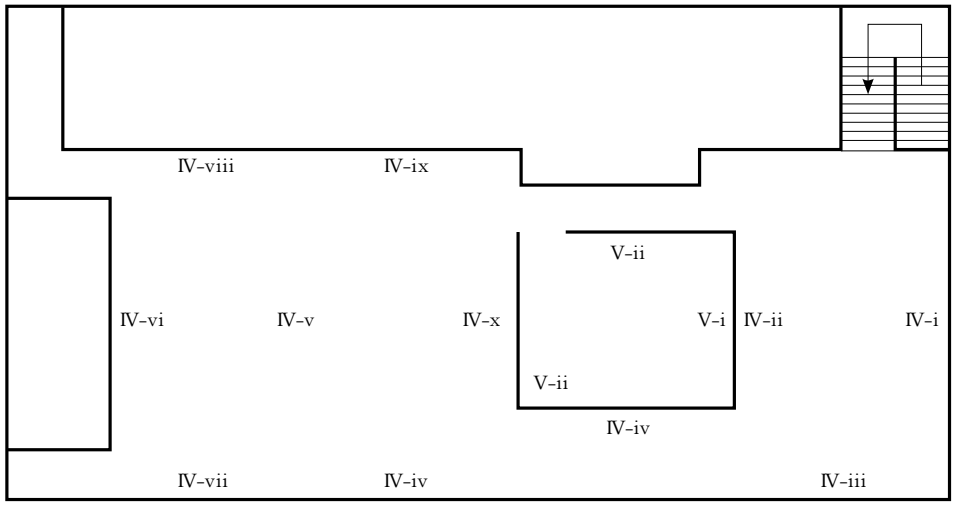
Una cuestión de encuadre (A Matter of Framing)

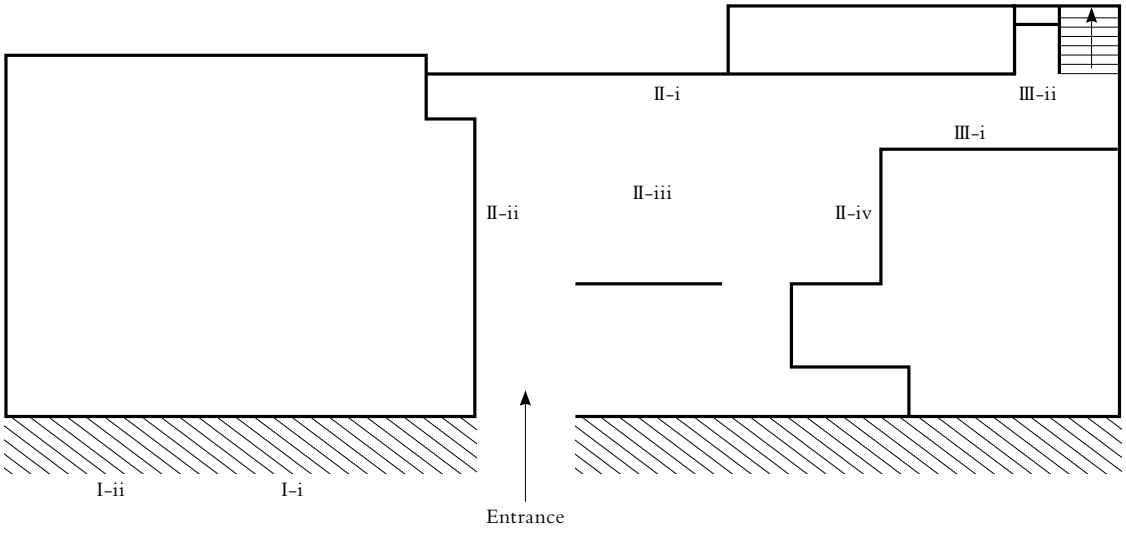
MAC Panamá (Panama)
September 2024 – January 2025

Una cuestión de encuadre
at MAC Panamá

Upstairs



Downstairs



I Garden
i *Appropriations*
Device for studying nocturnal vision in bees
ii *Appropriations*
Leaf litter traps

II Downstairs
Workstation Panama. A Matter of Framing, 2024
i *Una cuestión de encuadre (A Matter of Framing),* 2012–2024
ii *Experimental Drawings*, 2024
iii Workstation
iv Series of publications and Timeline

III Corridor
i Series of prints, 2024
ii *Porites lobata*

IV Upstairs
i *Mangroves*, 2015
ii *Roots Underwater*, 2015
iii *Barro Colorado Watercolours / Fungi*, 2024
iv *Lianas*, 2014
v *Astronomical Twilight*, 2024
vi *Crab Pellets*, 2024
vii *Intertidal Experiments*, 2016
viii *Invasive Species*, 2014
ix *Underwater Drawings / Coibita Coral Studies*, 2024
x *Leaf Litter Traps*, 2012

V Process Room
i Video documentation
ii Field tests

A Matter of Framing was the result of two long-term collaborations. One goes back to 2012, when I began working with the Smithsonian Tropical Research Institute (STRI) in Panama, a world-renowned organisation that studies the biodiversity of tropical ecosystems, both forest and marine. I have maintained and developed our partnership ever since. The other collaboration was with Juan Canela, the Chief Curator of the Museum of Contemporary Art of Panama (MAC Panamá) and the Artistic Director of ZsONAMACO Mexico City, someone I worked with for several years on a number of projects.

The exhibition at MAC Panamá brought together a body of work made over 12 years and presented jointly for the first time. It also included a range of materials from my working process: a series of posters documenting key moments in the field, a collection of my publications, and a short documentary by Panamanian filmmaker Ana Endara that provided insight into my work methods. The exhibition also featured a workstation designed as an open experimental laboratory. Visitors were invited to engage with materials, devices, and scientific tools, as well as with my own creative processes. In the museum garden, we also installed some of the experimental equipment used by scientists in the field. A few such tools and devices I employed in my work, the others were of less direct relationship yet nonetheless relevant for the project.

By way of context, in 2012 I was awarded a Smithsonian Artist Research Fellowship (SARF). My proposal was to spend time at STRI's research facilities to gain a deeper understanding of the subjects and methods used in fieldwork. During my stay, I was guided by Stuart J. Davies, William Wcislo, and Owen McMillan. It was during that time that I created the *Leaf Litter Trap* series in the river town of Gamboa and met many of my future colleagues.

Following that collaboration, I continued setting up and pursuing several projects with different laboratories and ecosystems. In 2014, I returned to STRI to work on several new ideas. I developed the *Lianas* series in collaboration with the Schnitzer Lab at Barro Colorado Island (BCI), the *Crab Pellets* series in collaboration with John Christy at Punta Culebra, and the *Invasive Species* series in collaboration with the Torchin Lab at Naos Marine and Molecular Laboratories. During that time, I also met Andrew Altieri and visited the Bocas del Toro Research Station to explore the possibilities of working with mangroves. The following year, I made the *Mangroves* and *Roots Underwater* series in collaboration with the Altieri Lab.

In 2016, I returned to work on the *Intertidal Experiments* series in collaboration with the Altieri Lab at Punta Culebra. During that stay, I also completed my *Fossil's Stories* series in collaboration with the O'Dea Lab at Naos Marine and Molecular Laboratories.

These works featured independently in different exhibitions such as *Entanglement* at Kunst Halle Sankt Gallen (Switzerland) in 2013, *Entanglement · Vertical Landscape* at the 8th Berlin Biennale 2014 (Germany), and *Underwater Workstation* at DiabloRosso Gallery, Panama in 2016.

In 2021, when Juan Canela became the chief curator at MAC Panamá, we started a conversation about an exhibition that would reunite all the series I had made, which would also feature new works that I would develop with that exhibition in mind.

A few years later, having made other projects in different ecosystems around the world, I returned to Panama in 2024 to work on *Astronomical Twilight* in collaboration with William Wcislo. In that series, I attempted to capture the change in light in the forest canopy through drawings made at dusk and dawn. I also created *Barro Colorado Watercolours/Fungi* in collaboration with Erin Spear on Barro Colorado Island (BCI), which explored the role of fungi in accelerating plant death and decomposition, and *Underwater Drawings/Coibita Coral Studies* in collaboration with Matthieu Leray on Coibita Island. Around the same time, I was awarded the first artistic Research Associate (RA) status at STRI, having been nominated by Erin Spear, for the period of 3 years. A STRI RA is someone who has demonstrated the qualities of superior achievement expected of an established and independent research scientist. It has thus far been unprecedented that a practitioner from a field outside of science would be awarded such status.

In essence, the exhibition at MAC Panamá was the significant step in my ongoing project within the Panamanian ecosystem and STRI as the organisation, something I am going to continue over the coming years.

I Garden

I-i
Appropriations
Device for studying nocturnal vision in bees

Most bees are sun-loving creatures with an extraordinary fondness for flowers, which they visit to collect pollen and nectar that they carry to their nests as food for their young. In tropical forests some bees evolved to fly in the dark when the world seems black and white, because colour vision requires a lot of light to see. Smithsonian scientists have worked for years to understand how nocturnal bees see their world. This acrylic box is used in a study to assess whether bees are able to perceive colour in the dark, by training them to associate a colour with the location of their nest, which is affixed to the back of the box.

