecture at UMN, also for the new Holl addition.

Rapson Group (Geology Text Panels), completed in 2013, is conceived as an allegorical vision of Rapson Hall as a Holocene/Anthropocene geologic "formation" whose geomorphology is that of the Rapson Hall architecture. In this sense Rapson Hall is seen as a geologic structure or "landscape" constructed of a series of other, earlier, geologic landscapes each with their own embedded materiality, history and unique environment/context on or below the earth. Beyond the natural processes that formed the raw materials of *Rapson Group*, the applied materials were eroded, processed and "deposited" by human activity, a process which may be termed "anthroturbation[1]."

The *Rapson Group (Geology Text Panels)* concept was developed by research and analysis of a range of information about the industrial, geologic and paleogeographic history of the four primary materials used in the construction of the full Rapson Hall structure: brick, concrete, glass and copper. The wording in geologic language for each text panel, of appropriate geophysical and geochemical information, as well as paleo-geographic context and origin for each material was created with the help of Carrie Jennings of the Minnesota Geologic Survey. The original planned sites for the panels were developed and approved in 2004 as a holistic installation relating to the new form of Rapson Hall and the full implementation of *Site Index* in all four gardens around the Holl annex. The final installation of three of the panels: concrete, copper, and glass, were re-located in 2013 to the West Garden, the only completed garden of *Site Index*. The brick text panel, designed for placement on the original brick-clad Rapson Hall structure, facing the Rapson Hall East Garden, was not installed as originally planned. The term "Rapson Group," was suggested by Carrie Jennings as the proper geologic category and name for a formation of this type.

The text for each *Rapson Group* geology panel was distilled from research into each material's source, mineralogy, tectonic and metamorphic history, paleogeography, paleo-depositional environment, Holocene/Anthropocene, transformation, transport and depositional/installation characteristics. Numerous papers from appropriate geologic and industrial literature were consulted as well as personal communication with geologists, contractors and manufactures of the *Rapson Group* materials. In this document, under "References/Bibliography" for each material, are listed the primary geologic references used in the research as well as additional materials for further reading. Copies of the reference and some ancillary documents are included in a separate container as part of a boxed set of documents for this project at the Architecture Library at UMN and selected other educational institutions. Geologic laboratory analysis was performed on samples of each material by Katherine Waring and associates at the UC Davis Geology Department (thin sections) and Mineral Labs, Inc., Lakewood, CO. All the samples were subjected to Scanning Electron Microsopy (SEM) and Energy-Dispersive X-ray Spectroscopy (EDS) analysis, the brick and concrete also underwent X-ray Diffraction (XRD) analysis and the glass was also analyzed using X-ray Fluorescence (XRF) technology.

1. *A term developed in conversation with Paul Spudich, geophysicist at USGS, Menlo Park, CA, circa 1998.*

Rapson Group (Geology Text Panels), West Garden, Rapson Hall, College of Design, University of Minnesota, Minneapolis, MN, John Roloff, 2013. Text etched in-situ, highlighted with paint, lacquer, concrete, copper, glass, size variable.

Ashby Carlisle, *Memorial*, 2019, dyed and printed paper, clay, metal and seed pods. *Memorial* was made in response to the flood of articles appearing in June, 2019 that reported 571 extinct plant species in the last 250 years.

"AMERICA'S FROGS AND TOADS DISAPPEARING FAST"

Dean Rader

Old globe, bucket
of algae and ash,
tar pit of blood

and bile, red rock,
white bone, bowl of
fire, floating bed

of blue death, little
pebble, dot of
darkness and glory,

you've pressed us
into everything we
are, ignited every

single thing we say.
We are lit up by
you and you

alone, even now,
as we try to end
things between us,

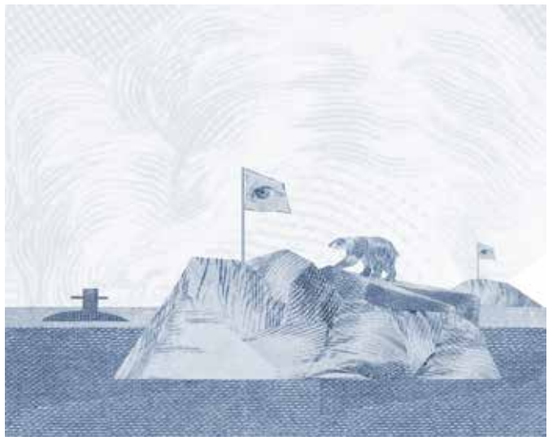
we recall
that it has all
arrived from

somewhere,
what is
is what was,

like the blistered
light of a burst
star, long ago

imploded,
only now flashing in
our silent sky.

