

Art and biology intersect in Brandon Ballengée’s “Sea of Vulnerability”

By
Joseph Gramigna

-
September 20, 2017



Artist and biologist Brandon Ballengée with his art piece, "Collapse." -Photo

Editor/Amanda Palma

Art and biology seldom commingle.

At the Rowan University Art Gallery, the two disciplines find common ground in the current installation of Brandon Ballengée’s “Sea of Vulnerability.”

A professional artist and biologist, Ballengée visited campus for a lecture and opening reception concerning his work currently on display.

Gramigna, Joseph. “Art and biology intersect in Brandon Ballengée’s ‘Sea of Vulnerability.’” *The Whit Online*. September 20, 2017.
<http://thewhitonline.com/2017/09/arts-entertainment/art-and-biology-intersect-in-brandon-ballengees-sea-of-vulnerability/>

"I'm really interested in the way you can utilize art and science to try to get people interested and inspired and engaged to learn more about the environments they find themselves in," Ballengée explained.

This conception of "transdisciplinarity" emerged from the scientific community, but has since been embraced by the arts community.

"We're realizing that disciplines combined can hopefully work together to tackle some of the huge issues that we face globally," Ballengée said, pointing to climate change as one such issue.

Much of Ballengée's research focuses on amphibians and their declining populations, illustrated prominently in his work "Malamp: Reliquaries." In this piece, terminally deformed frogs are chemically altered through a process known as clearing and staining. Photographs of the specimens are then printed on watercolor paper, evoking the feel of a 19th century watercolor print with a subdued palette, as Ballengée described it.

"They're printed a certain scale because I want people to not be afraid of them, or not just walk by them," Ballengée said, referring to the large artistic rendering of the minuscule frogs. "I want them to feel like they're walking up to a toddler, like you want to hold it."

This approachability is an aim of Ballengée's, with the goal being to guide spectators to become aware of what's wrong with the subjects portrayed, hopefully inspiring reflection on ecosystems and what can be done to conserve them.

The centerpiece of the exhibit — "Collapse" — is a response to the 2010 British Petroleum oil spill in the Gulf of Mexico. The layered piece features several levels, ascending up toward the ceiling of the gallery. Each level consists of many jars, with each jar containing a variety of specimens.

According to Ballengée, around 26,000 specimens and 400 species are represented, equaling less than three percent of the known biodiversity in the Gulf of Mexico. The level on which a specimen is set corresponds to its trophic level and where it stands in the food chain.



Ballengée's sculptural piece, "Collapse." - Photo Editor/Amanda Palma



Ballengée (left, against wall) is introduced by College of Communication and Creative Arts Dean Sanford Tweedie (right). - Photo Editor/Nicole Mingo



Ballengée during his artist lecture. -Photo Editor/Nicole Mingo

Mary Salvante, gallery director and curator for programming at the Rowan University Art Gallery, gave an insider's look at the process of installing a complex work like "Collapse."

"With all of our shows, but particularly this show, there were a lot of challenges with getting it ready for presentation," Salvante said. "For example, the very large platform that you see, we had to build on-site. I had a professional fabricator come in to build it, and then Brandon came so that he had to organize all the jars, since he knew what order they had to be in. To actually install it, we had to rent scaffolding with a catwalk. The installer had to go out to the center of the catwalk over the pedestal to place the jars one at a time. Then, we put plexiglass over one level and started again with the next tier, placing one at a time, and so on. It took us three days. It's a slow process, but it paid off."

"Collapse" aptly conveys the immense amount of life contained within oceanic ecosystems, generating reflection on the vast number of living creatures that can be affected because of oil spills and other human actions.

Senior fine arts major Matt Scalici echoed this notion.

"It's really interesting to see how many animals got affected by the oil spill," he said.

The eye-catching, room-dominating work achieves Ballengée's goal of raising interest and awareness for the cause of natural conservation.

By taking familiar sights — frogs and specimens in a jar — and representing them in a nontraditional yet approachable fashion, Ballengée's "Sea of Vulnerability" succeeds in combining art and biology for a transdisciplinary spectacle.

Ballengée's installation is on display at the Rowan University Art Gallery at 301 High St. until Nov. 5.

Smithsonian.com

With Deformed Frogs and Fish, a Scientist-Artist Explores Ecological Disaster and Hope

A 20-year retrospective of Brandon Ballengée's artwork explores humans' connection to cold-blooded creatures

Fessenden, Marissa. "With Deformed Frogs and Fish, a Scientist-Artist Explores Ecological Disaster and Hope." *Smithsonian.com*, October 7 2016. <http://www.smithsonianmag.com/arts-culture/deformed-frogs-and-fish-scientist-artist-explores-ecological-disaster-and-hope-180960711/>



DFB 45, Arès, Brandon Ballengée, 2008. Scanner photograph of cleared and stained multi-limbed Pacific Tree frog from Aptos, California in scientific collaboration with Dr. Stanley K. Sessions. Title in collaboration with the poet KuyDelair.(Courtesy of the artist and Ronald Feldman Fine Arts, New York)

By [Marissa Fessenden](#)

SMITHSONIAN.COM

OCTOBER 7, 2016

In the early to mid-1990s, people across the northern and western United States, from Vermont to Michigan to California, started noticing something strange in their local ponds. Frogs clustered at the water's edge sprouted too many limbs. Their normally compact squat was distorted by three or four or more sprawling, spindly back legs. On others, limbs were truncated and missing.

"It scares me," Judy Helgen, a researcher at the Minnesota Pollution Control Agency [told *The New York Times* in 1996](#) about the then-mysterious malformations. "I'm at different levels of getting a chill down my spine."

Worried that the cause of the deformities might next affect humans, researchers took to the field to investigate. Over the next decade, they discovered that for many malformations, [the culprit was a tiny parasitic flatworm](#), a trematode called *Ribeiroia ondatrae*.

The trematode tends to infect frog species just when they are developing their limbs. The parasites burrow into the limb buds of tadpoles and create cysts that prevent all the cells in the developing limb from communicating with each other. As a result, [multiple legs can sprout](#) where just one should have.

Tragically, the deformities can be severe enough that young frogs may die because they can't move properly.

Yet where some people might see only fuel for nightmares, Brandon Ballengée saw an opportunity to connect people to the environment.

"We are all artists and scientists," he says. "Both are creative endeavors to understand the world around us and within us. Everyday we approach the world through the lens of the scientist when we are trying to learn the way that things work. But then we also learn from an emotive side."

Ballengée is an artist, a biologist and an environmental activist. His research delves into the causes of deformities in fish and amphibians, and his artwork features images inspired by his science.

Now, an [exhibition](#) at the University of Wyoming Art Museum presents a survey of the many intricate, creepily-beautiful works that Ballengée has created over the past 20 years. The more than 100 pieces on display include prints, photographs and installations that feature fish, amphibians, birds and insects.

Frog skeletons glow in rich pinkish-red, vibrant blue and tawny orange against white or black backgrounds. Their too-numerous legs and other abnormalities are obvious. Ballengée made [these images into art](#), but the specimens would be familiar to researchers. To study skeletal deformities in amphibians and fish, scientists wash the creatures' dead bodies in a chemical bath that renders flesh transparent. Then they stain the bones different colors.

The same basic process also made possible the [magenta fish skeletons](#) that shine from inside large light boxes. Not all of Ballengée's featured animals are transparent. Another series includes [images of multi-colored pigeons](#)—in natural hues, not stained—hanging in repose. These are digital collages created from the preserved skins of Charles Darwin's personal collection of pigeons. A few other series include large images of [developing frog eggs](#), [fetal chickens](#) and pages from old natural history books [with the species that have since gone extinct cut out](#).

"I explore how we see the environment from the lens of the animal and what do these organisms tell us," Ballengée says. "But I try to do it in a way that is not so much hitting people over the head with a message, but actually having them experience it."

As a PhD student, Ballengée looked into the mystery of missing limbs on amphibians. Now, he is a post-doctoral researcher at Louisiana State University, where he works with the LSU Museum of Natural Science's curator of fishes, Prosanta Chakrabarty. Their [current project](#) involves raising awareness of the aftereffects of the BP Deepwater Horizon oil spill in the Gulf of Mexico.

The effort marries a survey of biodiversity in the Gulf with a traveling museum that includes images of fish that died after the spill. Ballengée invites school groups and members of the community to help the survey team, see the traveling exhibit and offer their own reflections on the spill and recovery.

Combining disciplines in this way came naturally to Ballengée. During his childhood in Central Ohio and Eastern Tennessee, he would often go out to collect amphibians, fish and insects. "I would set up these kind of habitat dioramas in aquariums or terrariums to study their behavior," he says. "But I was always drawing them too. I couldn't do one without the other, and I still can't."

Ballengée spoke to Smithsonian.com about his work and the University of Wyoming exhibition.

How does your art influence your research?

Even through getting my graduate degree, I've always been interested in making art about the experience of studying these declining species and the impact of what is like to find these frogs in nature. But I also do this thing where I take people into the field with me.

I call them ecoactions. Basically it's a kind of citizen science or participatory biology. It gets people involved and interested, but I'm learning from them too. What do they know about these wetlands or these species? I'm often a tourist as a researcher. I'm going in for a year or two and don't have the background of growing up in the area.

But then people also have this experience of finding frogs. These are complicated situations, where maybe 70 percent of the frogs you are finding are terminally deformed. This is tragic because the little frogs are just coming out of the water and if they have no hind limbs, then they are just dying. I encourage people to make art or take art materials with them so there is a way they can reflect on it.

How do you try to balance the tragic and the inspiring in your work?

There are aesthetic strategies that I try to employ throughout the work so that in each there is something engaging, not just scary or overwhelmingly sad. There is a lot of choice when it comes to use of color and use of material.

For example, in this series I am working on now, called "Ghosts of the Gulf," there are giclée prints [digital prints created on inkjet printers] that are watercolor ink on handmade Japanese rice paper. As a result, the colors of the fish have this feeling of being very fragile and ephemeral. The images are of these little fish that were found dead either during the oil spill or right after. On the science side, I was collecting the fish and staining them to look for any developmental defects, which we didn't find, but they were just so beautiful I wanted to image them and make art.

Hopefully they are beautiful enough to just attract people to the texture, form and color, and then people on their own can ask questions.

It is a difficult push and pull between trying to express something that is really beautiful and at the same time telling these stories that are kind of tragic. I try to balance it out with different bodies of work that deal with resilience too. Hopefully, when people see or experience the exhibition they don't leave feeling sad—instead they leave feeling interested and engaged.

But I do like to have that whole range of emotion.

What pieces in new exhibition fit this theme of resilience?

There is a piece called "Hope," involving raptor wings from the University of Wyoming [Vertebrate Museum](#). What they allowed me to do is use 13 raptor wings. They are just kind of coming out of the wall and creating this arch.

Since the ban of DDT, raptor populations in general are really coming back. I think that is a really hopeful story that started with *Silent Spring* and Rachel Carson. Just a few individuals fought to stop the use of this pesticide that was hurting birds. Because of them, it was banned and now we are seeing the result.

Also, in one part of the exhibition there are breeding calls of the [Wyoming Toad](#). Their story is really fantastic. At one point it was thought there were less than 10 alive

anywhere in the world, and so some people collected eight of them. From those eight, they have released a quarter of a million since the 1990s back into the wild. It was just a handful of people initially that saved this species from extinction.

What does being an environmental activist mean to you?

I'm really interested in the term activist meaning "to activate." Imagine if you can activate people to look at an environment as all those little individuals—all those little insects, all the little frogs, all the organisms that are out there—and as part of their community. Getting people to look at ecosystems that way, I think, really changes their perspective and their actions and behavior.

I just love the idea of sculpting society through ideas. That way you can activate and inspire one another toward better and more sustainable behaviors.

"Waste Land: A Survey of Works by Brandon Ballengée, 1996-2016," continues through December 17 at the University of Wyoming Art Museum in Laramie, Wyoming. Many more images of Ballengée's work as well as his scientific research can be found on [his website](#).