I-ii
Appropriations
Leaf litter traps

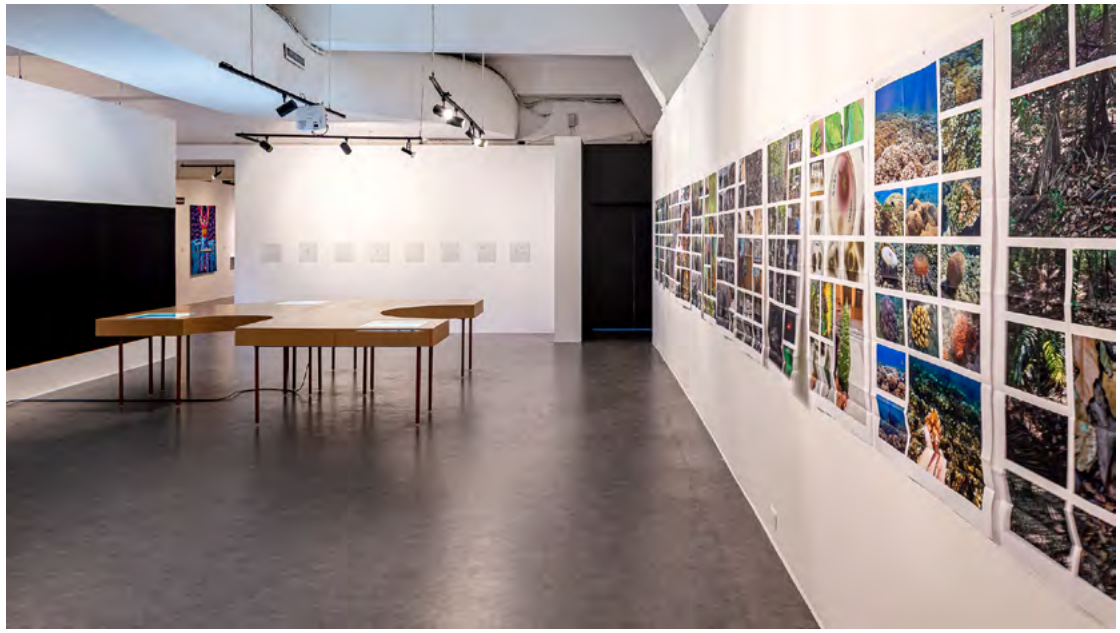
Leaf litter traps are essential devices in ecological studies, used to assess the dynamics of decomposition and nutrient cycles in terrestrial ecosystems. They consist of a PVC tube structure that holds a fine mesh or net, designed to collect dead plant material falling from nearby trees and plants, such as leaves, flowers, fruits, branches, and even seeds.

These devices allow researchers to measure the amount and type of organic matter reaching the ground, providing key information about nutrient recycling processes, the primary production of ecosystems, and the impact of climatic or seasonal factors on litterfall. Analysing this material also facilitates studies on the microbial biodiversity responsible for its decomposition and enables comparisons of productivity between different types of vegetation.

Leaf litter traps are installed in strategic areas during specific periods, as the rate of plant material fall varies throughout the year. The data collected help monitor ecosystem health and provide insights into how climate change or human intervention affect the natural cycles of forests and other vegetated environments.

II Downstairs

II
Workstation Panama.
A Matter of Framing, 2024



As part of my exhibition, I created a lab-like workspace so that the public could get familiar with my creative process and add their own work to the display. Together with Johann Wolfschoon, founder of Sketch, a multidisciplinary architectural and design studio in Panama we designed and fabricated a specially shaped wooden table and placed it in the centre of the gallery space. The table had three embedded display slots which contained organic samples such as coral fossils from the O'Dea Lab, fungi cultures from the Disease Ecology Across Tropical Habitats Lab, as well as various fish species from the Symbiosis & Resilience laboratories led by Matthieu Leray in the technique called diaphonisation. Also known as clearing and staining, diaphonisation is used to make animal specimens transparent so that their internal structures (e.g. fishbones) can be observed. The table served as a working platform bringing the organic samples closer to the process of visualisation, that is live art making sessions in which audiences could test different techniques and approaches.

Some of my own related drawings were hung on one of the gallery walls. Those works were meant as 'learning devices'—a range of designs and experiments so that the visitors could gain yet another, mediated through hand-made imagery, understanding of the subjects I had been focusing on. We had facilitators run regular workshops for schools, families, and other age groups. There were also instructions for self-guided activities for regular MAC audiences should they wish to experience hands-on learning by drawing. Another gallery wall was painted black to display the drawings made by the workshops participants and the general public. There were also posters designed as 'process images', that is photographs I took out in the field over the years (landscapes, lab instruments, scientists at work), one poster per each project I created at STRI since 2012.

In the adjoining garden, we showed actual scientific instruments and other equipment tools on loan from STRI.

II-i
Una cuestión de encuadre (A Matter of Framing),
2012–2024
13 ColorWave prints on 80g/m^2 uncoated paper
841 × 1189 mm (A0) each

I–ii
Experimental Drawings, 2024
series of 9
pencil on paper
30 × 30 cm each

En el aperno vemos un instrumento que se usa en campo para observar la unión de un grupo de abejas que son especies de ver en horas crepusculares.

lo que se intenta saber es si estas abejas van color para lo que se colocan discos con valores de grises

Hay uno de esos grises que equivale al azul? cual es?

la teoría de los valores es muy importante para dibujar y pintar

Técnica sugerida: collage cortar círculos de colores y grises establecer conexiones

En estudios de ecología una de las técnicas para hacer estudios del dosel arbóreo son las trampas de hojarasca

para los artistas la variedad de formas y texturas es también muy importante.

En el jardín de MAC tenemos instaladas varias trampas.

Recolectaremos material que haya caído en ellas, lo llevaremos a la sala, observaremos y trabajaremos en torno a ellas

nos concentraremos en buscar variedad de formas y texturas

técnica sugerida: frottage, grabado

los insectos ven de una manera diferente a los humanos

un equipo de científicos en STRI intenta descubrir a qué distancia y ángulo un determinado grupo de abejas puede ver. Para esto utilizan un diseño experimental parecido al que tenemos aquí

las cuestiones de percepción son muy importantes también para los artistas

Entonces vamos a hacer una experiencia al respecto:

Tenemos impresos unos discos con rayas de distintos anchos en la pared de la sala de MAC.

Vamos a elegir uno de los discos y dibujarlo primero de lejos y luego cada vez desde más cerca.

Técnica sugerida: lápices de colores

lo que vemos aquí es una hoja en la cual se ha desarrollado un hongo

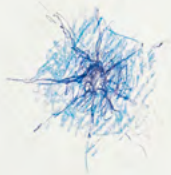
- imaginaremos la relación entre este hongo y lo que vemos en las petri en nuestra mesa en MAC

- actividad: vamos a buscar en el patio de mac alrededores hojas con hongos
- vamos a llevar las hojas a la sala
- vamos a observar y tratar de entender a través del color que ha pasado con estas hojas
- vamos a dibujar las hojas

material sugerido: lápices de colores

- el equipo va a mostrarnos un esquema de las posibles formas, elevaciones y márgenes de las colonias - empezar por observar los ejemplares que tenemos en las petri en nuestra mesa

- lo que vemos en este dibujo es la forma y margen de una colonia fúngica



vamos a imaginarnos y dibujar de donde sale esta forma, cómo creció y cómo se seguirá desarrollando

vamos a imaginar el proceso

- técnica superior acuarela

tenemos bolsas de sedimentos
tenemos tamices

la primera parte de la actividad consiste en tamizar la muestra arriba de una bandeja, el polvo caerá y descubriremos maravillas, como ser conchas, algas, corales, erizos

algas coralinas

tesoros aún muy pequeños

Algunas de estas apenas visibles,

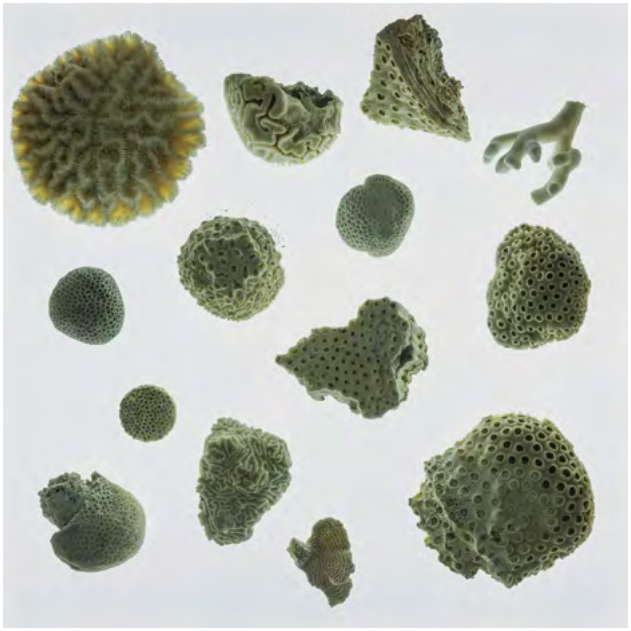
y otros algo más grandes.