Reuters, May 22, 2013



American Banknote Collage: Bee, 2019, Anneli Skaar, Cyanotype from banknote collage
American Banknote Collage: Fires, 2019, Anneli Skaar, Cyanotype from banknote collage
American Banknote Collage: Polar Bear, 2019, Anneli Skaar, Cyanotype from banknote collage
American Banknote Collage: Whales, 2019, Anneli Skaar, Cyanotype from banknote collage

Claire Illouz, *VESTIGES III*, 2019, etching

SUB SPECIE AETERNITATIS

Dean Rader

Nothing can have as its destination anything other than its origin.
—Simone Weil

For a long time

the clouds have along the edges of things

been gathering—

the earth of course is done with symbolism

and yet still there is always a system—

if not colluding then coalescing:

we are after all always under—

the earth seems out of itself to be rising

but nothing falls from above but water—

and yet it too rises,

like, the author wrote,

the sun—

metaphor for the self

as well as that which it flames in to:

the darkness:

outside my window now

and I can see the ocean

bringing it down into what it once was—

gravity of all undoing—

molecule, atom:

what isn't burning?

Even the moon,

lit by low tide

and the fire of its path,

ashblack and shadowslit,

smolders in its black bowl.

Some say a storm cometh—

a storm some say,

a storm—

yes, well,

Everything begins in the sky—

Nicol Ragland, *Between Two Worlds No. 2*, 2012, photograph

BETWEEN TWO WORLDS

Nicol Ragland

WWW.NICOLRAGLAND.COM

According to the World Wildlife Fund, the population of wild vertebrates decreased by 58 percent between 1970 and 2012. If the present rate of decline continues, wild vertebrates could disappear entirely by as early as 2026. This is known as “year zero”—the year when all wild animals are gone.

Between Two Worlds is a fine art series that addresses the accelerating destruction of wildlife as a consequence of industrialized society. Time spent in East Africa, India and Southeast Asia allowed me to reflect on the disconnect created by first world social structures and industry, leading to the realization that the current storm of destructive activity can equally create the conditions for change. Institutions are beginning to adopt new ideas, move in new directions, and evolve. By reflecting on the truest aspects of our existence, we can enter into an age of grace with a renewed focus on regenerating the wild.

Nicol Ragland, *Between Two Worlds No. 4* 2012, photograph

Nicol Ragland, *Between Two Worlds No. 8* 2012, photograph

Above, left to right: Diane Jacobs, *Northern Face of Mount Hood*, wood engraving; Diane Jacobs, *Eastern Face of Mount Hood*, lithograph; Diane Jacobs, *Mount Hood*, etching; *Facing page, clockwise from top left:* Diane Jacobs, Sumi ink drawings from *Owed to the Mountain: Red-tailed Hawk, Western Garter Snake, Coyote, and Lynx.*

OWED TO THE MOUNTAIN

Diane Jacobs

> *"Stories are both history and prophecy—time is circular—stories are among our most potent tools for restoring the land and our relationship to it."*
>
> —Robin Kimmerer

Owed to the Mountain is a sculptural artist book where a cloth covered box unfolds to reveal a paper replica of Mt. Hood. Each directional mountain view is illustrated in a different printmaking technique, while storytelling by elders from the Confederated Tribes at Warm Springs deepens and contextualizes the relationship. Three paper replicas of the mountain, each nestled inside the next, represent the snow, watershed, and volcanic layers. Beneath the mountain rests a booklet that weaves multiple voices to convey the complexity of this special place.

The seed for this project was planted in 2013 after spending a week in the Mt. Hood National Forest backpacking with artists and Signal Fire guides (Signal Fire is an organization that engages artists in our remaining wild places).

This project has been developing slowly to honor Indigenous sovereignty, acknowledge the importance of public land, and raise awareness of forest mismanagement by Mt. Hood National Forest. The climate crisis is forcing communities to make connections between all of our struggles and weave them into a coherent narrative for collective action to protect life on earth.

Intended outcomes are to cultivate knowing a place deeply; share indigenous wisdom; build community and turn our love for the mountain into action by demanding a new management plan from the Mt. Hood Forest Service that prioritizes climate resilience and puts an end to industrial timber production.

As Naomi Klein, one of the great theorists on climate change writes, "When local knowledge is passed on with a sense of sacred duty from one generation to the next we understand our relationship to the land." She also writes, "We lack observational tools necessary to convince ourselves that climate change is indeed an emergency—let alone the confidence to believe that a different way of living is possible."

This artist book will be a catalyst to share understanding and knowledge that respects all life and the intricate balance. Elders and culture keepers will create alternative worldviews that value interdependence, reciprocity, and cooperation.

LIFE ON EARTH

OUR CHILDREN'S STORY

Sam Winston and Oliver Jeffers

As we go about living amid a potent mix of information overload and compassion fatigue, we collectively—for reasons of self-preservation—shrink back into the busy-ness of our daily lives, ignoring the larger picture. But what could be more essential to self-preservation than having a home, a place, a planet, to live on? We need to find new ways of letting the harshness of our current reality—and our ignorance to it—take root in our hearts. While our children need powerful stories that help them learn to grasp complex ideas, we need to be learning along with them. And we need to stop conveniently forgetting some of the simple facts we expect our children to retain.