Read more: <http://www.smithsonianmag.com/arts-culture/deformed-frogs-and-fish-scientist-artist-explores-ecological-disaster-and-hope-180960711/#HiLdK3wZrDpDYpUI.99>

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REVIEW: University Of Wyoming Art Exhibit "WASTE LAND: A Survey Of Works By Brandon Ballengée"

10/3/2016

Research on Amphibians Inspires Unique Photography



Brandon Ballengée "Vertical Fall in the Winter call that dances in the spring nocturnal..." From the series "A Season in Hell Series; Deadly Born Cry" by Brandon Ballengée with versified titles forming a poem by KuyDelair In scientific collaboration with Stanley K. Sessions 2010/12, Unique digital Chromogenic prints 163 cm by 142 cm/ 64 inches by 56 inches Courtesy of the artist and Ronald Feldman Fine Art, New York

By Stephanie Dar

Contributor

Dar, Stephanie. "REVIEW: University of Wyoming Art Exhibit "WASTE LAND: A Survey Of Works By Brandon Ballengée." *SciArt Magazine*, October 3 2016.

<http://www.sciartmagazine.com/blog/review-university-of-wyoming-art-exhibit-waste-land-a-survey-of-works-by-brandon-ballengee>

The "WASTE LAND" exhibit at the University of Wyoming in Laramie, Wyoming showcases photographs taken by the biologist and artist Brandon Ballengée. The pieces on display are inspired by Ballengée's research regarding deformities in amphibians, fish, and birds; in fact, many of the photographs are of actual research specimens.



Brandon Ballengee DFB 42, *Eléktra Ozomène* Scanner Photograph of Cleared and Stained Multi-limbed Pacific Tree frog from Aptos, California in Scientific Collaboration with Dr. Stanley K. Sessions. Title in collaboration with the poet KuyDelair. H 46 inches x W 34 inches 117 cm by 86 cm Unique IRIS print on watercolor paper 2008 Courtesy of the artist and Ronald Feldman Fine Arts, New York

In the photograph above a colorfully cleared and stained pacific tree frog is shown against a stark white backdrop. At a first glance, the color palette of the image is pleasing to the eye, but upon closer inspection,

it becomes evident that the featured amphibian is sporting what appears to be several additional extremities. Ballengée's collection features several other specimens in a similar fashion.

In the digital chromogenic print above, two young birds are shown, again brightly colored against a white backdrop. The specimens chosen for this collection feature birds that were born with wing deformities or birds that died at a premature age of unknown causes. When describing the collection, Ballengée referenced the book by Rachel Carson, *Silent Spring*, to call attention to the decline in the avian population, which in turn, leads to quieter spring time seasons as there are fewer songbirds.



Brandon Ballengee Wood Frog Eggs, *Rana Sylvatica* at 36 Hours (hatching) From the Early Life series, 2000/01 Iris prints on Arches watercolor paper 34 x 46 inches Edition size of 3 each plus one artist proof and one printers proof Courtesy of the artist and Ronald Feldman Fine Arts, New York

The "WASTE LAND" collection by Ballengée combines both art and science to draw the viewer's attention to the larger impacts of human influence and activity on the earth, and the unintended consequences of human actions on the inhabitants with whom we share our planet. Exhibit visitors will have a chance to see these impacts firsthand in a unique and almost haunting manner.

Traces of Extinct Animals at the Armory Show

by [Ashley P. Taylor](#) on March 6, 2015



Brandon Ballengée's 'Frameworks of Absence' (2006–ongoing) in the Ronald Feldman Fine Arts booth at the 2015 Armory Show (photo by Jillian Steinhauer/Hyperallergic) (click to enlarge)

The animals have gone missing from booth 844. Framed nature prints crowd the holly walls, but the auks, cougars, wolves, and woodpeckers that were once their subjects have been cut out, leaving blank spaces behind in a sort of artistic animal Rapture. Closer to the truth is that the disappearances were an act, both direct and indirect, of man.

For the series *Frameworks of Absence* (2006–ongoing), artist [Brandon Ballengée](#) has taken [Audubon](#)-style nature prints featuring extinct animal species, cropped out the lost creatures with scalpels and Exacto blades, and framed the stencil-like results. The extinct species remain only as blank spaces, filled by the color of the walls on which the prints hang and by the shadows cast against them. The frames, in various sizes and styles, are hung close together so that the gaps exist less between the

works than within them. The installation, in the [Ronald Feldman Fine Arts booth](#) at this year's [Armory Show](#), is a menagerie of absence.



Installation view, Brandon Ballengée's 'Frameworks of Absence' (2006–ongoing) (photo by Jillian Steinhauer/Hyperallergic)

To make the work, Ballengée collected historic prints featuring species that have been wiped out during the the mass extinction going on right now, sometimes called the sixth extinction, which is known for the at least somewhat causal role that humans play in it. The prints come from all over the world, and Ballengée specifically looked for ones printed close to the time that their featured species went extinct. To Ballengée, the “Victorian” red walls of the booth represent humanity’s destructive force and a shift from living with nature to trying to dominate it. “It’s this idea that was really born in the 19th century, that we could control nature,” he told Hyperallergic. “And as a result, we’re killing everything.”

Each work has a plaque detailing the print’s origins and describing how the excised species went extinct, a mini obituary. As I took notes so that I could accurately refer to each animal, I realized, sadly, that what anyone would really want to know about a given species — where it lived, what it looked like — was missing. It lives nowhere and its image has been destroyed. I started to worry



Installation view of Brandon Ballengée's 'The Frameworks of Absence' (2006–ongoing) showing the urns (photo by Casey Dorobek, courtesy Ronald Feldman Fine Arts, New York) (click to enlarge)

about what would happen if, somehow, in an echo of Ballengée's work, the remaining images of these species were lost. The thought process returns to extinction and death.

On the installation's grayish fourth wall are nine shelves of short black urns, 10 per row. Each is labeled "RIP [extinct species]." Inside are the ashes of not an animal but the cutouts, which Ballengée burned, from each print. A video screen on the floor at the intersection of two cardinal-colored walls shows the bright paper animals being cremated over a metal dish. The screen functions almost as a fireplace in this Victorian parlor. When the works are sold, print and urn are a package, and the buyer is encouraged to spread the ashes. "My hope is that when people have these [images] in their presence and they scatter the ashes that it's transformative," says Ballengée. "So they start to acknowledge the presence of this animal they never knew existed — because it doesn't exist anymore, but hopefully it affects their behavior and makes them a little more conservation-minded and makes them care."



Brandon Ballengée, "RIP Great Auk: After John Gould" (1873/2014), artist cut and burnt hand-colored lithograph "Pl. 55 Alca Impennis" drawn by John Gould and depicted on stone by H.C. Richter from 'The Birds of Great Britain,' Volume 5 published by John Gould in 1873, 13.5 x 20.5 in. The Great auk/'Pinguinus impennis' last observed in 1855. The Great auk ('Pinguinus impennis,' formerly: 'Alca Impennis') was over-hunted for food, stuffed animal collections and sport. Once thriving in the waters of the entire North Atlantic, the last pairing of the Great auk was killed in 1844 on Eldey off the coast of Iceland. (photo by Michael Ahn)



PLATE 36
Passenger Pigeon
Page 253

Adult male Adult female Young in juvenal plumage

Young in juvenal plumage Eastern Mourning Dove Page 252

Adult male

All about one-half scale.

Brandon Ballengée, "RIP Passenger Pigeon: After Louis Agassiz Fuertes" (1925/2014), artist cut and burnt chromolithograph "Plate 36 Passenger Pigeon and Mourning Dove" by Louis Agassiz Fuertes from 'A Natural History of American Birds' by Edward Howe Forbush published in 1925, 11.25 x 7.5 in. The Passenger pigeon (*Ectopistes migratorius*) was one of the most populous species of birds in the world prior to the 1800s. Due to immense habitat loss from mass deforestation and overhunting for its meat, the species' population drastically declined from 1870 to 1890. The last known specimen, Martha, died on September 1, 1914, at the Cincinnati Zoo.



1. *Cydimon brasiliensis*.
2. " *sloanus*.

Brandon Ballengée, "RIP Sloane's Urania Butterfly: After W.F. Kirby" (1897/2014), artist cut and burnt print hand colored stone lithograph "Plate LXXIII 1. 'Cydimon brasiliensis' 2. 'Cydimon sloanus'" from 'A Handbook to the Order Lepidoptera' by W.F. Kirby published in 1897, 7.5 x 4.75 in. The Sloane's urania ("Urania sloanus," formerly: 'Cydimon sloanus') went extinct from their native habitat of Jamaica in 1895.



Rocky Mountain Sheep

Brandon Ballengée, "RIP Audubon's Bighorn Sheep: After John Woodhouse Audubon" (1849/2014), artist cut and burnt print hand colored stone lithograph "No.15 Plate LXXIII Rocky Mountain Sheep" from 'Viviparous Quadrupeds of North America' by John James Audubon and John Bachman, drawn from nature by John Woodhouse Audubon, depicted onto stone by William E. Hitchcock, Octavo Edition printed and hand colored by J. T. Bowen published in 1849, 7 x 10.25 in. The Audubon's or Badlands bighorn sheep (*Ovis canadensis auduboni*) inhabited a range that included parts of the Rockies, Montana, Nebraska and the Dakotas. Believed to have been overhunted, it lost its habitat to the related Rocky Mountain Bighorn.



Brandon Ballengée, "RIP Carolina Parakeet: After John James Audubon" (1940/2009), artist-cut print from 'Audubon's America: The Narratives and Experiences of John James Audubon,' edited by Donald C. Peatie, published in 1940, 14 x 11 in. The Carolina parakeet ('*Conuropsis carolinensis*') was last observed (shot) in the wild in 1904, the last remaining member of this species died in captivity in 1918. This wide-spread North American species was hunted intensely as food source and because of its brightly colored feathers. Additionally much of its breeding habitats were lost to agriculture and other developments. (photo by David W. Coulter)

Brandon Ballengée's [Frameworks of Absence](#) is on view at the Ronald Feldman Fine Arts Booth (#844) at the 2015 [Armory Show](#) (Piers 92 & 94, Hell's Kitchen, Manhattan) through March 8.

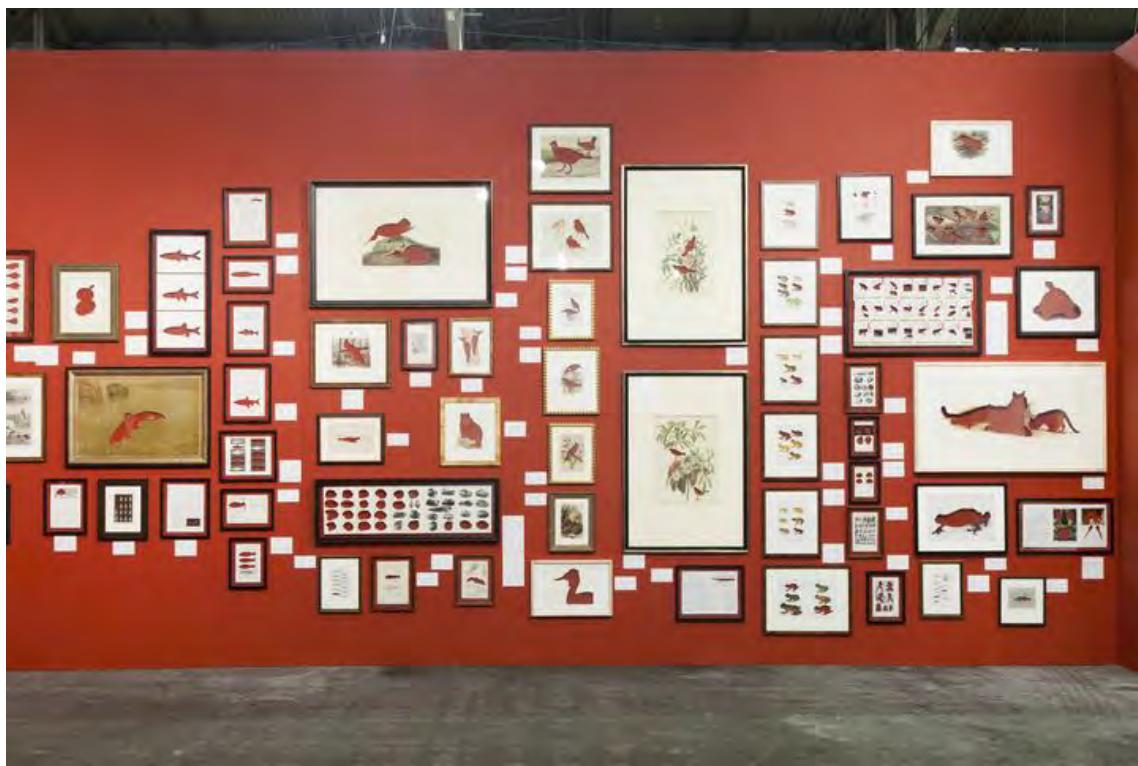


Furman, Anna. "Artist-Biologist Brandon Ballengée Examines Animal Extinction and Calls for Change." *Artsy*, March 4, 2015.
<https://www.artsy.net/post/editorial-artist-biologist-brandon-ballengee-examines-animal-extinction-and>

Artist-Biologist Brandon Ballengée Examines Animal Extinction and Calls for Change

ARTSY EDITORIAL

MARCH 4, 2015



Brandon Ballengée finds historic prints and slices them up, extracting images of extinct animals from their habitats. Sometimes his works function as an environmentalist call to action; other times, they seem stronger as a visual exploration of symbols or an investigation into how scientific data is processed.