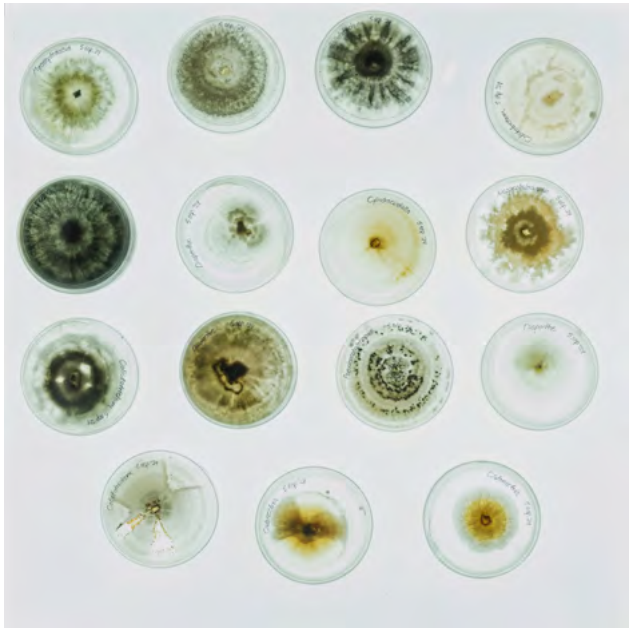
lo primero que haremos es observar con lupas o microscopios.

seleccionaremos lo que más nos interese para dibujar y nos concentraremos en ello

técnica superior: lapiz pastel sobre papel

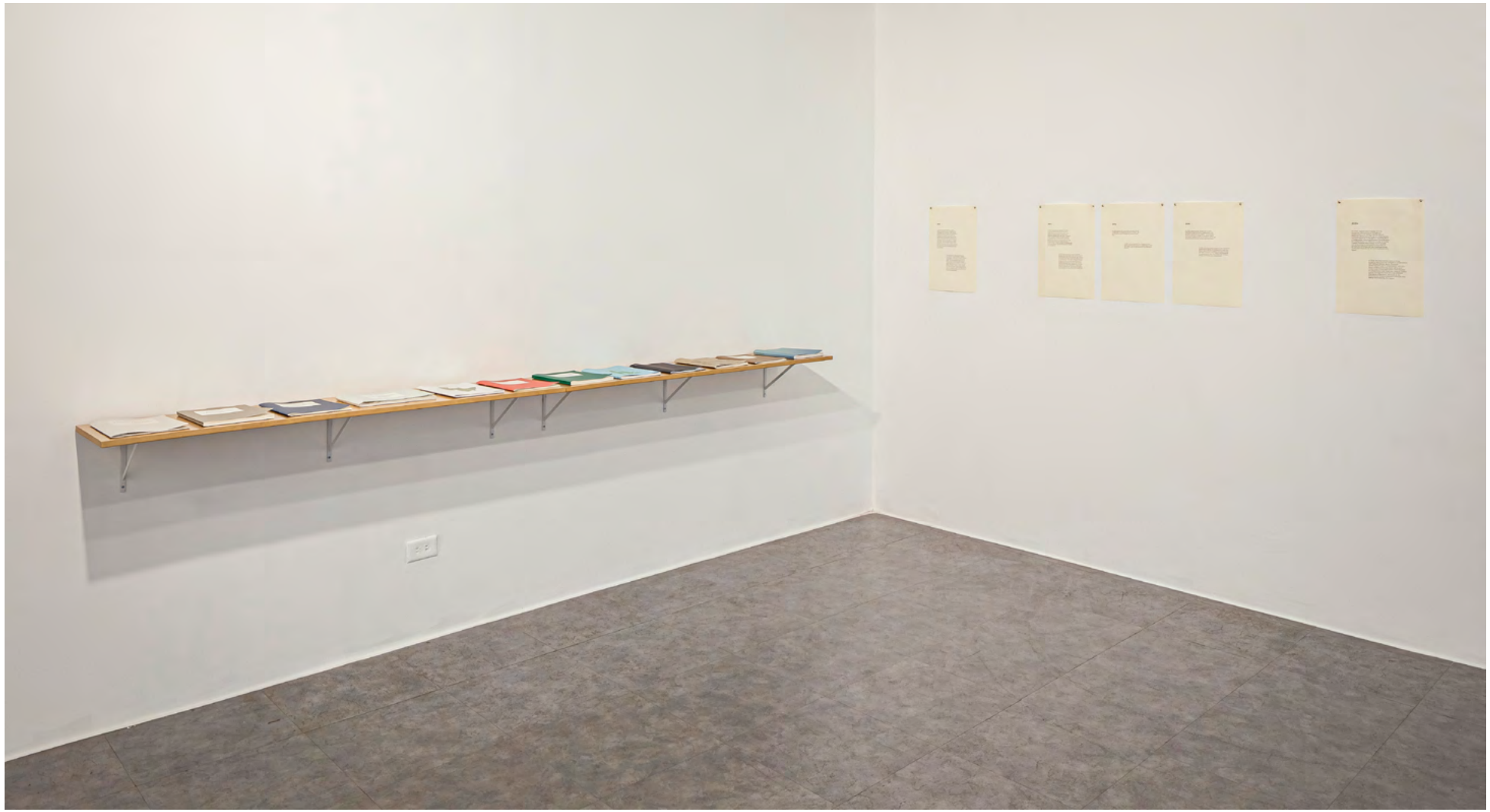
II-iii
Workstation





II–iv
Series of publications by the artist
Notes on Representation Vol. 1–12
published by Roma Publications

Timeline of the collaboration
with STRI



III Corridor

III-i
series of 6 prints, 2012
etching and aquatint
50 × 65 cm (64 × 81 cm framed) each

III-ii
Porites lobata
Massive coral head collected on Clipperton Island, Pacific Ocean, in May 1998.
Courtesy of O'Dea Lab en Smithsonian Tropical Research Institute in Panama (STRI)

This coral head is of the *Porites lobata* species, known for its longevity and large size. The specimen on display here has lived longer than the nation of Panama itself, highlighting the amazing resilience of these marine organisms. It comes from Clipperton Island, a remote coral atoll in the eastern Pacific, which serves as a unique habitat for diverse marine life.


IV Upstairs
i
iii
ii

IV-i
Mangroves, 2015
series of 16
pencil on paper
30 × 42 cm (36.5 × 48.5 cm framed) each

The series explores the exceptional ecosystem and the intricate structure of mangrove roots. I find these roots fascinating because of their architectural complexity, which not only challenges visual perception, but also the understanding of those who observe them. The research for this series started in 2014, when I collaborated with Andrew Altieri (Altieri Lab), who guided me in understanding the geography and distribution of mangroves in the region. I chose the Punta Caracol Chica creek, where the view from the boat offered the perfect distance for drawings. A year later, I returned to the creek to continue the project.

The mangroves presented a vast web that expands in multiple directions, which led me to confront a series of fundamental questions about composition: Which parts to draw? How to approach perspective and proximity? The solution to these challenges emerged through direct observation from the creek, where I could tie the boat to a root and study the opposite side from an optimal distance. The series was developed through a system of daily drawing, starting from the last navigable part of the stream and moving back twenty meters each day, capturing the understandable architectural structure of the roots, leaving aside the parts that escaped my understanding.

This series was also featured in
Entanglement · Vertical Landscape, 2014 ↗

IV-ii
Roots Underwater, 2015
series of 6
watercolour on paper
40 × 30 cm (46 × 36 cm framed) each

This series was made at the Bocas del Toro Research Station in 2014. The collaboration with Andrew Altieri, director of the Altieri Lab and STRI scientist, guided me in understanding the geography and distribution of mangroves in the region. The Altieri Lab examines the ecology of human-dominated coastal ecosystems. The land-sea interface is a rich and productive area that provides benefits to human well-being. However, it is changing at an accelerating rate due to factors including overfishing, climate change, pollution, and threats to biodiversity and habitat.

The work focuses on the complex structure of the mangrove roots submerged in the water, including the various organisms that are part of its ecosystem. The depiction of sponges embedded in the submerged roots captures the interaction between these two elements of the mangrove ecosystem.

This series was also featured in *Underwater Workstation*, 2016 ↗

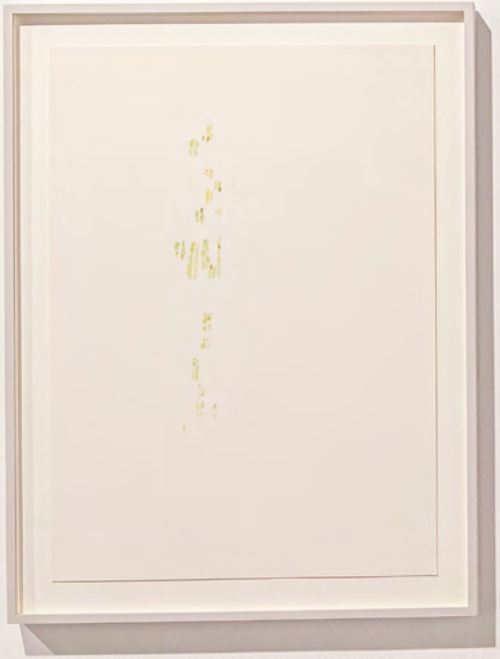
IV-iii
Barro Colorado Watercolours / Fungi, 2024
series of 13
watercolour on paper