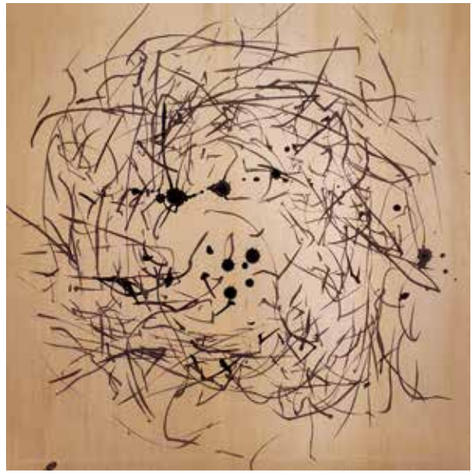
Our culture has often relied on symbols from the natural world for our spiritual and psychological wellbeing. Our devotion to nature—in its symbolic form—is devout and pervasive. But, while we borrow so heavily from this world, we fail to return the favor in honouring its right to exist.

Left: Sam Winston and Oliver Jeffers, *Life on Earth*, 2019

KW Schmidt, *I Can't Go On. I'll Go On*, 2016, acrylic on canvas

KW Schmidt, *A Sharp Intake of Breath*, 2014, acrylic on canvas

KW Schmidt, *Aftercomers Cannot Guess the Beauty Been*, 2016, acrylic on canvas



Above: Morgan Syring, *Support ink on surface, 3 minute stay; support ink on wood, 6 minute stay; support oak ink on wood, 9 minute stay; support tree on tree (from Paper Supports series)*, 2019, Handmade oak gall ink on wood panel

Center: Morgan Syring, *Where will you run to?*, 2019, Handmade indigo ink on yupo

Right: Morgan Syring, *What do you see on your horizon?*, 2019, Handmade indigo ink on yupo

SURVIVAL

John Grey

He salivated over beef sides
in butcher's windows
but lived on the likes of found cans of tuna fish
He was just an old man
begging for mouthfuls,
struggling to button a forlorn coat
as he blew across the sidewalk.

He was jealous of the woman
who could waste her money on candles
even as she grumbled her way down the street,
complaining of rheumatism.
She'd no doubt bought soap.
It'd been months since he'd felt
the touch of anything cleansing on his skin.
He vowed, if an angel ever dropped in
for a visit, he'd promise him anything
in exchange for a hot shower
and a change of underwear.

In spring, he almost drowned in a flash flood.
In summer, the life near sweated out of him.
Somehow, he survived
despite the nuns who tried to save his soul
and the cop who moved him along.
He even got mugged once.
He took it as a compliment.
As if someone thought he had anything worth stealing.

He saw himself in a mirror from time to time
and shuddered.
A dim alley was his bedroom.
A nephew went looking for him once
but had no luck.
His mother haunted him.
He could feel his father looking over his shoulder.
Any coin discovered on the ground
soon felt the clutch of his fingers.
The first flakes of snow
were like the guard and padre
showing up in a condemned man's cell.
The warm had this habit
of going out of this world.
He had this dream where he went with it.

THE CORFU GLOWWORMS

John Grey

Twilight passes.
Light's sucked out of the air
but not breath.
Glowworms dart here and there
blink on and off
like signals out at sea.

The black is fine, silky,
the wind slow to materialize,
a little drugged
after a day fluttering
the surface of the Mediterranean.

The glowworms
are attracted to the olive trees,
so up and down the hills,
the crop is lit by
a flash of calyx and corolla.

I sit on the stone step of the villa,
the synchronicity of light
acting on my head like wine.

Sometimes, a magical place
needs to reestablish its credentials.
Corfu does it with sunset crushed-strawberry pink,
the brilliant colors
from the riotous wildflowers
to the bright primary hues of the shutters.

And, in between
when the fishing ends
and the dancing starts,
the glowworms
don't let a moment go wasted.

They chime like bells
of brilliance.
My eyes smile wide
to match their timbre.

The Natural History Museum, photo courtesy of Not An Alternative

NOT AN ALTERNATIVE
THE NATURAL HISTORY MUSEUM
WWW.NOTANALTERNATIVE.ORG

Not An Alternative (est. 2004) is a collective that works at the intersection of art, activism, and critical theory. The group has a mission to affect popular understandings of histories, symbols, and institutions. Not An Alternative's work has been exhibited in museums around the world, including Guggenheim, PS1/MOMA, Smithsonian National Museum of the American Indian, Queens Museum, Brooklyn Museum, Tate Modern, Victoria & Albert Museum, and Museo del Arte Moderno, and was cited in The New York Times and ArtNet's "Best in Art in 2015" round-ups.

Not An Alternative's latest, ongoing project is *The Natural History Museum (NHM, 2014—)*, a pop-up museum that highlights the socio-political forces that shape nature, yet are excluded from traditional natural history museums. As a "Trojan horse" strategy, NHM aims not only to *critique* the museum sector as it exists but also to *transform* it into a vital infrastructure for environmental struggle. NHM operates in a range of venues, including art museums, its mobile museum bus, major conventions for museum professionals, and within traditional natural history museums. NHM collaborates with artists, community groups, scientists, and museum professionals to create new narratives about our shared history and future, with the goal of educating the public, measurably influencing public opinion, and inspiring collective action.