Ronald Feldman Fine Arts's booth at The Armory Show 2015 will feature a selection of Ballengée's works, all two-dimensional works on paper that draw attention to shifts in various species.

As is the case with *RIP Rabb's Fringe-Limbed Treefrog: After J. Alison and B. Wilson* (2008), an academic article is juxtaposed against photographs of the described species, posing an interesting interplay between text and image. The subject is a new species of frog found in Coclé, Panama, and four images of different animals appear, each cut sharply from their environments, leaving silhouettes behind. The curvature of each frog's foot webbing and the angles of each tadpole's sides excised from the bottom right of the page seem especially significant as visual elements. There is a pronounced tension between positive and negative fragments of space in this work that relates directly to the presence and absence of the species and the destruction of their environments.

In a work named with a similar mournful tone, *RIP Hazel's Treefrog and Adler's Mottled Treefrog: After David M. Dennis*(1970), Ballengée presents an illustration of five frogs. This time, instead of homing in on each individual organism from the work, he leaves three frogs untouched. This may have been as much an aesthetic decision as a political one: to show the extent to which this particular species of frogs has been disturbed by ecological upheavals.

As Ballengée so eloquently explains, his work “re-examine[s] the context of the art object from a static form (implying rationality and control) into a more organic structure reflecting the inherent chaos found within evolutionary processes, biological systems and nature herself.” As a visual artist, biologist, and environmental activist, this assessment perfectly encapsulates what his transdisciplinary work intends to provoke.

—Anna Furman

Visit Ronald Feldman Fine Arts at The Armory Show 2015, Booth S44, New York, Mar. 5–8.



RIP Phantom Shiner: After Edward C. Theriot, 1982-2014
Ronald Feldman Fine Arts



RIP Steller's Sea Cow: After Wilhelm Meyer, 1881-2015
Ronald Feldman Fine Arts



RIP Tecopa Pupfish: After Phil Pister, 1977-2014
Ronald Feldman Fine Arts

RIP Rabb's Fringe-Limbed Treefrog:
After J. Alison and B. Wison, 2008-2015
Ronald Feldman Fine Arts



RIP Tlaloc's Leopard Frog: After David M. Hillis, 1985-2014
Ronald Feldman Fine Arts



RIP Voiceless Treefrog: After David M. Dennis, 1970-2015
Ronald Feldman Fine Arts



Minoff, Annie. "SciArts Spotlight: Brandon Ballengée." *Science Friday*, April 4, 2014.
<http://sciencefriday.com/blogs/04/04/2014/sciarts-spotlight-brandon-balleng-e.html>

APR. 04, 2014

SciArts Spotlight: Brandon Ballengée

BY ANNIE MINOFF



DFA 147: Phaethon, Brandon Ballengée, 2013. Iris print on Arches watercolor paper. Cleared and stained Pacific tree frog collected in Aptos, California in scientific collaboration with Stanley K. Sessions.

[Brandon Ballengée](#) had just graduated from the Art Academy of Cincinnati when he saw his first deformed frog. It was 1996. Months earlier, a group of Minnesota school kids had made international news by discovering dozens of deformed frogs on a field trip to a local farm. Ballengée remembers seeing the frogs' pictures in the press. "Visually, they really [looked] like victims of Agent Orange or dioxin or Chernobyl," he says. "That, from an environmental standpoint, really concerned me." It concerned him so much that he's spent much of the past two decades exploring the causes of amphibian malformation, both in scientific journal articles and in artworks that cast a haunting light on species' struggle to survive against unfavorable environmental odds.

SciArts Spotlight: Brandon Ballengée



2:15

[captions](#) | [credits](#)

After hearing about the Minnesota frogs, Ballengée began traveling the country, volunteering with the United States Geological Survey to capture and record data on malformed amphibians. The animals he found were often too deformed to survive long on land. A frog missing limbs might starve, for instance, while one weighed down by too many limbs might not outmaneuver predators. Finding these frogs in the wild could be heartbreakng. “You have this animal that’s just struggled its very short life, trying to make it to land, and suddenly they get to land, and they don’t have the tools to survive,” Ballengée says. “They’re just laying there dying.”

As a way of memorializing the frogs he found, Ballengée began painting their portraits. In the field, he used the materials he had on hand: odd bits of old sketches collaged together, pond water, coffee, and cigarette ash. “The idea was to give a presence to this animal with a short life,” he explains. Without some kind of testament to its existence, a tiny deformed frog could “just vanish” without anyone being aware of its struggle.



Hyla Regilla, Brandon Ballengée, 1999. Pond water, ash, and coffee on recycled paper.

Those early portraits were the precursors to Ballengée’s “Malamp” series—one of his longest-running, ecologically inspired art projects. (“Malamp” is short for “malformed amphibian.”) After almost 20 years, the Malamp portraits have evolved from dashed-off pond-side studies to elaborately constructed memorials—what Ballengée calls his “Malamp Reliquaries” (examples are in the audio slideshow above).

Ballengée, who went on to earn a Ph.D in biology and art, creates his portraits using a technique borrowed from lab biology called “clearing and staining” (for more on the process, watch [this SciFri video](#)). At his New York studio, he uses a series of chemical soaks to clear specimens and dye their bones red and cartilage blue. The process is scientifically useful: It allows Ballengée to make educated guesses about how the frogs’ deformities might have developed. But it also transforms the frogs so that, as Ballengée writes on his website, “they resemble gems, or the stained glass windows found in some cathedrals.”

To create the portraits, Ballengée first scans the cleared and stained frogs at high resolution. Then he overlays those scans with upwards of a hundred individual photos in Photoshop. The process is time-consuming, but it allows him to make sure that every part of the frog is in focus. Though the final prints are two-dimensional, the frogs have a crystal clear, almost three-dimensional appearance. Morpheus, Erebus, and Phaethon float against celestial backgrounds, like ghosts or jewels lit from the inside. (In fact, what viewers read as a black sky and stars is actually the natural result of how the scanner’s laser hits each frog and the glycerin in which it’s suspended.) Ballengée augments the frogs’ otherworldliness by giving them names cribbed from Greco-Roman mythology. “Heroic and terrible things happen to [those] characters,” Ballengée says. “I wanted to somehow recall that.”



DFA 204: Erebus Brandon Ballengée, 2013. Iris print on watercolor paper. Cleared and stained North American green frog collected in North Hempstead, New York in scientific collaboration with Peter Raymond Warny.

Printed with watercolor ink on watercolor paper, the “Malamp Reliquaries” have the soft, antique feel of 19th century scientific illustration (unfortunately this isn’t clear from digital reproductions). That’s not a coincidence. Ballengée says he’s a “huge fan” of the natural history watercolors of John James Audubon. In fact, the Malamp portraits are printed at the same size as Audubon’s original Birds of America prints, which depict American birds in their natural habitats. Ballengée hopes that by printing the frogs about the size of a human toddler, viewers will identify with an animal they might otherwise dismiss. “If we start to look at the environment as made up of individuals just as unique as each and every one of us,” he says, “I think that has the potential to really reframe our approach towards our own actions every day.”

As Ballengée’s portraits have become increasingly complex, so has his understanding of what’s causing frog deformities. Like most amphibian researchers in the ’90s, Ballengée believed chemical pollutants were to blame. But years spent documenting rates of amphibian malformation at sites in Yorkshire, England and Quebec, Canada have convinced him and his scientific collaborators that natural predation may be the more direct cause of most deformities. At a Yorkshire pond, Ballengée watched as dragonfly nymphs captured English toad tadpoles, chewed off their legs, and released them back into the water. Amazingly, he says, these tadpoles often survive for a time, healing in ways that resemble severe malformations. Many amphibian biologists

now pin frogs' multiple limb growth on a parasite: *Ribeiroia ondatrae*. Once inside a tadpole's developing limb, *R. ondatrae* undermines normal cell-to-cell communication—cells growing next to parasitic cysts are “tricked” into dividing abnormally. As a result, “frogs end up blossoming limbs,” Ballengée explains.

That's not to say that we humans haven't played our part in frogs' plight. Ballengée's latest field research suggests that wetlands contaminated with agrochemicals and fertilizers are more likely to be “hot spots” for malformation, most likely because those ecosystems support fewer large predators that might keep dragonfly populations in check.



DFA 155: Morpheus, Brandon Ballengée, 2013. Iris print on Arches watercolor paper. Cleared and stained Pacific tree frog collected in Aptos, California in scientific collaboration with Stanley K. Sessions. The white dots near the base of the frog's tail are the parasitic cysts that caused it to develop additional limbs.

Asked why he's continued to pursue both art and science, Ballengée insists that the fields are “absolutely complementary.” “It's so important that we have a really rational and systematic understanding of the way things work,” he says. “And at the same time, we're emotional creatures. I think it's also really important that we have the other side, the arts side, which [allows] for reflection and thinking and feeling what the world means around us.”

Brandon Ballengée's "Malamp Reliquaries" are currently on view at the [Alden B. Dow Museum of Science and Art](#) in Midland, Michigan and at the [Museum Het Domein](#) in The Netherlands.

SciArt in America

February 2014



STRAIGHT TALK

with Brandon Ballengée

Staff. "Straight Talk with Brandon Ballengee." *SciArt in America* (February 2014): 18-22.

(detail) *Styx: Variation VI* (2010). 50" x 20" x 10". Mixed media installation with nine cleared and stained Pacific treefrogs on sculptural light-box.

Installed at Parco Arte Vivente (PAV), Centro D'Arte Contemporanea, Torino, Italy. Summer 2010. Photograph by Valentina Bonomonte. Image courtesy of the artist and Nowhere Gallery, Milan.



Brandon Ballengée is an artist, biologist, and environmental activist concerned with a number of ecological issues including the increasing deformities found in amphibian populations. His own scientific research, published in journals such as the *Journal of Experimental Zoology*, serves as the backbone of his artistic practice. Ballengée lives and works in New York, NY.

SAiA: In your artist statement you describe your practice as pairing biological investigations with artistic interpretation. Can you elaborate?

BB: As an artist and biologist my practice falls into a transdisciplinary approach. Underlying my practice is a systemic methodology, which posits art practice as a means of realizing research science, and vice-versa. While conducting primary research biological studies scientific methods and standards are rigorously followed. The blur comes from the way these seemingly divergent techniques inform one another. The art is an expression derived from experiences with animals in natural or artificial conditions and from the primary scientific research. While making art, I work through mediums based on intuitive decision-making and reflect on the science questions in a different less objective way. This looking from a different viewpoint inspires new questions, experiments, and more science.

Art and science for me have always been intrinsically connected. I grew up in a rural area surrounded by nature and animals. My earliest memories are of catching turtles, frogs, fish, and insects—drawing them and later recording their behavior in aquariums. By the time I was a teenager my parents had let me set up a working wetlab in the basement and an art studio in our barn. At that point I was breeding Amazonian knife fish and making huge paintings. My father was a physician and my mother her own kind of artist—so from my early experiences it has always been natural to understand the world through the lenses of art and science.