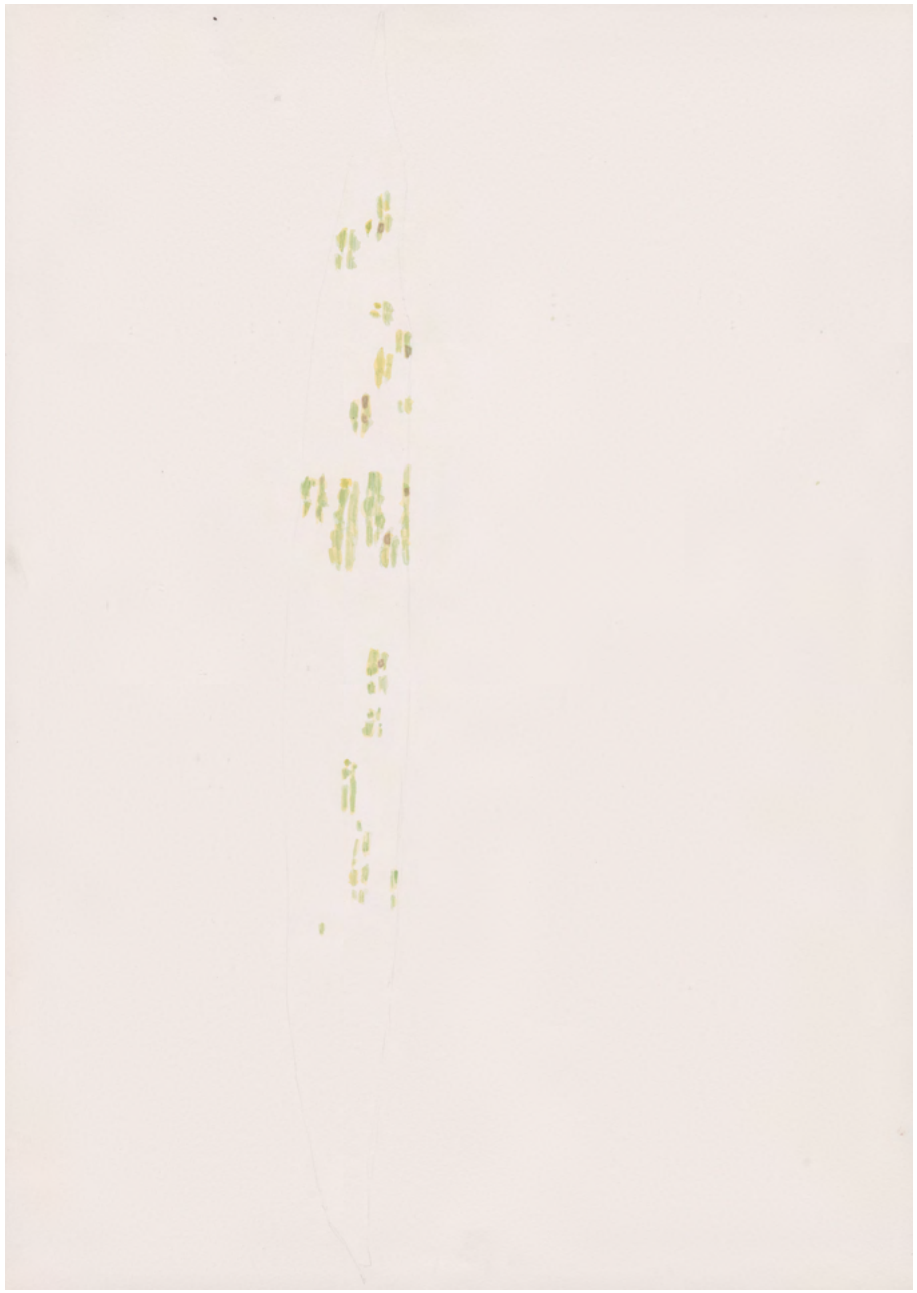
7 works of 26 × 36 cm (34 × 44 cm framed) each
2 works of 36 × 51 cm (44 × 59 cm framed) each
1 work of 15 × 30 cm (23 × 38 cm framed)
1 work of 31 × 41 cm (39 × 49 cm framed)
2 works of 10 × 25 cm (18 × 33 cm framed) each

In 2024, I spent the month of February on Barro Colorado Island, in the Arcadia rainforest. I worked alongside STRI researcher Erin Spear (Disease Ecology Across Tropical Habitats Lab) on a project exploring the role of microbes in accelerating plant death and decomposition.

I collected leaves that had been colonised by fungi, attracted by the visual patterns these organisms created on plant surfaces. At the Barro Colorado research station, I transformed these observations into meticulously detailed watercolours, respecting the 1:1 scale. This commitment to the original dimensions of the leaves gives the series a variety of sizes, reflecting the natural differences between each leaf and its decomposition process.







process


iii
iv
ii

IV-iv
Lianas, 2014
series of 20
pencil on paper
21 × 29 cm (29 × 37.5 cm framed) each

I created *Lianas* after a meeting with Stefan Schnitzer (Schnitzer Lab), a researcher at STRI and Professor of Ecology at Marquette University, Wisconsin. Schnitzer's lab is dedicated to studying the forces that structure plant communities in tropical rainforests, with a particular focus on vines.

In this series, I focused exclusively on the lianas on Barro Colorado Island, visually extracting them from the intricate jungle ecosystem. The work reflects the complexity of these climbing plants, which twine and snake through the trees in search of light. Drawing vines in their natural environment requires filtering the gaze, a challenge that involves decoding an environment full of knots, angles, curves and tensions.

Each drawing was based on a process of pre-visualisation, where I mentally imagined the vines as graphic forms before putting them on paper. This approach allowed me to capture the essence of the vines in their natural context, revealing both their interaction with the environment and the forces that influence their growth.

This series was also featured in
Entanglement · Vertical Landscape, 2014 ↗


iv
vi
v
iv


vi
v
viii
ix


vii
v
vi

IV-v
Astronomical Twilight, 2024
series of 45 polyptychs
(135 drawings and paintings)
ink on paper and acrylic on canvas
20 × 20 cm each

In the Arcadia rainforest of Barro Colorado Island, I focused on capturing the essence of the forest canopy through a series of drawings. I took a painstaking approach, sitting in the same spot each day at two specific times: just after sunset, when light levels decrease rapidly, and before sunrise, when light increases again. My goal was to capture the subtle changes in perception of the canopy as the light varied, exploring how these changes influence my vision and understanding of the environment.

Once more I collaborated with William Wcislo (Evolution Behavior and Neurobiology Lab), a STRI researcher who specialises in the night vision of honeybees. While Wcislo and his team studied how these bees perceive light during periods of twilight, I ran my own visual experiment. Through drawing, I tried to capture the light transitions and their impact on the perception of the canopy by observing and depicting the same forest window each day.

4 February
AM

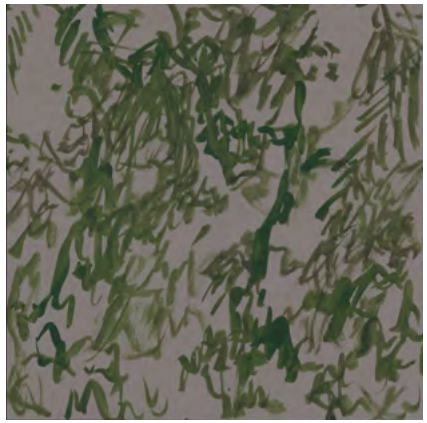
4 February
PM

5 February
AM

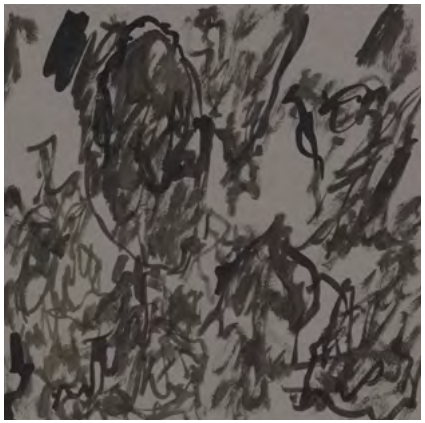
5 February
PM

10 February
AM

10 February
PM

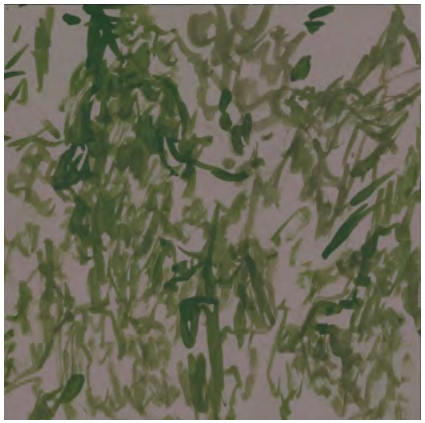
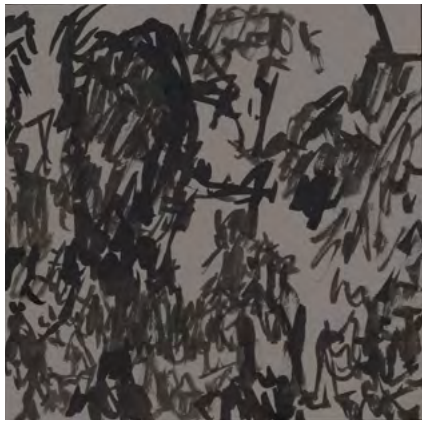