The Natural History Museum, photo courtesy of Not An Alternative

The Natural History Museum, photo courtesy of Not An Alternative

The Natural History Museum, photo courtesy of Not An Alternative

The Natural History Museum, photo courtesy of Not An Alternative

AFTERWORD

PREVIEW TO A GLORIOUS RUCKUS

Michael Traynor

At this critical time of climate disruption and unsustainable extraction of natural resources, Peter Koch [1], a printer, publisher and fine artist, has conceived of *Extraction: Art on the Edge of the Abyss* (www.extractionart.org) [2]. He, and the late Edwin Dobb [3], a writer and teacher of environmental stories, and a growing group of allies, launched this inspiring project in 2018. They created "a multi-layered, cross-institutional, trans-border multimedia ruckus [4] over the single most urgent planetary concern of our time—the social, cultural, and environmental costs of unbridled globalized extractive industry, including the negative effects of climate change; the deterioration of land, water, and air; the devastation and displacement of poor, minority, and indigenous communities; and much else."

Leaders of the Extraction Art project and natives of Montana, Peter came from Missoula and Edwin from Butte. While living in California, they maintained strong Montana ties, as Peter still does. They set the stage for a constellation of events in 2021 and enlisted confirmed participants from numerous and diverse museums and galleries, curators, artists, photographers, writers, libraries and rare book departments, organizations and publishers, and a team of advisers. I learned of the project from Malcolm Margolin [5], author of the classic, *The Ohlone Way*, leader of the California Institute for Community, Art and Nature [6], and founder and president for forty years of Heyday, a nonprofit publisher on whose board I served.

The project has published *WORDS on the Edge* [7], a portfolio of poems and lyrical texts addressing themes of nature and its irresponsible destruction, as well as this major compilation—the "Megazine"—and will continue to publish periodic newsletters, documents/manifestos/images heralding a series of artistic, musical, and dramatic events and exhibitions. It is also completing arrangements for those events. Jane Hirshfield [8], poet, author, and confirmed participant, is preparing a forthcoming poetry reading at the San Francisco public library.

It is human nature and a necessity to consume resources to survive. It is a human frailty and not a necessity to do so unsustainably. The extraction problem is not confined to mining fossil fuels or minerals from land and the deep sea. As is clear from the work collected in this volume, unsustainable extraction occurs in many forms, for example, clear-cutting forests; overfishing oceans, rivers, and lakes; and over-drafting groundwater from aquifers. Unsustainable extraction in any form is attended by greed, lawlessness, treatment of the earth and its marvelously varied inhabitants as an externality, and a disregard for present and future generations.

In Butte, unsustainable extraction created the mammoth open pit known as the Berkeley Pit, a mile wide, mile-and-a-half long, and third of a mile deep abyss where thousands of snow geese have perished after landing on its toxic lake. It is a hellish legacy of the Anaconda copper mine. Ed Dobb told its story in his article, *Pennies from Hell*.

That toxic abyss also symbolizes the deep hole that we and the fellow inhabitants of our planet will all be in if we don't act now, with the crucial help of the arts. Instead of plunging into the abyss, the arts can help us step away from the edge and begin moving in a different direction.

In her book, *Undermining: A Wild Ride Through Land Use, Politics, And Art in the Changing West*, Lucy Lippard [9], author, curator, and confirmed project participant, writes: "Of course art cannot change the world alone, but it is a working ally to those challenging power with unconventional solutions." In their article, *Arts, Sciences and Climate Change: Practices and Politics at the Threshold*, scholars Jennifer Gabrys and Kathryn Yusoff [10], write that "Between sciences and arts, there are correspondences and passages to be detected, which may even come about through a shared attention to issues and events—like the breaking up of the actual Northwest Passage. Previously impassable or difficult terrain opens up—not to reveal a space of simple agreement, but instead to suggest new spaces of exploration, imagination and concern. Climate change reveals such a passage, a space of environmental shifts and cultural complexity, of scientific study and political conflict." In addition to the focus of the Extraction Project, varied recent exhibitions, programs, and commentaries demonstrate that art can help save the planet [11].

Combining their talents, vision, and aesthetic and ethical senses, artists can imaginatively and resolutely explore new spaces and forge alliances—when fitting and feasible—with scientists, lawyers, and other individuals and organizations concerned about our planet. Together, they can cross "the line where the pressure of duty leaves off and the challenge of excellence begins," in the words of legal philosopher Lon Fuller [12].