SAiA: Much of your work is about environmental issues and public involvement; can you explain why and how this came about?

BB: Growing up in nature entrenched in me a strong desire for conservation of biodiversity



Collapse (2010/12). 12' x 15' x 15'. Mixed media installation including 26,162 preserved specimens representing 370 species, glass, preservative solutions.

In collaboration with Todd Gardner, Jack Rudloe, Brian Schiering and Peter Warny. Installed at Ronald Feldman Fine Arts, New York, NY (spring 2012). Photograph by Varvara Mikushkina, image courtesy of the artist.

and ecosystems. Bringing this message to the public underlies all of my work in science and art—what I call an impetus for “ecosystem activism.” Here my field investigations and laboratory programs stress public involvement and engagement. In 2009, I coined the term “Participatory Biology” to describe these forms of citizen contributory science that also importantly facilitate participant reflection as part of the research process. Pragmatically, this has involved recruiting volunteers to aid in biology studies, and creating temporary research laboratories, namely Public Bio-Art Labs, which is open to general audiences. While conducting such primary research experiments scientific methods and standards are rigorously followed; however the process of science is made transparent, participatory, and reflective at a non-specialist group level.

Likewise, in ecological field surveys I encourage public participation, what I call “Eco-Actions.” Here citizens contribute by actively helping to collect data on wildlife and monitor wetlands, and in turn learn more about the ecology and biodiversity of where they live. These Eco-Actions attempt to focus participants on specific ecosystems through experiential methods and basic scientific wetland-surveying techniques. Participants are also encouraged to express their experiences

through making art. By looking, hands-on science, and artistic reflection, participants learn and generate knowledge about local ecosystems and the organisms they share their neighborhoods with. These kinds of experientially-based Participatory Biology programs allow for citizens to become directly involved in research and experience a side of nature many have not.

SAiA: In your “Malamp” series, you investigate the array of deformities found in amphibians, the causes of which are the subject of your scientific research as well. Altered to reveal bone structure and then scanned, these works exist ultimately as photographs. How did you begin this project, and what do you hope can be gained from the viewing experience?

BB: For over a decade, a central focus of both my art and scientific research has been the occurrence of developmental deformities and population declines among amphibians. Amphibians as a group are in crisis—with estimates at over 40 percent of the known 7,000 species in decline or already extinct. Learning what we can about them and developing strategies for their conservation may be vital for their survival, as well as countless other species impacted by their loss—even our own.

In 1995, a group of Minnesota school children found numerous severely malformed frogs on a class field trip. At this point I was a young artist just out of my undergraduate studies and newspaper images of these frogs with what they could mean environmentally horrified me. Within weeks, I had made contact with the Minnesota Pollution Control agency and scientists around the country—within a few years I was conducting field research with the USGS (U.S. Geological Survey) and working in labs to try to understand what could be causing these deformities.

Over time the science research experiences led to different bodies of artworks, the longest running being my “Malamp Reliquaries” (2001-ongoing) and the sculptural series “Styx” (2007-ongoing). The artworks are derived from the complex sensations of finding such deformed animals in nature and the awareness that we are in part sculpting their development through our treatment of the environment. The works are exhibited with the intention of engaging viewers—hopefully making them interested and concerned for the global plight of amphibians.

“The Malamp Reliquaries” are created by chemically “clearing and staining” terminally deformed frogs found in nature. Once cleared and stained the specimens look almost like X rays. Aesthetically, the colors of the dyed bone and cartilage are vibrant in contrast to the skin, which is semi-transparent, almost shroud-like and ephemeral. This process enables a level of abstraction or distance while simultaneously revealing the complex configuration of malformed development. It alters direct representation as I do not want to exhibit large images of “monsters,” which would be frightening and be exploitative of the misfortune of the organism.

This process is followed by high-resolution scanner photography of each specimen to create individual portraits. I use the direct imaging process of scanning to reference the tradition of photograms in natural sciences by Anna Atkins and others, and because of the remarkable details that can be captured through this technique. These portraits are printed as unique watercolor ink prints (never made into editions) and each individual is centered, appearing to “float” in what looks to be clouds or the night sky. This otherworldly quality is

reinforced by the titles named after ancient characters from Greco-Roman mythology. They are scaled so the frogs appear approximately the size of a human toddler, to invoke empathy instead of detachment or fear—if they are too small they will be dismissed, but if they are too large they become monsters. Each finished artwork is unique and never editioned, to recall the individual animal and become a reliquary to a short-lived, non-human life.

In the sculptural series “Styx,” the actual cleared and stained deformed specimens are displayed on large dark structures—to resemble fallen obelisks. The specimens are small, out of our normal human-scale for bodily association, but through precisely illuminated glass dishes they become the “light,” and focal point. Viewed up close they resemble gems or the stained-glass windows found in some cathedrals. There is something familiar about them, enchanting but terrible and otherworldly. “Styx” is a sculptural expression of complex sensations derived from finding the abnormal frogs in nature. It forces intimacy between the viewer and subject—it asks the viewer to re-question their behavior and approach towards the environment.

SAiA: Let’s talk about your ongoing series, “Love Motels for Insects.” In creating these sculptural “motels,” you utilize embedded ultraviolet lights to attract countless insects and promote public interaction with local insect species. Could you talk about how you came to start this project and how it has been received thus far?

BB: “Love Motel for Insects” is an ongoing series of outdoor installations that use ultraviolet lights on enormous sculpted canvases to attract insects. Arthropods gather on the surface of the works, breeding, and I encourage people to come watch. The work is as much about creating a situation between people and arthropods—a “trans-species happening,” as it is public art made for human and non-human communities. With each variation, the “Love Motel for Insects” becomes a temporary habitat for arthropods and the backdrop for events—picnics, biodiversity workshops, environmental festivals, graffiti jams, political rallies, scientific investigations, even musical events—it is an open-ended experiment to see who comes and what occurs when humans and other organisms gather.

The series began in 2001 in Costa Rica, when I used battery-powered black lights and bed-sheets placed in the jungle floor to see what would be attracted. Almost instantly numerous species of moths, beetles, mantids, scorpions, and other arthropods descended on the installation. I was so inspired that the next night I recreated the experiment but this time invited others to come watch. After, I began developing complex sculptural forms and public nocturnal field trips around the world. To date, versions of the project have debuted on boats in Venice, Irish peat bogs, Scottish moors overlooking Loch Ness, a bustling Delhi shopping mall, along side Aztec ruins in Mexico, an inner-city bus stop in New Haven, urban roof tops in London, temperate forest mountainsides in South Korea, a bayou in New Orleans, and most recently in NYC's Central Park.

SAiA: In 2012 you exhibited a large installation made with thousands of preserved specimens that responded to the Deepwater Horizon Oil Spill at Feldman Gallery in NY; can you talk about this project?

BB: The 2010 BP Deepwater Horizon (DWH) oil spill was the largest environmental disaster in the history of the United States. The installation *Collapse* responded to the unraveling of the Gulf of Mexico's food-chain following the spill and use of teratological dispersants used to "clean" the oil. Physically,

Collapse was a pyramid display of hundreds of preserved fish, other aquatic organisms, and DWH contaminates in gallon jars. It was meant to recall the fragile inter-trophic relationships between Gulf species, and the way the spill may have altered this. There were over 20,000 specimens in the piece—from huge deep sea roaches (isopods), to oil stained shrimp with no eyes, to jars packed with tiny sea snails. It was really meant as a sketch, literally less than five percent of the biodiversity of the Gulf.

Empty containers represented species in decline as a result of the disaster; visually this was a way to frame absence and suggest the ecosystem collapse. The piece was made in collaboration with fellow biologists Todd Gardner, Jack Rudloe, and Peter Warny and with my former student artist Brian Schiering. It took us two years to gather data, Gulf specimens, and other samples.

The Gulf of Mexico is one of the most important and biologically diverse environments in the world. It literally is a nursery for thousands of marine species, and numerous endemic organisms inhabit these warm waters. Likewise Gulf seafood is an important source of food for millions of people in North America, and as marine species migrate following the Gulf Stream people throughout Europe rely on these fish for protein. As such, the DWH spill could not have occurred at a worse place, from an ecological

Love Motel for Insects: Anax Junius Variation (2012). 12' x 4' x 16'. Steel, fabric, native plants, invited insects.

Outdoor installation and Eco-Actions (public field-trips) with: black ultraviolet lights. Installed Central Park, New York, NY (fall 2013). Installed Smithsonian National Zoological Park, Washington, D.C. (summer 2012). Image courtesy the artist and Ronald Feldman Fine Arts, New York, NY.



occurred at a worse place, from an ecological and economic standpoint. British Petroleum claims all is well with Gulf ecosystems; however, we are still far from understanding the long-term impacts of the DWH disaster.

By generating discourse through the exhibition at Feldman Gallery I hoped we could raise attention for the need for continued research and coastal remediation. It is hard to say if this worked, but the show did receive considerable publicity in which the spill was discussed, dozens of petitions were signed and several politicians visited, including a senator from Florida. *Collapse* is currently on view in the "Beyond Earth Art" exhibition at the Herbert F. Johnson Museum of Art at Cornell University and will travel to the National Academy of the Sciences in Washington, D.C. this fall.

SAiA: What are you working on now artistically, and scientifically speaking, respectively?

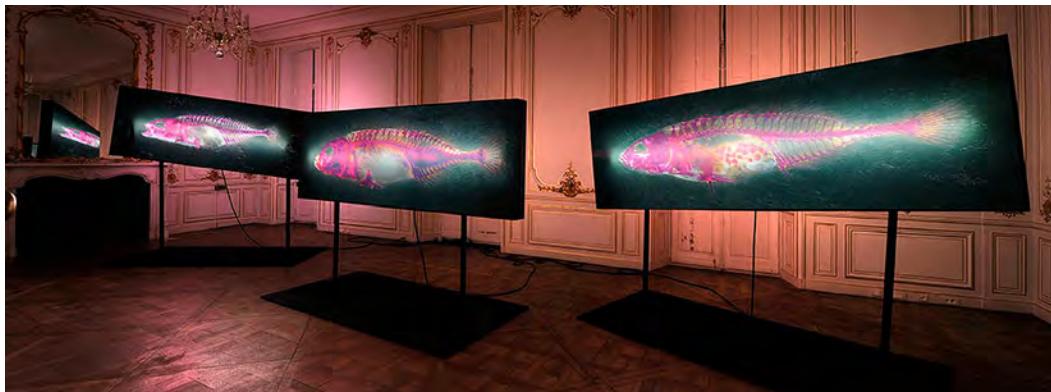
BB: In 2012, I began a new ongoing body of works called "Ti-tânes." This series pairs the portrayal of ancient animal species with the idea of the Greek mythological deities, the Titans. Symbolically, the series is meant to link such animals to archaic lingering nature deities surviving, banished, in now degraded environs. The complete series will consist of 12 finished works, in reference to the 12 historic Titans mentioned in Greek mythology. To date, I have completed three initial artworks, which depict ninespine stickleback fish. These were collected in polluted canals of Essonne, France, in 2012. This species, though ancient, appears to be thriving at least in part due to warming waters and their ability to survive in contaminated wetlands.

For the science side of things, my research into the occurrence rate and proximate cases for amphibian limb deformities in amphibians is ongoing. As part of my Ph.D. research I found that dragonfly nymphs can selectively predate (remove and eat) the limbs of tadpoles. Many tadpoles survive these attacks and at the time when they metamorphose into young anurans (frogs and toads) have permanent "missing limb" deformities. Stanley Sessions (one of my Ph.D. advisors and long-term collaborators) and I published these finding in 2009 in the *Journal of Experimental Zoology* and received considerable attention in the amphibian research community. We appear to have found a big piece of the deformed amphibian puzzle, but much more research is needed. Since this time I have continued my research into the predatory injury/deformed frog relationship as a Visiting Scientist at McGill University (Canada) with new studies in France, Ireland, Italy, and Slovenia.

SAiA: When and where is your next exhibition?