11 February
AM



11 February
PM



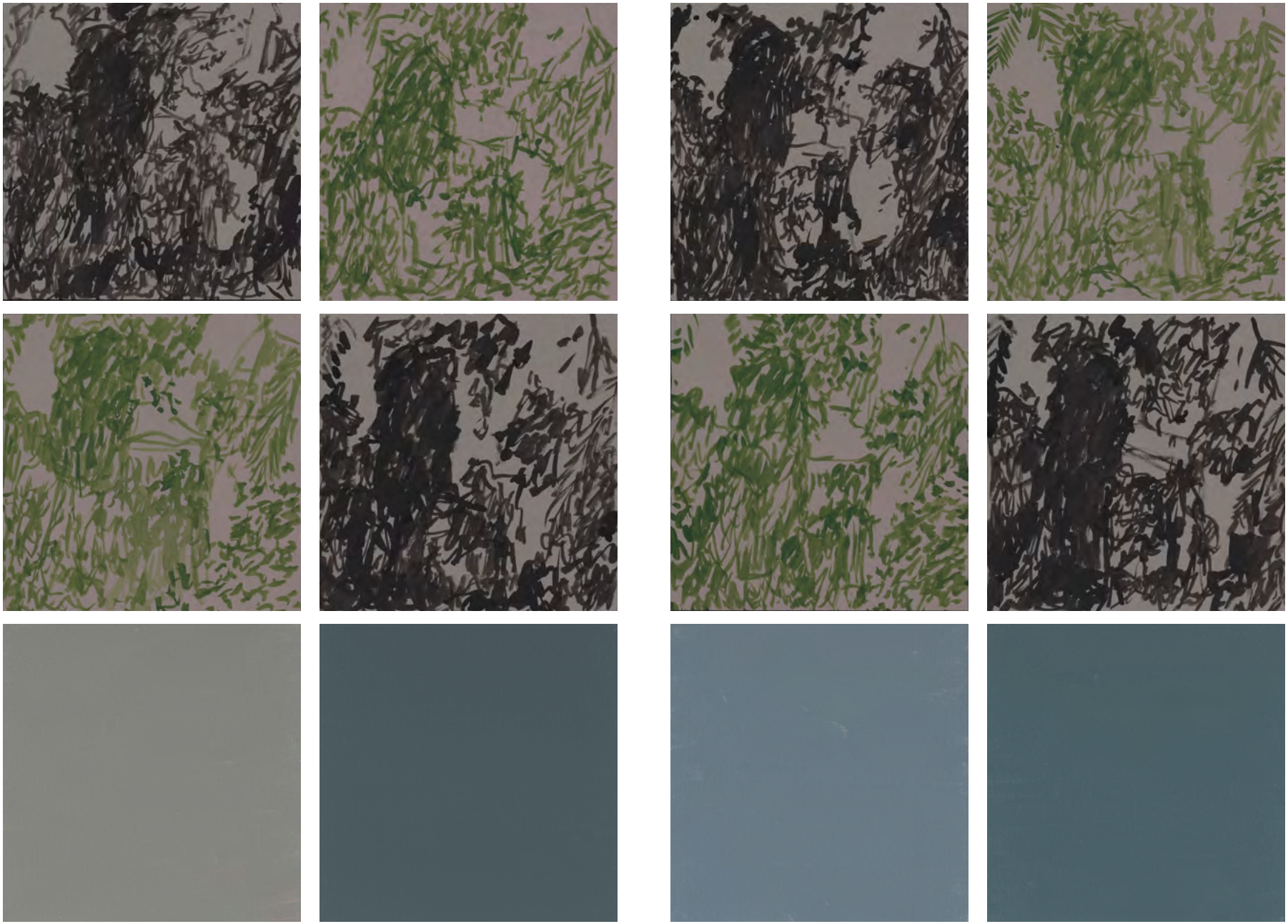


18 February
AM

18 February
PM

19 February
AM

19 February
PM



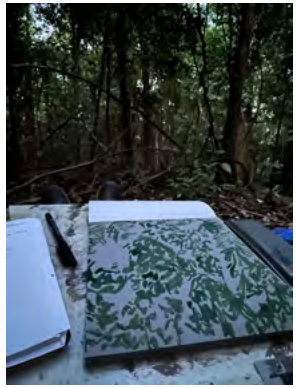
1 March
AM

1 March
PM

2 March
AM

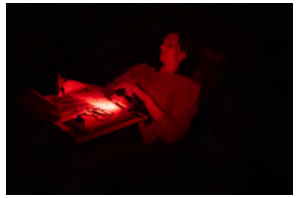
2 March
PM

process



29 February
PM

process



29 February
PM

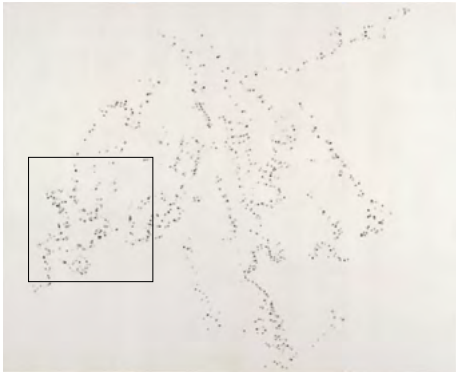
IV-vi
Crab Pellets, 2024
series of 2
acrylic on fabric
205 × 250 cm each

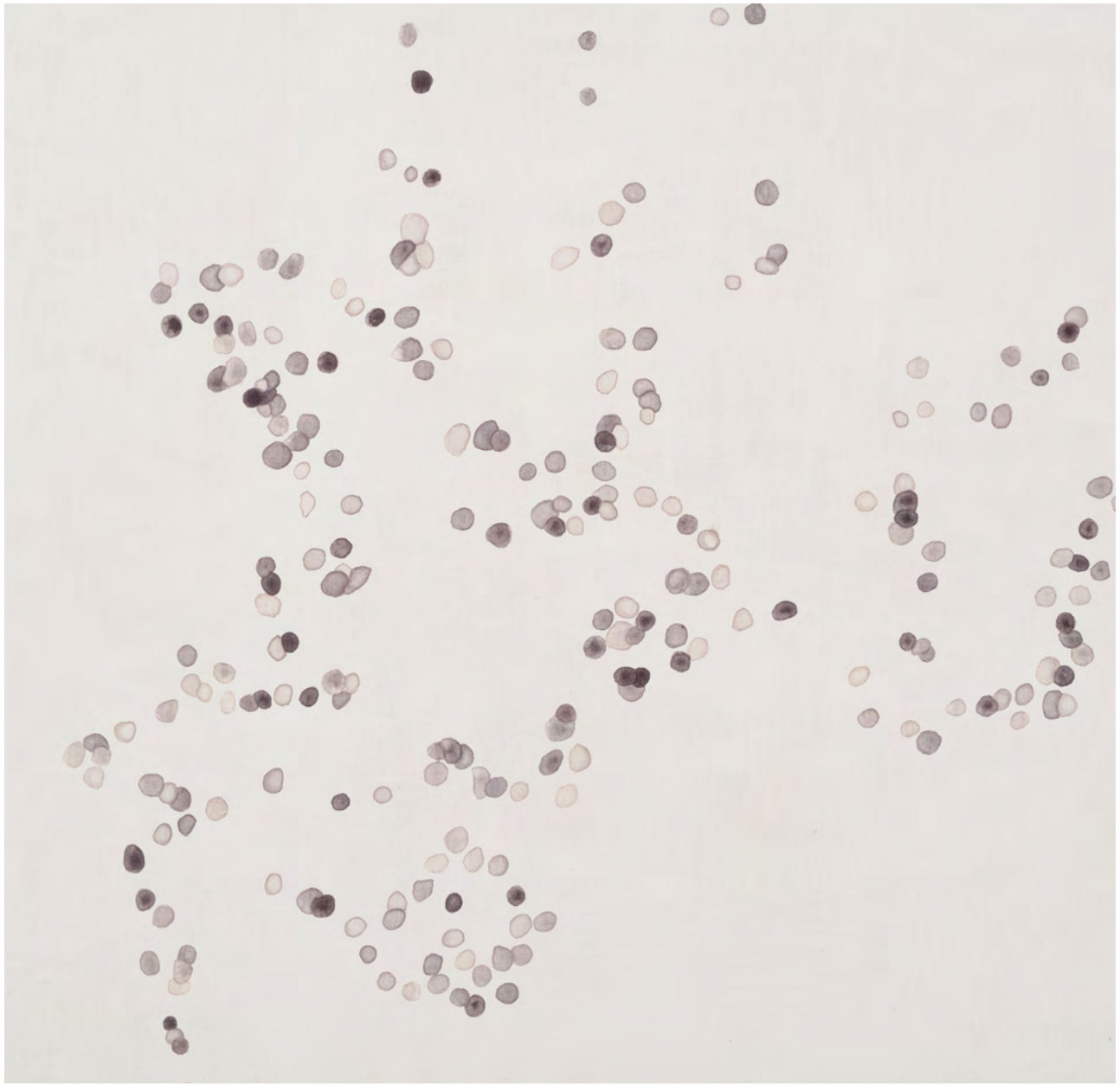
Crab Pellets was inspired by a key encounter with John H. Christy (Marine Behavioral Lab), a biologist at STRI, during a fieldwork session at Punta Culebra in 2012. As I observed fiddler crabs there, I was captivated by the patterns that these crustaceans produced while searching for food. These consisted of small spheres of sand or food debris that trace the path to their burrow. The patterns form particular, and idiosyncratic, compositions on the beach. As Christy describes, "each species [of crab] moves differently, each individual of each species moves uniquely, and the same individual will never move in exactly the same way as it did the last time it searched for food."

This fascinating behaviour became the focus of a series of works I first developed in 2014. It documented ephemeral patterns through watercolours made at different times of the day over a one-month period, following the tidal calendar. During low tide, I had a three-hour window to capture the designs before the ocean erased them, leaving a blank canvas for new creations the next day. Aside from factors such as weather and tide, I faced the challenge of defining the scale, the size of the paper, and the distance from which to observe and draw the designs the crabs made. A decade later, in 2024, I made a series of paintings based on these drawings, continuing my exploration of the patterns and the behaviours of the crabs in the sand.