Nine years ago, in *Note to the Next Generation*, I said, "Apocalyptic words were not effective to cause people preoccupied with various stresses to pay attention to climate change and may have even fostered alienation, denial, and hostility." As Elke Weber [13] has recently written: "1) climate change does not elicit sufficient fear or dread; 2) motivating climate action through fear or guilt is a bad idea even though it might sound like an effective approach; and 3) we need to help people recognize their personal experience of the concrete impacts of climate change on their lives, though this is easier said than done and may not work for everyone." Incremental progress is hard enough to achieve on any front and is inadequate to meet the challenge of climate disruption. Despite advances on some fronts, for example, in California and with the Paris Agreement, there have been retrograde and hostile maneuvers on others, for example, the current administration's renewed emphasis on unsustainable extraction, attack on protection of endangered species, disregard of environmental laws, withdrawal of the U.S. from the aforementioned Paris Agreement [14], rejection of science, denial of climate change, and appeal to base and negative partisanship [15]. There is plenty of cause to sound the alarm. We also need to find and use improved ways of communication that will move people to act positively.

The Extraction Project holds the promise of fostering breakthrough changes in public opinion and public policy, including wider recognition of an enforceable human right to a healthful environment [16]. It is a singular component of a multi-pronged strategy of action that involves various disciplines. It augments significantly the historic and contemporary contributions of the arts to the environment and to meeting the challenges of climate change.

WHY ARE THE ARTS NEEDED?

Professional disciplines such as science, engineering, law, economics, public policy, and journalism are necessary but not sufficient to counter unsustainable extraction, environmental injustice, greed, and ignorance. They are not adequate alone to overcome the harm caused by "merchants of doubt," "truth decay," and insidious advertising [17]. "The failure of widely accessible, compelling science to quiet persistent cultural controversy over the basic facts of climate change is the most spectacular science communication failure of our day," as Dan Kahan, founder of the Yale Cultural Cognition Project, has critically observed [18].

Science and the arts are closely related and can inspire each other. Indeed, the term "scientist" is a hybrid of "artist" and the Latin "scientia." Both disciplines require creativity, imagination, perseverance, and passion. Leonardo da Vinci was an artist and inventor [19]. John James Audubon was a naturalist and artist [20]. Samuel F. B. Morse was an inventor and painter [21]. Alan Bean was an astronaut and painter [22]. Hedy Lamarr was an actress

and inventor [23]. Alexander Fleming's artistic eye and painting of bacteria, along with serendipity and genius, helped him discover penicillin, benefit humanity, and earn the Nobel Prize [24]. Rosalind Franklin's and Raymond Gosling's famous *Photo 51* led to the discovery of the DNA double helix [25]. Hope Jahren's "Lab Girl," reflects what Vladimir Nabokov described as essential for a writer: "the precision of a poet and the inspiration of a scientist [26]." George Seurat's paintings were influenced by the science of color [27]. David Hockney's views of art history are influenced by physics [28]. Santiago Ramón y Cajal, a Nobel Prize winner and the reputed "father of modern neuroscience," also produced more than twenty-nine hundred drawings that reveal the nervous system, many of which are reproduced in the recent book, *The Beautiful Brain* [29].

Evolving neuroscience is revealing the power of art to induce changes in human behavior, facilitate discovery, and inspire invention [30]. Stories and other forms of art have the power to inspire empathy, motivate action, and release the brain's oxytocin (OXY), a neuropeptide that stimulates emotions and may induce altruism [31]. One recent experiment concludes that "a more accurate understanding of altruism and its underlying regulatory mechanisms, including OXY [...]" may "motivate more individuals and groups to sacrifice money for ecological sustainability, which may help improve climate change prevention and the preservation of biodiversity." Perhaps altruism and a consequent sense of fairness and justice for our environment may also foster a sense of fairness and justice for each other.

While recognizing the positive potential of emotions and the arts and the insights of neuroscience, we must also recognize their negative potential for manipulation and misuse such as the propaganda reflected in Nazi, Soviet, and Maoist posters, films, and music. This danger is even more ominous in the digital age than it was in the "Age of Mechanical Reproduction" when Walter Benjamin warned that "The logical result of Fascism is the introduction of aesthetics into political life [32]" and Clement Greenberg wrote that although it was "too difficult to inject effective propaganda into" avant-garde art and literature, "kitsch is more pliable to this end" and "keeps a dictator in closer contact with the 'soul' of the people [33]."

Communicating science through art is essential. As Bill McKibben, founder of 350.org, has written, "science alone can't make change, because it appeals only to the hemisphere of the brain that values logic and reason [34]." Reason and meaning on the one hand and emotion and feeling on the other are mutually reinforcing as well as occasionally in tension. The arts help link experience and emotion. As Elaine Scarry has written about beauty and justice and their mutual relationship with symmetry, "matters that are with difficulty kept legible in one sphere can be assisted by their counterpart in the other [35]." Biomedical engineer and science communicator Paige Jarreau states that art "gives scientific ideas shape and imagination." Confronting climate change without engaging both sides of our brains is like confronting a bully with one hand tied behind one's back. [36]

It took me some time to appreciate the crucial and important role the arts have played and must play. After writing about climate change and scientific uncertainty and participating in workshops with scientists, journalists, and lawyers, I realized that science and reason, although critical, are not getting through to enough people. This essay about the Extraction Project's "glorious ruckus" is written with the intention of sharing with those friends, colleagues, and potential supporters who might not already have considered it, my appreciation for the vital voices of artists.