BB: I am really excited that the first career survey of my works, exhibited last summer at Château de Chamarande (France) under the name "Augures d'Innocence" will travel and be expanded at the Museum Het Domein in Sittard (the Netherlands). It will include additional works from my series "Seasons in Hell," new "Malamp Reliquaries," *Apparitions* (a new installation with historic taxidermy birds from the collection of the Natuurhistorisch Museum Maastricht), and the Museum Het Domein itself will be transformed into an amazing version of the "Love Motel for Insects." "Seasons in Hell," will open February 15th and be on view until June 28th, 2014.

Visit Ballengée's website at brandonballengee.com.



Ti-tânes (2012/2013). 8'x 4' x 36'. Duratrans prints on double-sided light boxes. Cleared and stained ninespine stickleback (*Pungitius pungitius*) photographed on coal. Photograph by Laurence Godart, image courtesy of the artist..

Installed at Château de Chamarande, Essonne, France. Summer 2013.

Eagen, Sarah Allen. "Frameworks of Absence: Brandon Ballengée in Conversation with Sarah Allen Eagen." *Art File Magazine*, April 9, 2014.
<http://www.artfilemagazine.com/article/v02/absence.php>

frameworks of absence



Brandon Ballengée in conversation with Sarah Allen Eagen

Tears of Ochún. 2012. Cleared and stained Grass shrimp (Palaemonetes species) collected in the Gulf of Mexico in fall 2012. Unique specimen as biological sculpture in a series of 500, examined as part a pilot study by the artist/biologist. Photograph by Laurence Godart.

by Sarah Allen Eagen

BRANDON BALLENGÉE IS A VISUAL ARTIST, BIOLOGIST, AND ENVIRONMENTAL ACTIVIST BASED IN NEW YORK. I FIRST MET HIM AT THE SCHOOL OF VISUAL ART'S NATURE AND TECHNOLOGY LAB. BRANDON WAS AN INSTRUCTOR AT THE BIOART SUMMER RESIDENCY PROGRAM THAT I WAS PARTICIPATING IN. HE HELPED TO INTRODUCE RESIDENTS TO BIOART – A TERM REFERRING TO INTERSECTING DOMAINS OF THE BIOLOGICAL SCIENCES AND THE PLASTIC ARTS – AND THE WAYS IT CAN PROMOTE AWARENESS OF HOW BIOMEDICAL SCIENCES ALTER SOCIAL, ETHICAL, AND CULTURAL VALUES IN SOCIETY. HE ALSO WALKED PARTICIPANTS THROUGH SCIENTIFIC PROCESSES (SUCH AS PRESERVING OCTOPI) THAT HELPED THEM REALIZE THEIR PROJECTS. BOTH BRILLIANT SCIENTIST AND ESTABLISHED ARTIST, HE WAS VERY GENEROUS WITH HIS TIME AND ENTHUSIASTIC ABOUT SHARING HIS EXPERTISE.



DFA 186: *Hadēs*, 46 x 34 inches, 2012. Unique digital-C print on watercolor paper. Cleared and stained Pacific tree frog collected in Aptos, California in scientific collaboration with Stanley K.

Eagen: Can you tell me about your research background and what inspired you to expand your work from the fields of biology and activism to art?

Ballengée: For me art and biology have always been connected. Growing up in rural Ohio I always drew and recorded animals. As a teenager, I had a full wetlab in my parents' basement to study and breed South American electric fishes and other aquatic species. Also during this time I made giant paintings in our barn turned art studio. So it has always been natural for me to understand the world through the lens of art and science. Likewise growing up with a love for nature gave me a strong desire for conservation.

My practice as a scientist informs and inspires my art. While conducting primary research biological studies scientific methods and standards are rigorously followed. The art is an expression derived from these research experiences. While making art, I work more intuitively and reflect on the science questions in a different, less objective way. This looking from a different viewpoint inspires new questions, experiments and more science. So the practices inform

one-another. However the results reach different audiences. Through science, I can achieve a better understanding of biological phenomenon and share the findings with the scientific community. Through art, I can reach audiences at different sensory levels. By seeing images or experiencing installations, viewers connect with organisms at an intimate, one to one level.

I also organize scientific field surveys open to the public called “Eco-Actions” where participants join in the sampling of aquatic species, observe wetlands and learn about the ecology of their backyards. Likewise I create wetlabs open to the public and encourage people to volunteer to aid in running experiments, collect data and make art about the experiences - so the process of science becomes transparent, participatory and reflective. In combination with my artworks, this forms my approach for ecosystem activism.

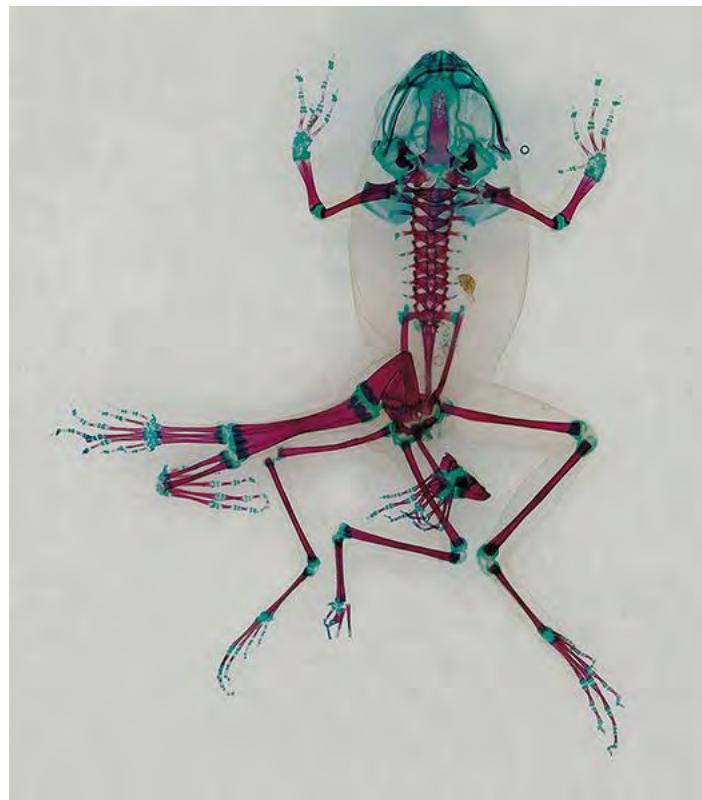


Styx: Variation III, 2008. Hasselt, Belgium. Mixed media installation with 9 cleared and stained Pacific treefrogs on sculptural light-box. In scientific collaboration with Stanley K. Sessions. Photograph by Kristof Vrancken

Your work is part of the field of “BioArt.” Can you explain what BioArt is, and how it blurs the lines between art and science?

Largely BioArt or Biological Art remains a nebulous term as the field is still emerging and defining itself. I define BioArt as works of art that involves working directly with living (biological) materials as media and incorporates living processes (growing, cellular mitosis, blooming, cloning, whole organism reproductions, healing) into the process of the art making. Such works must allow for molecular (genetic or cellular) or whole organisms responses to artist generated stimuli/manipulation/perturbation/environments. As such these works are open to a degree of chance/changes that occur post-artist involvement. Chance and change beyond the control of the artist is fundamental to BioArt.

The art to science/science to art cross-over is natural. Both are a means of making sense of the world around us and it is only recently that art and science have become so divided. Historically many scientists created art: Charles Darwin's grandfather Erasmus Darwin was a physician and poet; John Gould, John James Audubon, Alexander Wilson, Edward Lear were visual artists and early ornithologists; Ernst Haeckel described countless microbes through his beautiful drawings which informed his science; Leonardo da Vinci of course and many others. It is only recently (mostly after WWII) that academically restrictive boundaries between art and science have been so solidified. However these divisions appear to be eroding as there are numerous new academic initiatives involving the integration of art and science. It also very encouraging that several Bio/Eco-artists have made scientific discoveries resulting from their art practices, such as Helen and Newton Harrison, Tissue Culture and Art, Mel Chin, Cornelia Hesse-Honegger, myself and others.



DFA 18: *Triton*, 46.5 x 34.5 inches, 2001/07. Unique digital-C print on watercolor paper. Cleared and stained Pacific tree frog collected in Aptos, California. In scientific collaboration with Stanley K. Sessions. Title by the poet KuyDelair.

Your series *Malamp*: The Occurrence of Deformities in Amphibians depicts photographs of the bodies of terminally deformed frogs that have been chemically cleared and stained. Can you tell me about what inspired this project, and what the process behind these captivating images entails?

In the late 1980's, news started to come out about the global decline of amphibians and later malformation in their populations. I was immediately concerned and wanted to do something. So I began making art about them to get the message out and studying amphibian biology.

The Malamp artworks first started in 1996 with life-sized portraits of deformed frogs made from ash, coffee and polluted pond water where the animals were found on paper recycled from my old artworks. Between 1996 and 2000, I travelled extensively around North America conducting field studies and making these tiny portraits. Over time, these aesthetic choices evolved through trial and error, and today I respond to this issue artistically through the making of printed portraits or reliquaries of the individual deformed amphibians, sculptures involving actual specimens, videos, and participatory public field and laboratory studies.

The portraits, called *Malamp Reliquaries* (2001-current), are created from young frogs and toads found in nature with abnormalities so severe that they could not survive to adulthood. Predation and parasitic infection is natural among frogs, however my research and those of colleagues suggests these phenomena increases at wetlands impacted by environmental degradation. So it is nature made preternatural from human impact. My artwork attempts to give form to this idea as well as a presence to the lost deformed individuals.

The *Malamp Reliquaries* are high-resolution scanner photographs or chemically cleared and stained specimens. They are printed as unique watercolor ink prints (Iris) – so the color pallet is soft but rich, like a 19th century watercolor painting. In the artworks each individual frog is centered, appearing to “float” in what looks to be clouds or night skies. This otherworldly quality is reinforced by the titles named after Greco-Roman mythological characters. In the artworks, the frogs are scaled to appear approximately the size of a human toddler in an attempt to invoke empathy in the viewer instead of detachment or fear: if they are too small they will be dismissed, if they are too large they become monsters repelling viewers. Each finished artwork is unique and never editioned, to recall the individual animal and become a reliquary to a short-lived non-human life.



DFB 44: *Pandora*, 46 x 34 inches, 2013. Unique Iris print on Arches watercolor paper. Cleared and stained Pacific tree frog collected in Aptos, California in scientific collaboration with Stanley K. Sessions.

The process you use of chemically clearing and staining the bodies of these amphibians both obscures direct representation, and makes their developmental deformities more visible. The images are at once beautiful and disturbing. Can you talk about your decision to show them in this way?

Literally clearing and staining is a chemical process, which means staining bone and cartilage with brightly colored dyes while digesting surrounding tissues to transparency. The finished, chemically altered specimens look almost like x-rays, which enables a level of abstraction or distance yet simultaneously reveals the complex configuration of malformed development. Aesthetically, the colors of the dyed tissues are vibrant – very direct in contrast to the skin, which is semi-transparent and meant to look ephemeral. From the scientific standpoint, this enables a way to see subtle abnormalities in morphology, which could be easily missed prior to chemical treatments. From the artistic standpoint, the cleared and stained specimens are aesthetically compelling and show the delicate complex architectural anatomy of these tiny creatures.



Collapse, 12 x 15 x 15 feet, Installed at Herbert F. Johnson Museum of Art, Cornell University, Ithaca, NY, 2014. Mixed-media installation including 26,162 preserved specimens representing 370 species. Glass, Preffer and Carosafe preservative solutions. In collaboration with Todd Gardner, Jack Rudloe, Brian Schiering and Peter Warny. Photograph by David O. Brown.

Your collaborative installation *Collapse* presents the viewer with 370 species of fish and other aquatic animals in gallon jars. Some jars are left empty. Can you talk a bit about what this work is about, and what it took to put such a large-scale installation together?

The 2010 BP Deepwater Horizon (DWH) oil spill was the largest environmental disaster in the history of the United States. The installation *Collapse* responded to the unraveling of the Gulf of Mexico's food-chain following the spill and use of teratological dispersants used to "clean" the oil. Physically, "*Collapse*" was a pyramid display of hundreds of preserved fish, other aquatic organisms and DWH contaminants in gallon jars. It was meant to recall the fragile inter-trophic relationships between Gulf species, and the way the spill has altered this ecosystem.