The drawing series of *Crab Pellets* was featured in *Entanglement · Vertical Landscape*, 2014 ↗

details

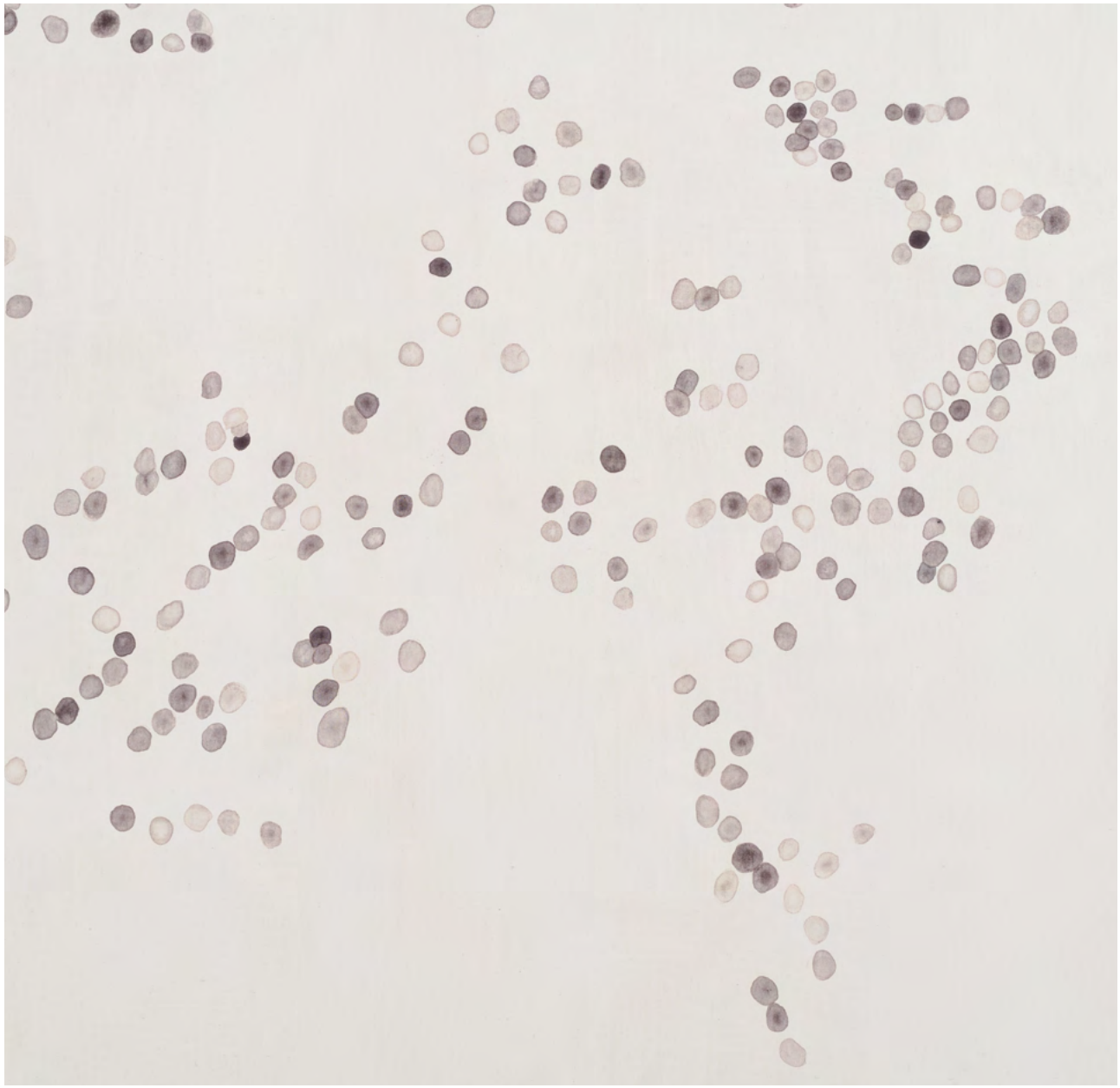




details

details

details




ix
x
iv
v


x
iv
v
vii


iv
v
vii


viii
v
ix

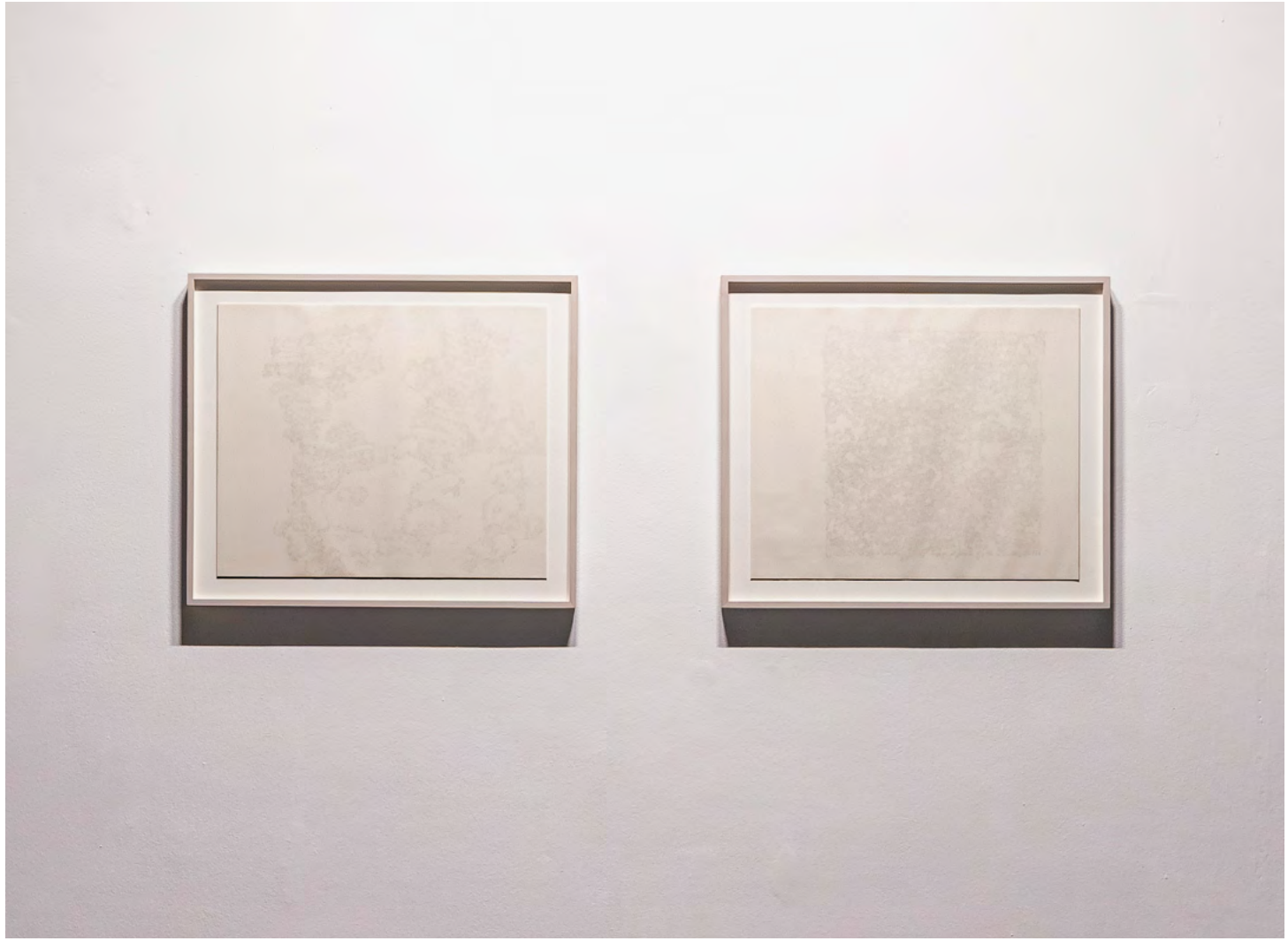
IV-vii
Intertidal Experiments, 2016
series of 4
pencil on paper
30 × 40 cm (38 × 47.5 cm framed) each

I documented a series of scientific experiments run in the marine environment of Punta Culebra over three years by Andrew Altieri, head of the Altieri Lab at STRI. The experimental plots, approximately 30 × 30 cm, were attached to rocks and designed to observe how different environmental variables influence the colonisation of marine organisms.

I focused on capturing the patterns formed by organisms such as barnacles and molluscs growing within these experimental plots. Working directly on site, I faced the challenge of adapting my creative process to the demands of the natural environment, as access to the working area depended on the tides. This gave me a limited time window of four to five hours a day, which varied daily with the tidal cycle, having to synchronise my work with the natural rhythms. The series reflects the interaction between the environmental factors and marine life, revealing the complex patterns of growth that emerge under different conditions of light and protection.

This series was also featured in
Underwater Workstation, 2016 ↗

IV-viii
Invasive Species, 2014
series of 2
pencil on paper
35.5 × 43 cm (43.5 × 51 cm framed) each



The work is inspired by the stories told by scientists at STRI about the problem of marine species introduced through the Panama Canal. These species arrive attached to the hulls of ships or transported in ballast water, crossing from the Atlantic Ocean to the Pacific and vice versa, which has generated a significant biological exchange.