HOW CAN ARTISTS HELP?

Artists such as painters, musicians, dancers, poets, storytellers, dramatists and theater artists, photographers, filmmakers, fine-art printers, and cartoonists—who must also have environmental authenticity and credibility—are needed to bring their talents, creativity, spirit, and emotional sensibilities to the challenge of protecting and reclaiming our environment. They bring issues into the realm of emotions, affecting people on a sensory, spiritual, and visceral level in a way that scientific reports, statistics, graphs, and reason do not. They engage us. As artist and philosopher Enrique Martinez Celaya says, "Since it exists only as an experience, art is brought forth not only by the artist but also by its observer [37]."

Artists remind us of our humanity and renew our determination to care for our earth and our descendants. They evoke the environmental intimacy reflected in cave paintings by ancient humans and Neanderthals and in contemporary artworks such as *Storm King Wavefield* by Maya Lin and *Storm King Wall* by Andy Goldsworthy [38]. They help us restore lost intimacy and renew our reverence for nature, as Henry David Thoreau did in 1854 with *Walden* [39] and as my friend and Earthjustice colleague, Edwin Matthews, does today in *Litchfield Country Journal: Notes on Wildness Around Us* [40]. They move us from despair about a *Silent Spring* to the hopefulness of the hymn, *How Can I Keep from Singing* [41]. Like the Lorax, they speak for the trees who have no tongues, and, like the fox who spoke to the Little Prince, they remind us that "You become responsible, forever, for what you have tamed [42]." Poet John Daniel, in *Descendants of the Nuclear Age*, reinforces our sense of responsibility to unborn descendants and fellow creatures who lack human voice and power: "only in us can they speak at all, they speak if we speak for them [43]." Artists spark a child's sense of wonder, simplicity, and good-heartedness and rekindle those spirits in adults. They inspire action while rejuvenating our inner wilderness.

Charlotte Bird, *Goodbye My Village*, 2018, Hand-dyed and commercial cotton, polyester organza, polyester thread, perle cotton thread; hand cut and fused applique, machine stitched, machine quilted, hand emboroidered, 48 by 32 inches

Artists of all ilk restate our deepest and evolving values in a language accessible to the times (wheth-

Timothy McDowell, *Mad Mother*, 2016, oil and wax on linen.

er fine arts, music, or literature). They reinforce the compassion that must attend the law and guide science, which without values and compassion are capable of monstrous undertakings. Their function, as Kenneth Rexroth said, "is the revelation of reality in process, permanence in change, the place of value in a world of facts [44]." They act as our conscience, as Picasso's *Guernica* demonstrates so vividly. They help us cope with and sometimes even survive the direst conditions as they did for some prisoners in Nazi concentration camps and, under harsh but less dire conditions, for some Japanese Americans segregated and incarcerated in U.S. camps and centers during World War II [45]. Art helps migrant children in detention camps find their voices. "Art is here to prove, and to help one bear, the fact that all safety is an illusion," said James Baldwin in his talk, *The Artist's Struggle for Integrity* [46].

Artists have lasting influence. They address the widespread hunger for community, spirituality, and fairness that Pope Francis, for example, in his encyclical, *Laudato Si*, and other leaders are addressing [47]. They evoke our ability to empathize with victims of environmental injustice, cope with uncertainty, appreciate new frames of reference, identify with others, celebrate the natural world, surmount melancholy and apathy, and build morale such as the song *We Shall Overcome* does in the ongoing struggle for civil rights. They transcend language barriers as well as national, political, and cultural boundaries. They dramatize earth wounds like acid mine drainage (AMD) as well as reclamation. T. Allan Comp, a former historian for the National Park Service and a historic preservationist, has spurred community effort in Appalachia through his AMD&Art project to reclaim toxic former coal mines using design, sculpture, and history, as well as science [48].

Rachel Carson's *Silent Spring* combined science and imagery to help ignite the environmental movement [49]. She also said, "I believe quite sincerely that in these difficult times, we need more than ever to keep alive those arts from which [we] derive inspiration and courage and consolation—in a word, strength of spirit." Upton Sinclair's *The Jungle* exposed the meatpacking industry and led to the Pure Food and Drugs Act of 1906 [50]; Sinclair famously said "I aimed at the public's heart and by accident I hit it in the stomach." Likewise, the Abu Ghraib photographs and Fernando Botero's paintings bring home the evils of torture and lawlessness, and Sebastião Salgado's photographs illustrate the bravery and beauty of workers while the fruits of their toil are being extracted under often grim conditions [51].