There were over 26,000 individual specimens in *Collapse* – from huge deep sea roaches (isopods), to oil stained shrimp with no eyes, to jars packed with tiny sea snails- it was really meant as a sketch, literally less than 5% of the biodiversity of the Gulf. Empty containers represented species in decline as a result of the disaster – visually this was a way to frame absence and suggest the ecosystem collapse. British Petroleum claims that all is well with Gulf ecosystems, however, numerous species continue to show the devastating effects of the DWH disaster.

Collapse took more than two years to create and was made in collaboration with fellow biologists Todd Gardner, Jack Rudloe, and Peter Warny and with two former student artists Mike Madden and Brian Schiering. Together we worked to collect, identify and preserve the numerous specimens as well as keep up with research to make certain the piece reflected the reality of the Gulf environment. Numerous others helped in the Gulf states by sending specimens from their fishing catches, oil stained sediment samples and up to date data.

Currently, *Collapse* is on display at the [Johnson Museum of Art](#) at Cornell University through June 8 as part of the Beyond Earth Art exhibition. *Collapse* will travel to the [National Academy of the Sciences Gallery](#) in Washington DC this fall.



Touch of Light in the foggy Night that reverberates the Desire calls Death, Madness, Motionless...Voluptuousness rounded in an arch bombed... 85.5 x 70 inches, 2010/12. From series "Season in Hell". Unique digital Chromogenic print.
In scientific collaboration with Stanley K. Sessions with titles from a poem by KuyDelair.

Can you talk about the role of collaboration in your work?

In scientific research, collaboration is normal. However, in art, we are trained to work alone and express our individual ideas. Yet, since the 60's, artists have increasingly been working collaboratively with people from different professional backgrounds – scientists, engineers, farmers, software designers as well as with the public or groups of students. As such, collaborations can implement increased complexity of ideas in art projects. Instead of one author or one perspective, in genuine collaborative projects, people come from different skilled backgrounds and work through different models of approach. During the working process, natural blurring or overlaps occur between

disciplines - a kind of cross-pollination of knowledge and skills. Innovation happens precisely because participants approach problems differently and may express results in divergent ways.

When I first began the amphibian studies, most other researchers I contacted were open to collaborating. Some sent papers, some sent specimens, while with others, we just discussed ideas. In 1996, Peter Wainy (biologist with the New York State Museum) was the first to nudge me towards conducting quantifiable field-surveys. Within a couple of years, I was working on amphibian field-research for the North American Reporting Center for Amphibian Malformations (a former United States Geological Survey program). My findings were shared with the amphibian research community. As the projects have become larger and more members of the public have been involved, this sharing of collected data has continued. If enough quantifiable data is collected to suggest a phenomenon, it is shared with a larger-scientific community through publishing in peer-reviewed journals. Since 2009, I have been a visiting scientist at McGill University studying deformed amphibians with numerous collaborators.

Almost all of my art and science projects involve, to some degree, collaboration with other scientists, even sound artists, sometimes poets, sometimes other visual artists. As today's environmental problems are often large-scale and complex, we need creative people working together to look at issues from different angles, jointly problem-solve and find solutions.



Love Motel for Insects: Anax Junius Variation, 2 x 30 meters, summer 2012, Smithsonian National Zoological Park, Washington DC, USA. Outdoor installation and Eco-Actions (public field-trips) with: Black Ultra-violet lights, steel, fabric, native plants, invited insects. Photographs by Brandon Ballengée.

I am particularly fascinated with your on-going series of outdoor installations Love Motel for Insects. These works consist of ultraviolet lights on enormous canvases and are designed to construct situations between humans and nocturnal arthropods. This series started in 2001, how have these installations changed over time?

Love Motel for Insects is intended to construct situations between humans and nocturnal arthropods – a huge diverse group that most of us never see. The works use ultra-violet lights to attract, but not harm, insects. At each site, the bugs breed and create pheromone paintings. I invite people to come watch, collect data and explore this fascinating side of nature.

These works have become the backdrop for vibrant community events, such as picnics, graffiti jams, political rallies, scientific investigations, musical events, and even local film screenings relating to local species, and collaborating members of the public are invited to participate in activities they help to create.

This series of works began over a decade ago in Costa Rica when I placed bed sheets and a portable black-light on the jungle floor. Within an hour, hundreds of arthropods were attracted – moths, Hemipteras, beetles, caddisflies, mantids, and many more – so much diversity of colors, shapes, and sizes. The next night, I invited others to join in this insect watching and found they were just as interested as me.

Fascinated and inspired by this initial experience, I began creating black-light sculptures and public nocturnal field-trips around the world. Over time, the *Love Motel for Insects* has evolved from very minimal forms to shapes inspired by the insects themselves.

To date, the sculptures have appeared in New York's Central Park, on a boat in Venice, on bogs in Ireland, on isolated moors in Scotland, in a bustling Delhi shopping mall, in a Mexican desert, on a New Haven inner-city bus stop, on a London roof top, in Korean mountainsides, on Louisiana bayous. Currently, the entire [Museum Het Domein](#) in Sittard (Netherlands) is one enormous sculpture.



Dying Tree, Summer 2012. Domaine de Chamarande, France. Photograph by Laurence Godart.

Your project Dying Tree involved placing a dying tree into a museum and embedding highly sensitive microphones into the outer cellular layers. The sound of water evaporating from the layers of wood tissue was amplified. As the cells dried out and died, they gave a voice to a slow death that might otherwise go unnoticed. This is such a compelling idea. How did the audience react to this exhibit?

As humans, our individual sensory processes and ability to recall memories largely governs our perception of time. We view the world (nature, time, environment, other organisms) through an anthropomorphic lens. Yet what if we were confronted with the slow death of another species? How could this alter our perception of time and what living/dying/extinction means for our own species and others? These were among the questions that prompted *Dying Tree*.

Dying Tree was meant to be an audible ghost, allowing people to hear time through the slow death of a tree. The concept consisted of implanting highly sensitive transducers into the outer cellular layers of a terminally ill tree. The transductive microphones amplified the sound of water evaporating from the varied layers of wood tissue, as the cells dry as they are dying. The first experiment of this project debuted last summer at the Domaine de Chamarande in Essonne, France. Sadly, it is impossible to gauge what visitors received from this experience. I hope to create a larger longer term version of this project someday, for which the sounds are recorded over several decades.



Ti-tânes, 1 x 3 meters each, 2012/2013. Duratrans prints on double sided light-boxes. Photograph by Laurence Godart.

What is next for your work?

I am working on several projects including new *Frameworks of Absence* and continuing my *Ti-tânes* series. With the *Ti-tânesseries*, I aim to portray ancient animal species, which are able to survive (perhaps even thrive) in habitats environmentally impacted by human activity. Such organisms have endured millions of years and are now adapting to today's ecological degradation. Symbolically the series is meant to link such animals to archaic lingering nature deities surviving, banished, in now degraded environs. It also references time in the ecological sense through species who have existed for much longer, and perhaps will survive much longer, than our own.

My complete *Ti-tânes* series will consist of twelve finished works, in reference to the twelve historic Titans mentioned in Greek mythology. To date, I have completed three. These initial artworks depicted Nine-spine stickleback fish collected in the polluted canals of Essonne, France in 2012. This species, though ancient, appears to be thriving at least in part due to warming waters and their ability to survive in contaminated wetlands.

Though the actual fish were small (approximately 1.5 inches each), in order to create the mythical portraits, each image was printed on transparent film measuring at over 10 feet each in length. The films were then exhibited on double-sided freestanding light-boxes. As three-dimensional units, each portrait depicts the side views of each individual fish, as they are as unique as each of us. They are scaled so that the human viewer sees them at a magnitude beyond our ordinary bodily scale- grandiose and sublime like nature herself. Viewed as skeletons they are not meant to represent death but instead life persisting in ecosystems made preternatural by human activity.



Lough Boora Parklands, Ireland, 2010. Photograph by Kevin O'Dwyer.

BRANDON BALLENGÉE'S ART HAS BEEN EXHIBITED INTERNATIONALLY AND IN THE SUMMER OF 2013 THE FIRST CAREER SURVEY OF HIS WORK DEBUTED AT THE CHÂTEAU DE CHARAMARANDE IN ESSONNE (FRANCE), AND RECENTLY TRAVELED TO THE MUSEUM HET DOMEIN IN SITTARD (NETHERLANDS) IN 2014. RECENT SOLO EXHIBITIONS HAVE BEEN THE SCHUYLKILL CENTER FOR ENVIRONMENTAL EDUCATION (PHILADELPHIA, USA: 2013); RONALD FELDMAN FINE ARTS (NEW YORK CITY, USA: 2012); LONGUE VUE HOUSE AND GARDENS (NEW ORLEANS, USA; 2011); PAV, CENTRO D'ARTE CONTEMPORANEA (TURIN, ITALY: 2010); NOWHERE GALLERY (MILAN, ITALY: 2009); YORKSHIRE SCULPTURE PARK (WAKEFIELD, ENGLAND: 2008); CENTRAL PARK'S ARSENAL GALLERY (NEW YORK CITY, USA: 2007); PEABODY MUSEUM OF NATURAL HISTORY (YALE UNIVERSITY, NEW HAVEN, USA: 2007); AND OTHERS. HIS WORKS HAVE BEEN INCLUDED IN SEVERAL INTERNATIONAL BIENNALES AND FESTIVALS INCLUDING DOCUMENTA 13 (GERMANY: 2012); PROSPECT 2 NEW ORLEANS (USA: 2011); TRANSMEDIALE 11 (GERMANY: 2010); 3RD MOSCOW BIENNALE (RUSSIA: 2009); BIENNALE FOR ELECTRONIC ARTS PERTH (AUSTRALIA: 2007); VENICE BIENNALE (ITALY: 2005); GEUMGANG NATURE ART BIENNALE (SOUTH KOREA: 2004); AND OTHERS. IN 2011 HE WAS AWARDED A CONSERVATION LEADERSHIP FELLOWSHIP FROM THE NATIONAL AUDUBON SOCIETY'S TOGETHERGREEN PROGRAM (USA). SEE MORE OF HIS WORK AT BRANDONBALLENGEE.COM.

Eco-Art and the Battle of Invisible Evidence

by Leila Nadir



Brandon Ballengée et al., video still from "Dedicated" (2012), photographs and illustrations by Gulf Coast participants (photo by Varvara Mikushkina, all images courtesy Ronald Feldman Fine Arts unless otherwise noted)

When BP's Deepwater Horizon drilling rig exploded in April 2010, an estimated 172 million gallons of oil poured into the Gulf of Mexico, creating the worst petroleum-industry spill in US history. The stories and images of crude oil reaching the coastlines of the Gulf States were appalling — pelicans mired in grease, local fishermen devastated, ocean water slick with oil, ecological systems threatened. But that mess is fixed now, all cleaned up by BP. The oceans are clear. Swimming is safe. And we can all happily gobble down as much Louisiana gumbo as we desire.

"BP had a federally approved Gulf of Mexico spill response plan that explained what it would do for walruses and sea lions — creatures that don't live in the Gulf of Mexico."

This is what BP would have you believe. With television advertisements broadcasted across the US, especially the South, the corporation propagates this myth with a soundtrack of soothing acoustic guitars. The ads reassure viewers that threats to wildlife, seafood and tourism have been solved: "BP is taking full responsibility for cleaning up the spill ... We'll be here as long as it takes to get things right."

In his exhibition *Collapse: The Cry of Silent Forms* at Ronald Feldman Gallery, artist and biologist Brandon Ballengée tells another story. Many of the pieces in the show work to interrupt BP's propaganda campaign, often with an emphasis on animals. Ballengée's video series Committed contrasts BP's ads with the vast scientific research he has collected with the help of other artists and activists. News tickers scroll at the top and bottom of the advertisements, rebutting BP's claims. For example, as a BP-hired wildlife expert speaks about the corporation's effective remediation strategies for local birds and fish, Committed exposes the reality behind the rhetoric, citing statements such as this one from a biology journal: "BP

had a federally approved Gulf of Mexico spill response plan that explained what it would do for walruses and sea lions — creatures that don't live in the Gulf of Mexico."