Fascinated by this phenomenon since my first visit to STRI, I decided to explore it further during my next stay in 2014. Under the direction of Mark Torchin (Torchin Lab), who leads a study about introduced marine species, I analysed samples of marine organisms attached to settlement panels strategically placed in different areas around the Canal. These panels simulate natural substrates and allow us to observe the biodiversity and dynamics of invasive species.

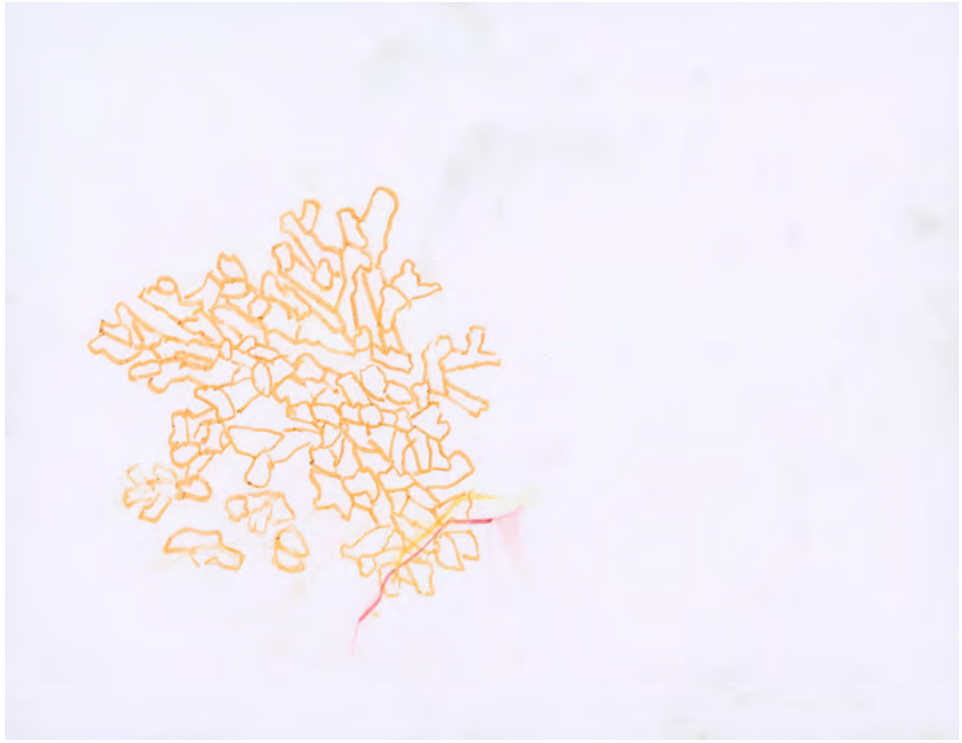
The drawings depict in detail the marine invertebrate communities collected on the panels, showing the complexity and diversity of the organisms that are studied in the marine science laboratory at the Naos Island Laboratories. The work captures the interaction between art and science and reflects my fascination for the natural processes and human influence on marine ecosystems.

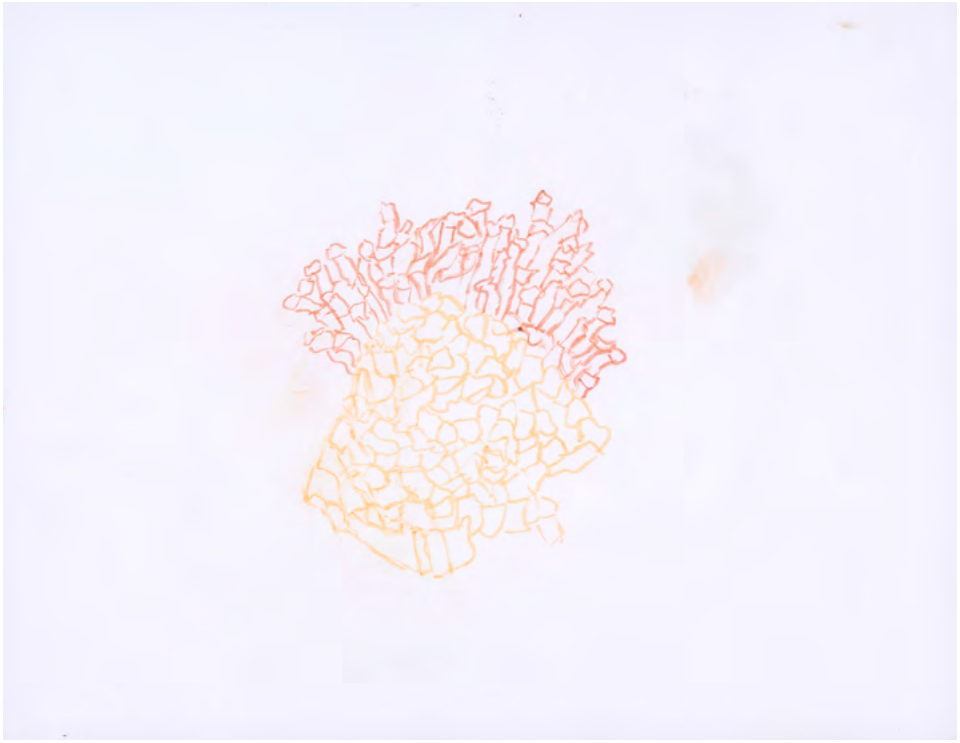
This series was also featured in
Entanglement · Vertical Landscape, 2014 ↗

IV-ix
Underwater Drawings / Coibita Coral Studies, 2024
series of 20
coloured pencil on waterproof paper
21 × 29.7 cm each

I participated in two field expeditions at the Coibita research station in Panama, working alongside the Symbiosis & Resilience laboratories led by Matthieu Leray. This scientific team investigates the effects of climate change on coral reefs, specifically on the role of fish in these fragile ecosystems.

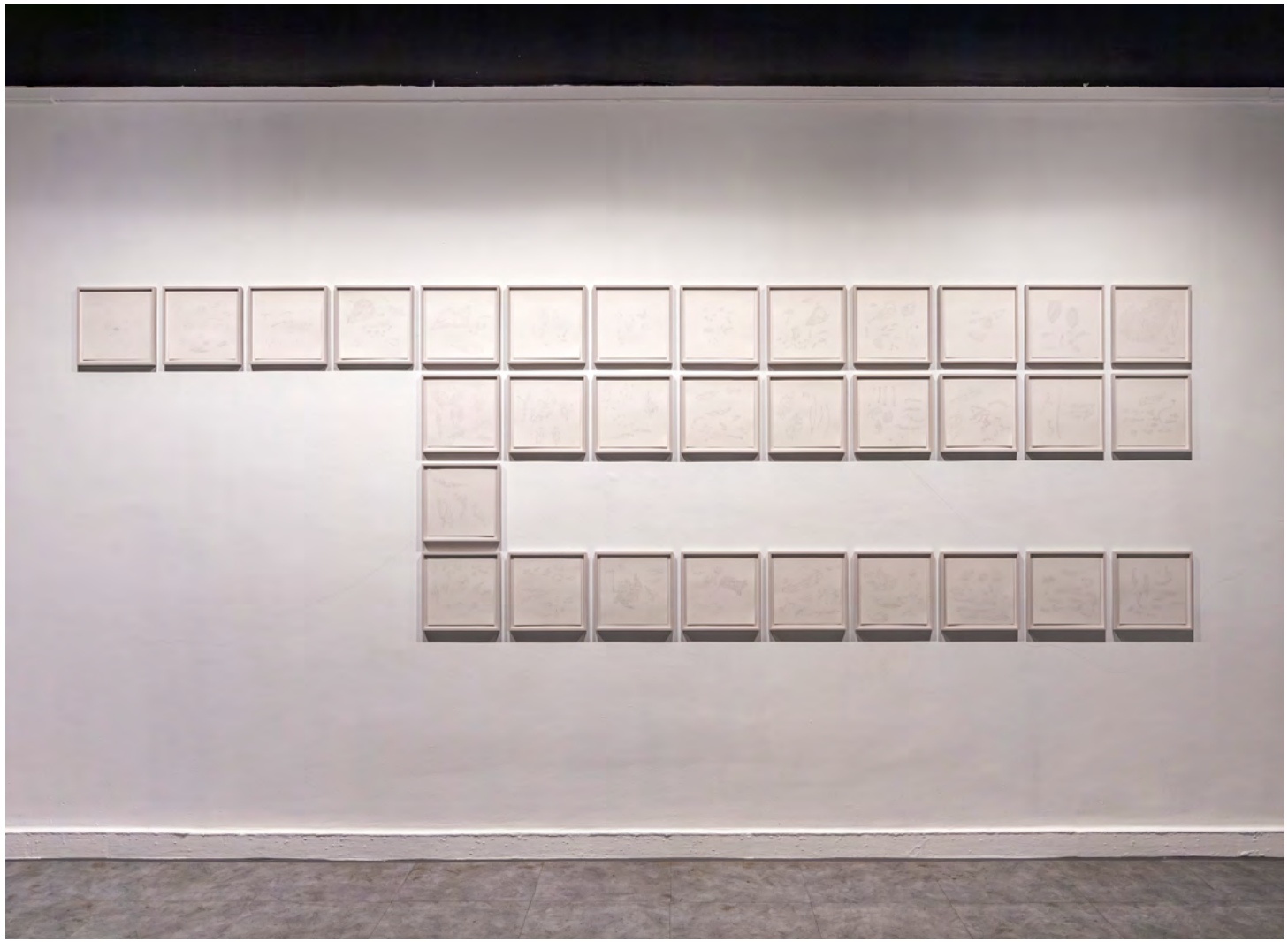
During these expeditions, I created a series of underwater drawings, capturing coral life directly in its natural environment. The creative process was profoundly influenced by the underwater conditions: the currents, the continuous movement, the visual distortion caused by immersion and the variability of light filtered through the water were determining factors in the work. These influences are reflected in the fluidity and dynamism of the drawings, which transmit the vibrant and constantly changing atmosphere of the coral reefs.





process

IV-x
Leaf Litter Traps, 2012
series of 32
pencil on paper
24 × 24 cm (29.5 × 29.5 cm framed) each



The work comes from the observation of a device used in ecology studies which consists of a PVC pipe structure from which a net is attached. This object, known as a "litter trap", has the function of capturing dead plant material that falls from nearby trees and plants.