ADDITIONAL EXAMPLES OF ENVIRONMENTAL CONTRIBUTIONS BY ARTISTS

Poems

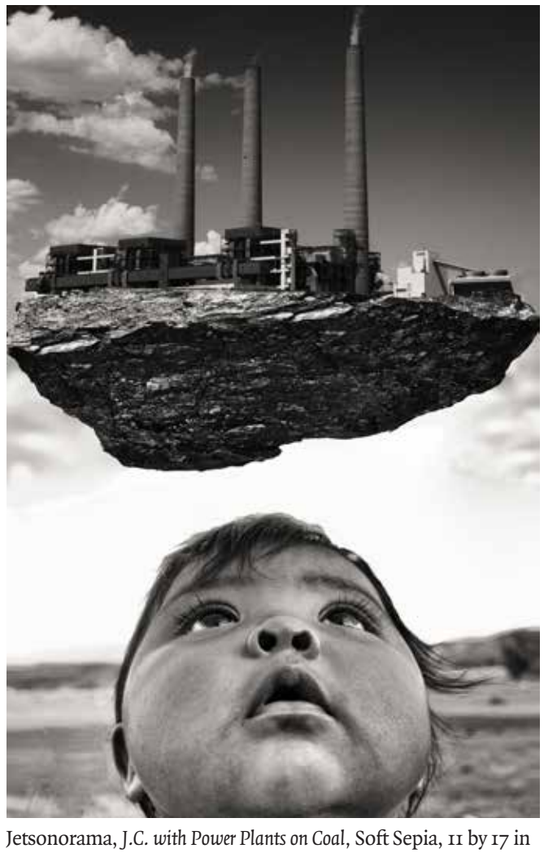
Poems such as "On the Fifth Day" by Jane Hirshfield, "Erosion" by Terry Tempest Williams, "Extinction" by Elizabeth Herron, "Poem of the One World" by Mary Oliver, "The Problem of Describing Trees" by Robert Hass, "Watershed" by Tracy K. Smith, "For the Children" by Gary Snyder, "The Peace of Wild Things" by Wendell Berry, and "Waging Beauty As the Polar Bear Dreams of Ice" by Daniela Gioseffi, help us imagine a better world, comprehend the despoliation we have caused, listen to new voices such as "the cellists" in Jane Hirshfield's poem, and enchant as well as sometimes disenchant us [52]. "Poems pull water from air we thought was dry," says poet Kristin George Bagdanov, author of *Fossils in the Making* [53]. "Poets are the unacknowledged legislators of the world," wrote Percy Bysshe Shelley [54].

Songs

Songs such as "This Land is Your Land" by Woody Guthrie, "Big Yellow Taxi" by Joni Mitchell ("they paved paradise and put up a parking lot"), "What Have They Done to the Rain" by Malvina Reynolds, "Rejoice in the Sun" by Joan Baez, "Don't Go Near the Water" by Johnny Cash, "Save Our Planet Earth" by Jimmy Cliff, and "Sailing Up My Dirty Stream" by Pete Seeger, which contributed to the enactment of the Clean Water Act of 1972, are just a few among many examples of the intersection between music and the environment [55]. The Climate Music Project makes climate change personal through music. We can strive to make it possible to sing "America the Beautiful" with conviction that the title is still true [56].

Dances

Environmental dance is evolving as a way of expressing our connection to the earth. Dancing on the banks of the Cannonball River in North Dakota, the Standing Rock Sioux, joined by representatives of over 250 indigenous tribes from around the world, sought to save the sacred earth and stop the Dakota Access Pipeline [57]. Dances such as *GLACIER: A Climate Change Ballet*, choreographed by Diana Movius, which imagines dancers as melting polar icecaps; *On the Nature of Things*, a collaboration by Karole Armitage and Paul Ehrlich; and *Bringing the Arctic Home*, choreographed by Jody Sperling, create an emotional experience and movement that may lead to action [58]. *Destiny Arts in Jewels* features teenagers who venture underground to find the "Book of Secrets" to help save Planet Earth and learn that they hold the secrets within themselves and have the power to make necessary change [59]. As Barbara Ehrenreich writes in *Dancing in the Streets: A History of Collective Joy*, "festivity generates inclusiveness [60]."



Jetsonorama, *J.C. with Power Plants on Coal*, Soft Sepia, 11 by 17 in

Photographs and Paintings

Photographs such as those by David Maisel, Robert Glenn Ketchum, Michael Light, Garth Lenz, and Mandy Barker depict the beauty of the earth as well as the despoliation that humans have caused by extraction [61]. Christmas Eve 2018 marked the 50th anniversary of *Earthrise*, Apollo 8 Astronaut Bill Anders' photograph that depicted the beauty

and fragility of Earth, which the late Galen Rowell described as "The most influential environmental photograph ever taken [62]." Photographs are sometimes shocking, but can be deployed with intelligence and sensitivity to help prevent or mitigate image fatigue, foster a wariness of photoshopping and "deep fakes," and comment on the seductiveness of the beauty of a photograph despite the horror or cruelty it reveals [63].