Brandon Ballengée, video still from "Committed" (2012), BP advertisements with running text in rebuttal (image by the author for Hyperallergic, click to enlarge)

So much data refutes BP's propaganda that Ballengée has made available, on the [Ronald Feldman Gallery website](#), a 435-page appendix to *Committed* — yes, 435 pages — of all the information he has accumulated. He also uploaded the *Committed* videos to YouTube, in order to disseminate his response to BP's flooding of our screens and imaginations with misinformation, but the videos mysteriously disappeared without explanation. This act of silent censorship shows how environmental exploitation extends into other spaces not usually thought of as ecological. BP's private degradation of land redoubles with the private cooptation of public discourse. Since the *Committed* videos violate the rules of many video-hosting sites, Ballengée and I (we met when we spoke together on a panel at Cornell University a few years ago) arranged to have them hosted on a mutual friend's personal site: <http://restlessculture.net/video/>. They are fascinating to watch. This rebuttal effect should happen with all advertisements!

Listening to the claims of BP authorities claims while reading Ballengée's continual rebuttals makes it clear that there is a battle going on between the visible and the invisible, between what BP wants to hide at the bottom of the ocean and what activists, artists and scientists need to bring to the surface. Environmental problems are usually problems of invisibility; it's often impossible to perceive the effects of toxic chemicals, the slight seasonal shifts caused by climate change or the ways in which fracking upstate affects New York City water. Many eco-artists begin their work by inventing ways to visualize industrial causes and their ecological effects.

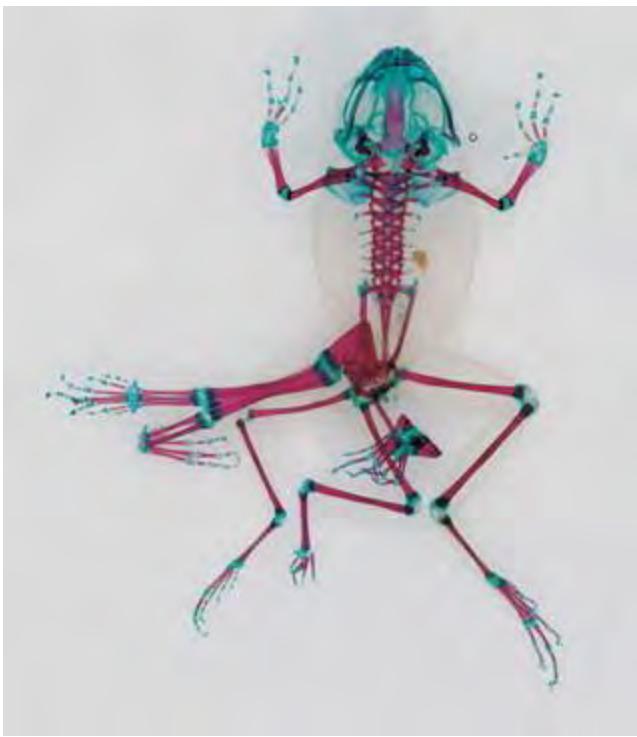


Brandon Ballengée et. al., "Collapse" (2012), mixed-media installation including 26,162 preserved specimens representing 370 species, glass, Preffer and Carosafe preservative solutions (photo by Varvara Mikushkina)

Ballengée's *Dedicated*, a series of images collected from Gulf Coast residents and presented on a screen in slide-show fashion, demonstrates that science is not the only way to make these connections. Everyday stories from nonexperts can form a sort of database of collective evidence. Contributions to *Dedicated* depict the consequences of BP's fateful decision to "disperse" the spilled oil with Corexit, a chemical that has not been approved for widespread use, let alone for mixing into the ocean. To get rid of the visible problem, the oil, BP released two million gallons of a possibly even worse, though invisible, chemical into the Gulf Coast. The *Dedicated* collection includes everything from local artists' paintings to photographs of genetic abnormalities in wildlife and disturbing encounters in everyday life — all from the people who live in places effected by the spill and the Corexit used to disperse it, and who are seeing their environment dying around them.

"Eco-artists are often faced with a difficult situation: they must portray upsetting material without alienating their audiences, invoke ecological sympathies without scaring anyone off."

The most poignant image for me was a photo of children jumping in waves while dolphins lay dead nearby in the sand, most likely poisoned by the dispersant chemicals. The picture raised a question that has always preoccupied me: How have the connections between humans, wildlife and the environment become so unthinkable? For too many people, it is impossible to imagine that the now clean-looking beaches are actually deadly, that what killed the dolphin could also harm human children. Stories like these and the images in the exhibition are, again, just a snapshot of another large appendix of data accumulated by Ballengée about the long-term effects of Corexit on the Gulf Coast, also available for download from the Ronald Feldman Gallery website.



Brandon Ballengée et al., "DFA 18, Triton" (2001/07), scanner photograph of cleared and stained multi-limbed Pacific Tree frog from Aptos, California, unique digital chromogenic print on watercolor paper (click to enlarge)

Much of Ballengée's art is about uncovering the trail of invisible evidence about the state of our environment, whether it was concealed deliberately by BP or is simply undetectable because nature often works in ways not perceivable to the naked eye. The ongoing project *Malamp Reliquaries* displays a series of chromogenic prints of terminally deformed, cleared and stained frogs. Their deformities are caused by trematodes, naturally occurring parasites whose numbers have increased because of a string of anthropogenic environmental changes. From his research, Ballengée understands the trematodes to be thriving due to the excess nutrients of fertilizers, which spur algae growth, which in turn supports an increased population of aquatic snails. The snails act as hosts to the parasites, creating an abundant habitat for the out-of-control growth of the trematodes ailing frog and toad populations. According to Ballengée, recent evidence also suggests that the immune systems of tadpoles may be compromised in some way, making them unable to fight the parasites. The tiny frogs in *Malamp Reliquaries* are our way into this nearly invisible chain of events. They are the observable symptoms of ecological systems at risk, a small clue to the worldwide disease of ecological destruction.

Ballengée explained to me that timing is crucial: He collects the specimens during the brief period when tadpoles leave water and head for shore. That is when you are able to find all the young frogs too crippled to move on land. The prints are individual — there are no series — so every frog remains unique, a relic left behind. Ballengée names each frog and scans it on a background of cotton, which he said creates the effect of clouds. The sight is ethereal; the portraits form a collective obituary, a goodbye.

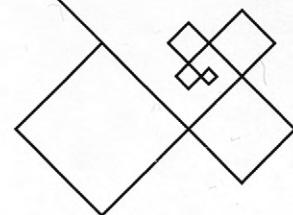
A friend and fellow eco-artist visited *Collapse* with me, and after talking with Ballengée, we both left Ronald Feldman Gallery preoccupied with the aesthetics of portraying what can only be called environmental horrors. Eco-artists are often faced with a difficult situation: they must portray upsetting material without alienating their audiences, invoke ecological sympathies without scaring anyone off. Ballengée's decision to print his thumbnail-sized frogs at about the size of a human toddler reflects his awareness of this dilemma. Any bigger, he said, and the frogs appear monstrous, inspiring fear; any smaller and they become dismissible. The size of a young child, he hopes, will inspire compassion in viewers. Perhaps, then, seemingly little aesthetic decisions can make big statements, and the collapse won't happen without anyone noticing the invisible signs.

Weintraub, Linda. "EnvironMentalities - Archetype: Brandon Ballengée." *EnvironMentalities: Twenty-Two Approaches to Eco-Art*. Rhinebeck, NY: ArtNow Publications - Avant Guardians, 2007. pp. 23 - 27.

EnvironMentalities

TWENTY-TWO APPROACHES
TO ECO-ART

LINDA WEINTRAUB
with SKIP SCHUCKMANN



AVANT-GUARDIANS
TEXTLETS ON ART AND ECOLOGY

ARTNOW PUBLICATIONS

Brandon Ballengée

Born 1974 Sandusky, Ohio

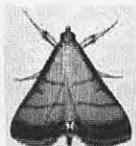
Brandon Ballengée is an artist who seems obsessed with spineless sex. He has created *Love Motels for Insects* in Asia, Europe, and the Americas, with upcoming variations in Australia and Israel. Viewers may be disappointed that his motel settings lack heart-shaped beds and mirrored ceilings. The hedonist paradises created by Ballengée appeal to arthropod eroticism. Instead of dimming the lights, Ballengée turns the lights on to full voltage, because lights turn the insects on to full sexual arousal. Insects can't resist the glaring ultraviolet lights he installs, along with bed sheets, in these outdoor sculptures. While the insects are courting, and copulating, he is counting insect species and tabulating their diversity. Ballengée is not only a laborious voyeur. He is a methodical Cataloguer.

Entomologists have not figured out how the ocular structure of some insects' eyes enables them to perceive ultraviolet light, or why UV light is so irresistible to them, but Ballengée eagerly exploits these attractions. When the installations are first set up out of doors, they function as pick-up bars for cruising arthropods. But the sculptures quickly become transformed into steamy sex clubs after the first insects arrive, become sexually aroused, and saturate the sheets with pheromones. This sexy perfume entices and excites newcomers. As more insects convene, more pheromones are released and the sculptures become an aphrodisiac paradise. Raucous, all-night insect orgies ensue.

The human perspective on this scene is far less sexy. Ballengée's project involves the collection, identification, phylogenetic examination, and photography of as many arthropod species as possible. Digital prints of individual insects comprise large wall installations for gallery displays of the data he collects and catalogues. The images are arranged to present the evolutionary relationships among the species. Individual prints are separated into families, families into genera, and genera into species. The resulting wall works document the complex interconnections among insect life-forms. Generally, each print is identified by date, location, and time, while each insect is identified by its Latin name and its name in the local language.

The full title of the series is *Arthropod Diversity Study Units AKA Love Motels for Insects*. Ballengée explains, "This series of works began in Central America in 2001 as an investigative reaction to the intense arthropod diversity found within tropical rainforests. Attempting to attract insects, I set up primitive structures made from black (ultra-violet) lights and bed-sheets placed in the forest floor. Within moments, hundreds of flying visitors came to the piece: fluttering moths, blood-sucking hemipteras, clunky beetles, delicate caddis flies, ants, lacewings, and many more. The diversity of colors, shapes, and sizes was fantastic! Female moths released chemical pheromones to attract mates and consequently 'painted' the piece. Beetles hungrily humped one upon the other while releasing vibrant colored eggs and primordial fluids. I found I had staged a kind of arthropod rite of Bacchus. On the second night, spiders and their predacious kin began to visit. They laboriously decorated the sculpture with their own form of geometric abstraction. Attracted to movement, other predators, such as tarantulas, mantids, scorpions, bats, and amphibians followed. I counted, photographed, recorded predator/prey

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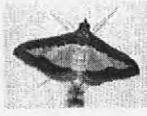
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relationships, created a biotic index, and attempted to identify each species that interacted with the sculptures.”⁽²⁾

Ballengée reveals his status as an archetypal Cataloguer when he states, “I like to show as many insects as possible, not just the sexy ones or the aesthetically interesting ones. Some day I would like to show thousands of the photographs of insects from all over the world and cluster them according to continents so people can see the similarities and the variations.”⁽³⁾ The difficult part of this project is not finding the insects. Insects are in the soil beneath our feet, in the air above our heads, on and in the bodies of the plants and animals around us, and on and in us. The challenge involves managing the abundance. *Love Motels* can attract between four and five thousand insects each night. Ballengée estimates that over the course of his career he has documented more than 12,000 different species of insect. But his goal of representing insect diversity is far from achieved. His accomplishment is a tiny percent of the approximately 700,000 insect species that are named and classified, and the 30 million insect species that may actually exist.⁽⁴⁾ Arthropods outnumber all other forms of life combined. They constitute 80 percent of animal diversity on the planet.

It is rare for humans to encourage insects to reproduce. Most encounters with arthropods involve swatting, zapping, stomping, spraying, or trapping. In fact, UV lights are used to lure insects into electrocution chambers, not to facilitate breeding. The

(2) Telephone interview with the artist, July 20, 2005.

(3) Ibid.