Intrigued by the contrast between simple technology and the lush natural environment, I wanted to explore this phenomenon more deeply. During my stay at STRI, in the experimental facility at Gamboa, I constructed my own leaf trap. I then meticulously drew the collected material: leaves, flowers, fruits and small branches.

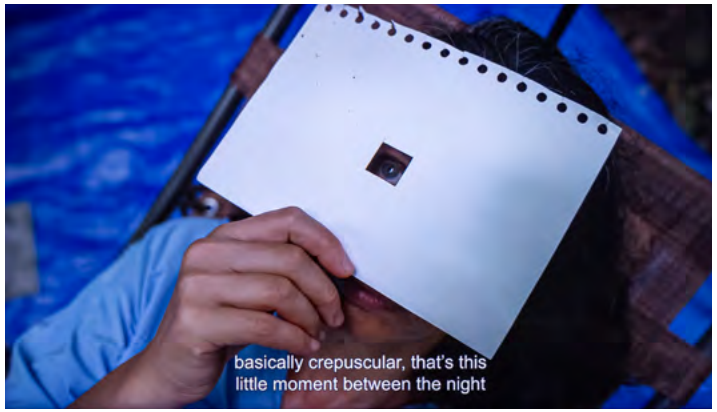
Initially, the trap only caught small items of little visual interest, which led me into a process of experimentation. I set up two additional traps, strategically placed under a Cecropia tree and under another tree whose leaves were being partially consumed by caterpillars. These changes ultimately resulted in a more diverse and interesting collection in terms of representation.

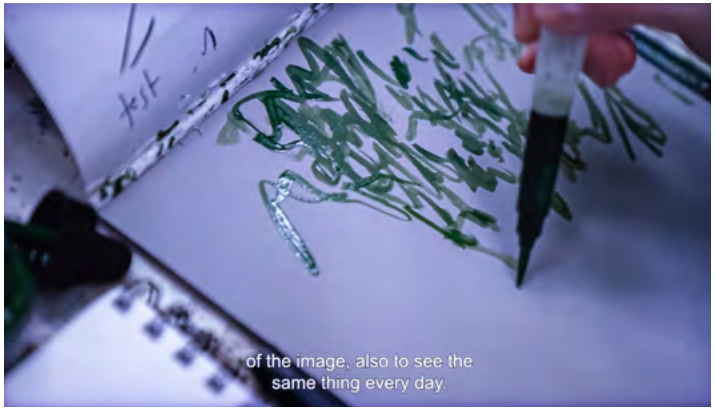
This series was also featured in
Entanglement · Vertical Landscape, 2014

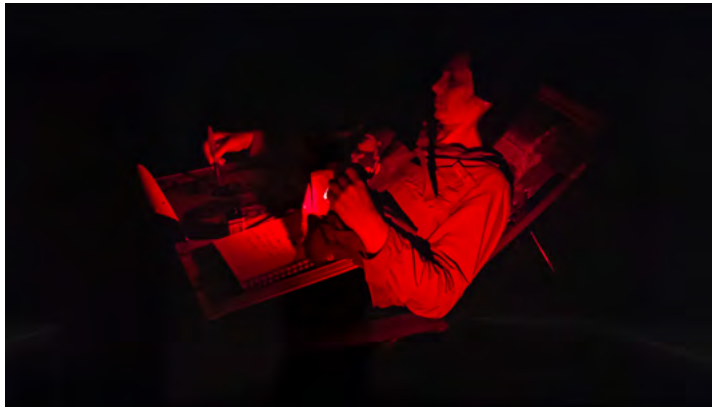

x
iv
i

V Process Room

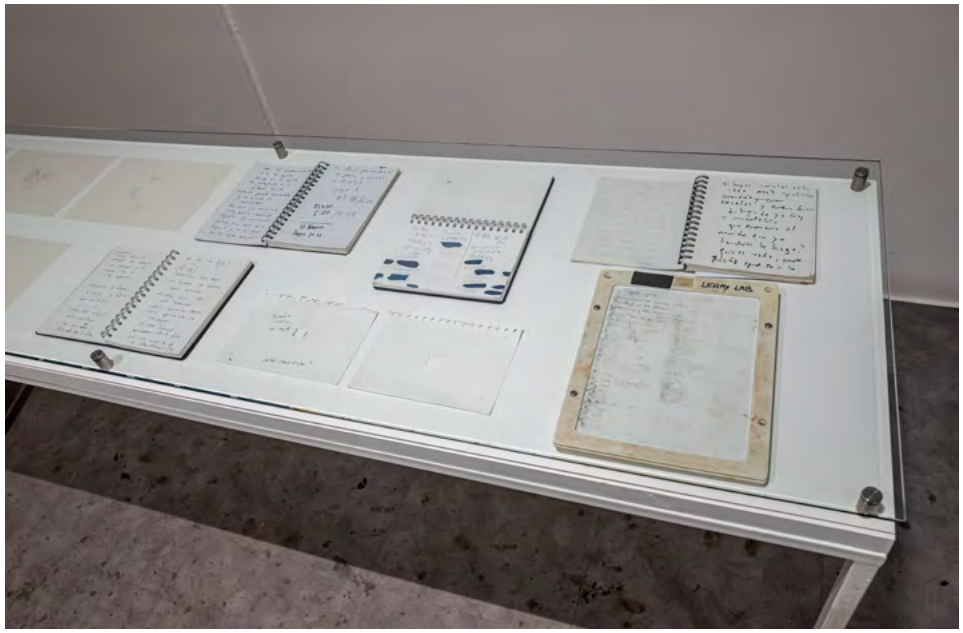
V-i
Video documentation of the research and work process on Barro Colorado Island
by Ana Endara, 2024
10”59’







V-ii
Field tests
Recce Water Line: 10 drawings, 21 × 28 cm
Tests Invasive Species: 5 drawings, 21 × 28 cm
Fossil's Stories: series of 23 drawings, 13 × 13 cm
Tests Mangroves: 5 drawings, 21 × 28 cm
Tests Roots Underwater: 2 watercolours, 30 × 42 cm
11 notebooks



Irene Kopelman
Una cuestión de encuadre
(A Matter of Framing)

Artist:
Irene Kopelman

Exhibition venue:
MAC Panamá |
Museo de Arte Contemporáneo

Curated by:
Juan Canela

Assistant curator:
Jennifer Choy

Project collaborators and scientific advice:
Andrew Altieri, John Christy, Matthieu Leray, Aaron O'Dea, Stefan Schnitzer, Erin Spear, Mark Torchin, William Wcislo

Workstation scientific advice:
Andrea Bogantes, Brigida De Gracia, Kim García Méndez, Natasha Hinojosa, Matthieu Leray, Claudia Mamani Medina, Aaron O'Dea, Fransua Mar Otero, Andre Scheepers, Erin Spear, William Wcislo

Text:
Irene Kopelman

Text editor:
Dominik Czechowski

Credit documentation:
Photography exhibition:
Alfredo Martiz
Photography drawings:
Art in Print/Zeeuws Archief
Photography paintings:
Margareta Svensson

Design PDF:
Ayumi Higuchi

Posters design:
Ayumi Higuchi

Design workstation table:
Johann Wolfschoon

Video documentation:
Ana Endara

I would like to thank:
Andrew Altieri, John Christy, Matthieu Leray, Aaron O'Dea, Stefan Schnitzer, Erin Spear, Mark Torchin, and William Wcislo

Joshua Tewksbury, Director, and Oris Sanjur, Deputy Director, the Smithsonian Tropical Research Institute (STRI)

Andrea Bogantes, Brigida De Gracia, Kim García Méndez, Natasha Hinojosa, Claudia Mamani Medina, Fransua Mar Otero, Andre Scheepers, Stuart J. Davies, Owen McMillan, and all the team members of the laboratories I had worked with at STRI, as well as technicians and staff in charge of administrative areas

Juan Canela, María Lucía Alemán, Jennifer Choy, Vladimir Dickson, Magali de Torres and the entire team at MAC Panamá

Johann Wolfschoon, Ana Endara, Pilar Moreno, Donna Conlon, Adrienne Samos, Praneet Soi, Analida Galindo, Dominik Czechowski, and Ayumi Higuchi

Galeria Labor, Mexico City
Jocelyn Wolff Gallery, Paris

The project was made possible with the support of Mondriaan Fonds, MAC Panamá | Museo de Arte Contemporáneo and Galeria Labor