Photographs and paintings contribute to legislation and public policy [64]. William Henry Jackson's photographs and Thomas Moran's paintings led to the creation of Yellowstone National Park [65]. The photograph of President Teddy Roosevelt and John Muir, *Overhanging Rock at the top of Glacier Point, Yosemite*, contributed to the joining of state grant lands and national park lands [66]. Ansel Adams' book, *Sierra Nevada: The John Muir Trail*, led to the establishment of Kings Canyon National Park [67]. Robert Glenn Ketchum's book, *The Tongass: Alaska's Vanishing Rain Forest* led to the Tongass Timber Reform Act of 1990 [68]. Believing in environmental action, Adams and Ketchum also lobbied diligently and successfully for their proposals.

LOOKING AHEAD WITH THE EXTRACTION PROJECT

The Extraction Project has a big vision and a simple message that concentrates on the arts and the environment: It hopes to educate, provoke, inspire, and reinforce others—educators, activists, academics, journalists, scientists, policy and opinion makers, and concerned individuals while maintaining its independence as an art project. It has enlisted topnotch artists and art venues while respecting their boundaries and helping non-artist groups and individuals call attention to the social and environmental consequences of industrialized natural resource extraction.

Peter and the project's allies are continuing to seek additional fruitful liaisons and funding. They are continuing to build publishing and advertising media opportunities and sponsorship for exhibitions, especially in regrettably underfunded small art museums and non-profit galleries around the West and in potential musical venues. They are countering the nefarious forces that have targeted federal and state legislative and regulatory programs and begun a propaganda blitz promoting their anti-environmental policies. Now is an ideal time for philanthropists to support excellent projects to communicate science through art and reach people on an emotional level. "Climate philanthropy has failed" and needs to help environmentalists "learn how to speak from the heart as well as the head," as Mark Gunther reports in the *Chronicle of Philanthropy* [69].

To cover the costs of publications, editing, marketing, administration, website creation, communications, the new Megazine, and other requirements, the project has received and continues to seek funds from individual contributors, foundations, kick-starting and crowd-funding, event sponsorships and tickets, and sales of items donated by artistic supporters. It has also received and continues to seek nonmonetary contributions such as paintings, poems, musical compositions, broadsides, photographs, printings, gallery space, and the help of volunteers.

The project continues to reach out to various environmental, tribal, and pertinent nonprofit organizations that are addressing the challenges of unsustainable extraction and climate change.

The CODEX Foundation, a nonprofit tax-exempt 501(c)(3) organization that Peter founded, will continue to receive and administer charitable donations and project funds through a separate designated account (2203 4th Street, Berkeley, CA 94710-2214; tax id. no. 11-3763607). The Extraction Project affords an opportunity to build a movement that will help our planet, the innumerable varieties of life it sustains, our families, children and grandchildren, and untold generations to come if we act for them now. Come join the glorious ruckus.

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GUIDELINES FOR DOCUMENTATION

In anticipation of possibly acquiring materials from the Extraction Project for the Center for Art + Environment Archive Collections, you might find helpful some background and responses to frequently asked questions.

The Center for Art + Environment (CA+E) was established at the Nevada Museum of Art in January 2009. Its mission is "To be a global leader in supporting the practice, study, and awareness of creative interactions between people and their environments." The CA+E Archive Collections comprise the foundational materials from which other activities of the Center are derived, such as exhibitions, publications, and public programs. The Archive Collections are an enduring ensemble of archival records, objects, and artworks that attract scholars internationally to the Museum to create scholarship. The strategy of the CA+E is to collect materials worldwide and to make them accessible to scholars and the public, both on a physical basis at the Museum and online.

Although the focus of the Archive Collections is primarily on site-specific works addressing creative interactions with various environments, some of its materials deal with the larger framework of global change and systems. As of late 2016 we have more than 125 separate archives in-house or under development, which together contain more than a million items upwards of 1000 artists working on all seven continents. We process anywhere from ten to twenty archives annually, and you can see our finding aids here: http://www.nevadaart.org/explore/collections/cae-archive-collections/finding-aids/.

The Museum is accredited with the American Alliance of Museums (AAM), which means that we follow national standards in the acquisition and care of the objects we collect, store, and offer for study. Materials are held in climate controlled and secure surroundings, and while access to the Archive Collections is not difficult, it is closely monitored in order to preserve the integrity of the materials. In line with AAM standards, our primary concern always revolves around both conservation and access.

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- Analog and digital Images, recordings, and misc. documentation of your operations in other media;
- If you are representing an organization, founding documents of the nonprofit corporation;
- Artworks and reproductions of artworks related to archival records and projects collected by the Center for Art + Environment.
- Objects related to archival records and projects.
- The one thing of which we're increasingly wary are data dumps—hard drives, for example, that are full of highly duplicative images, emails, and documents. That material can take months or longer to process if it's not already culled and ordered. We'll accept the material, of course, but we may not sort it if it's too extensive.

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There is no way to answer all the questions now that may arise during the life of these materials and their usage, but we trust that this will help you understand our concern is that materials be retained securely and intact for the benefit of the artistic and scholarly communities, and on behalf of the public.

Sincerely,

William L. Fox
Director, Center for Art + Environment

Sara L. Frantz
Archivist/Librarian, Center for Art + Environment

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