(4) “Selective Memory,” www.free-soil.org/algae/ “[_blank](#)”

word "insect" conjures disagreeable images of termites gnawing on houses, cockroaches fouling food in kitchen cabinets, ants invading picnics, lice infesting hair, spiders biting flesh, beetles devouring flowers, mosquitoes carrying West Nile viruses, and moth larvae feasting on heirloom textiles. These associations explain the terms "Don't 'pester' me" and "Stop 'bugging' me".

Ballengée introduces the public to the emotion-free, fact-bound views that typify Cataloguers.

His respectful attentiveness reveals the significance of insects in maintaining a living planet by pollinating, decomposing, aerating soil, etc. As the renowned Harvard biologist E. O. Wilson once wrote, "So important are insects and other land-dwelling arthropods that if all were to disappear, humanity probably could not last more than a few months."⁽⁵⁾ Ballengée also conveys the fact that an increasing number of insect species are appearing on the Red List of Threatened Species.⁽⁶⁾ That is why he exhibits photographic records, rather than collecting live specimens.

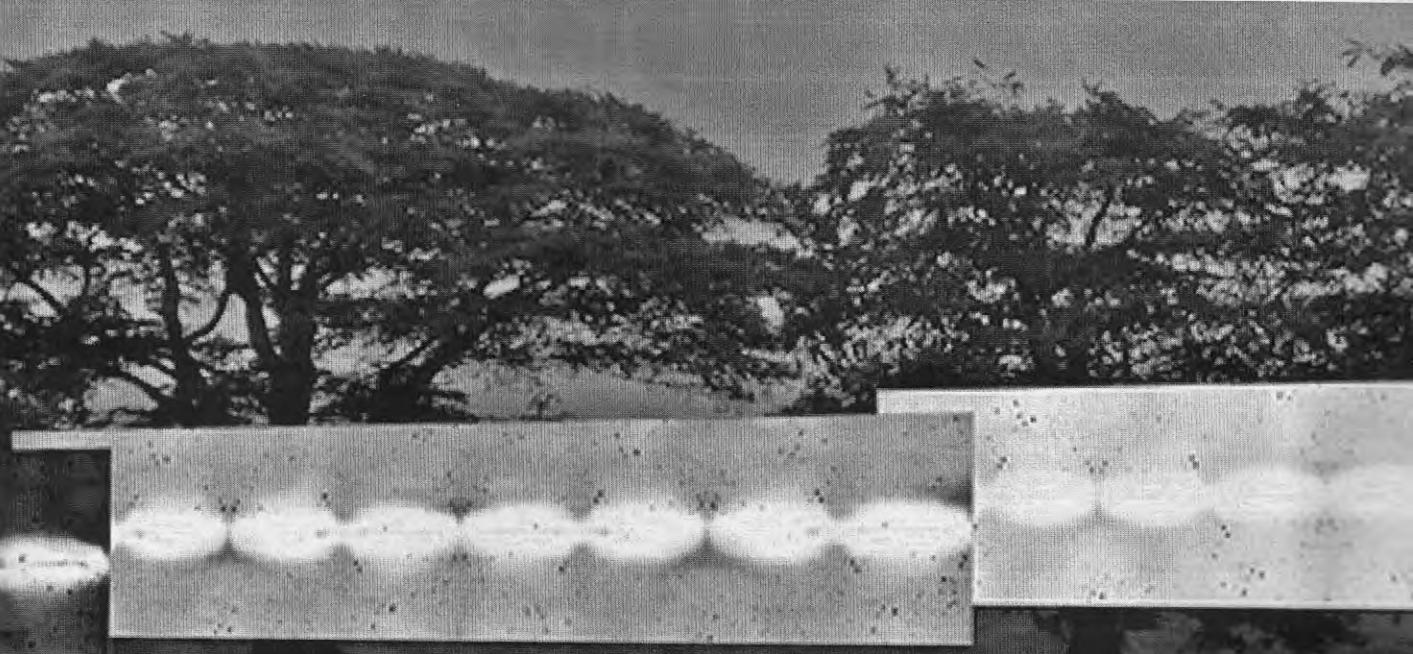
Pilot programs around the country are utilizing citizen-monitoring programs to augment the collection of scientific data. Ballengée supports these initiatives. He refers to his works as "social sculptures," because he is intent on attracting humans as well as insects. Part of each project includes organizing public field trips, mounting public installations, and inviting the public to participate by photographing the insects. He comments, "Insects have short life spans. Most only live a few days. The public can see the fantastic evolutionary drama of the life cycle played out. This is not possible ordinarily, considering our typical life and our idea of time. It is an epic."⁽⁷⁾

(5) Ibid.

(6) The International Union for the Conservation of Nature and Natural Resources Red List of Threatened Species included 623 insect species in 2006. www.xerces.org/pubs_merch/articles/Encyclopedia%20article.pdf

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(7) Telephone interview with the artist, July 20, 2005.

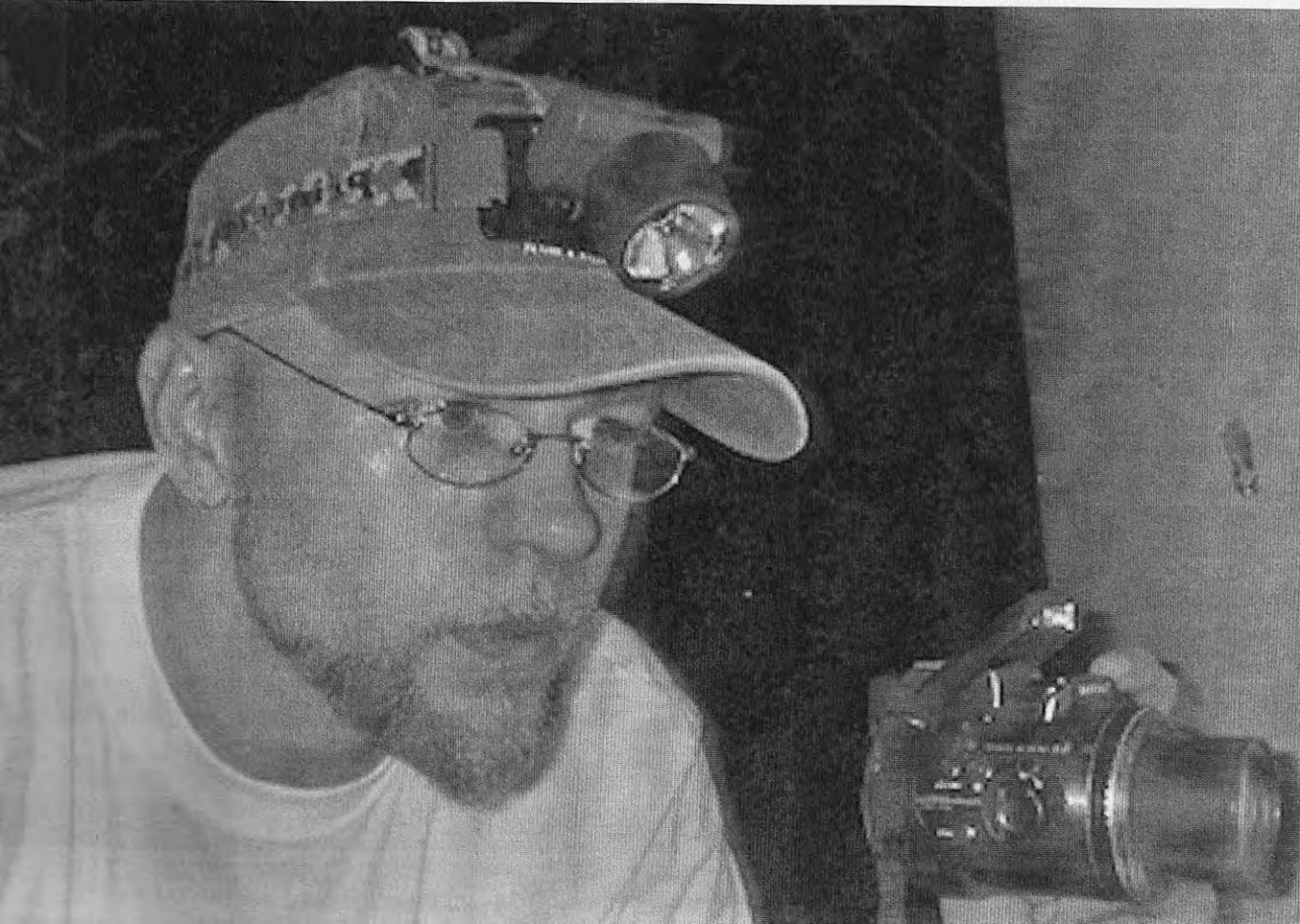


Ballengée straddles the categories of science and art. He and his participants gather scientifically rigorous information about insect life cycles, populations, seasonality, predators, and so forth. Furthermore, almost every time Ballengée constructs a *Love Motel*, he uncovers some previously unidentified species. "For those that are new discoveries, I provide the genus. If that can't be known, I provide the family. If that is uncertain, I identify the order."⁽⁸⁾ His work is reported in science journals and presented in science institutions. But his photographs and prints are also reviewed in art publications and exhibited in art galleries, where they are pinned up in the manner of laboratory specimens to emphasize the scientific rigor of this art practice. Identifications and relationships between species, not aesthetics, determine the arrangement.

In an expansion of cataloguing endeavors, Ballengée undertook Species Reclamation via a *Non-Linear Genetic Timeline* (1999 and ongoing). The work is a bold attempt to repopulate a vacancy on the listings of amphibian populations. Ballanegée is trying to recreate an aquatic Congo frog (*Hymenochirus curtipes*) that succumbed to the slashing-and-burning of its forest habitat. Ballengée explains, "By controlled pairing of related species and/or subspecies, I hope to generate an *H. curtipes* model by literally breeding backwards."⁽⁹⁾ This work suggests that humans might cause species extinctions, but human effort might also reverse this regrettable trend.

(8) Ibid.

(9) "Paradise Now: Picturing the Genetic Revolution," www.genomicart.org/ballengee



Postscript: Besides enumerating and organizing, through his art practice, the enormous number of species that have survived, Ballengée discovered a distressing number that are endangered. The Ever Changing Tide: The Ecological Dynamics of the Earth's Oceans as Exemplified through the Biodiversity of the Queens Seafood Markets (2000-2001) presents the remarkable diversity of fish populations; however, it does not commemorate their vitality because many of the marine species being offered for sale are threatened by overfishing, global climate change, and the introduction of competitive non-native species.

Another artist who engages in cataloguing as his creative art practice is Mark Dion. Unlike Ballengée, Dion reverses the association of diversity with threatened species. Roundup: An Entomological Endeavor for the Smart Museum of Art (2000) highlighted the resilience of organisms that survive and reproduce despite human efforts to banish them. Dion tabulated insects and microscopic life forms that thrive in the pristine and sanitized interior of this prominent art museum. Roundup is an installation that resembles a scientific laboratory, where Dion actually catalogued and exhibited the tiny insidious specimens that had escaped attempts to eliminate them.

Finally, Free Soil, an art collective, conducted two parallel cataloguing projects dealing with the Baltic Sea since the end of World War II. They organized their data by separating those events that documented environmental conditions from those that recorded human activities. They drew no conclusions of their own, but by placing the archives side by side, relationships emerged that might otherwise not be noted. Members Nis Rømer and Joni Taylor explain Selective Memory (2005), "We created an alternative archive of political and historical events that have occurred in the Baltic Sea region . . . and linked these with the sea's responses."⁽¹⁰⁾ They noted, for example, that 2,350 tons of oil spilled after a collision between two carriers; the Swedish military's decision to halt the use of propellers by ships to avoid disturbing the contaminated sediment that lay on the sea floor; and the spread of toxic blue-green algae. The data were derived from high tech means such as satellite images and remote sensing, video material, interviews, digital images, online research, and data from an oceanographic institute. The workspace at the 2005 Garage Festival served as the point of contact for visitors, with drawings, maps, and a website on display. These parallel catalogues reveal that "the impacts of industrialization, population growth, and political changes have resulted in climatic and environmental changes recorded in the sea."⁽¹¹⁾

(10) "Selective Memory,"
www.free-soil.org/algae/

(11) Ibid.