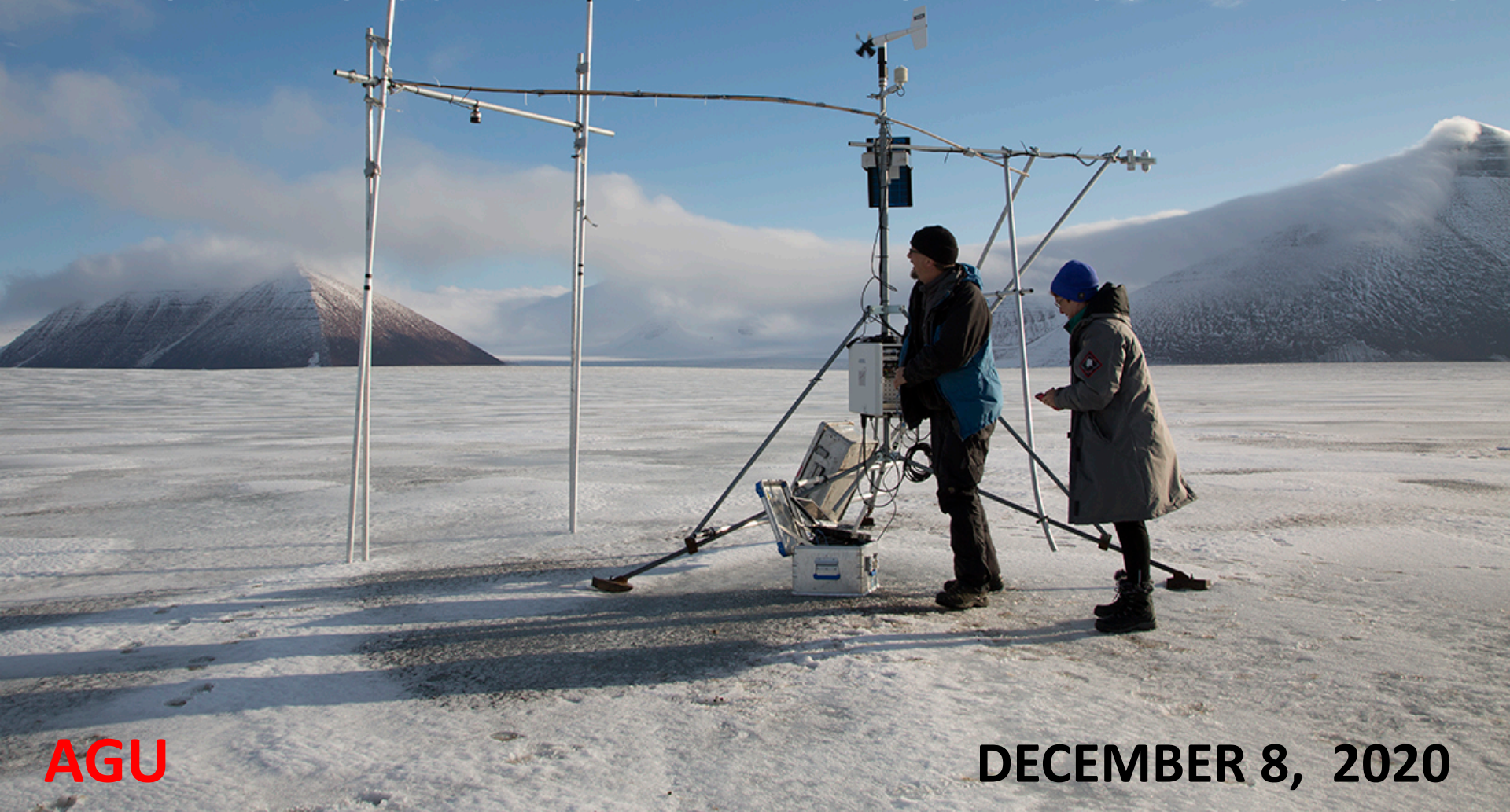


DIANE BURKO

MAKING THE INVISIBLE VISIBLE

TRANSLATING SCIENTIFIC DATA INTO MY VISUAL LANGUAGE



AGU

DECEMBER 8, 2020

ARTIST



1980, On Cliffs of Etretat –
Giverny Residency Center Residency

IN THE LANDSCAPE



1993, at Casa Rosa Studio on Lake Lecco
Rockefeller Study and Conference

IT BEGAN WITH THE “LANDSCAPE”

GIVERNY, RESIDENCY, MONET'S GARDEN,



FIRST FLIGHT WITH JIM TURRELL 1977 48 x 80 inches



VOLCAN POAS #4a + 4b

1998

84 x 120 inches



PALAMI PALI #5

2001

60 x 96 inches



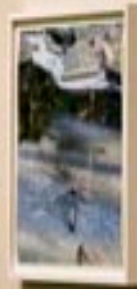
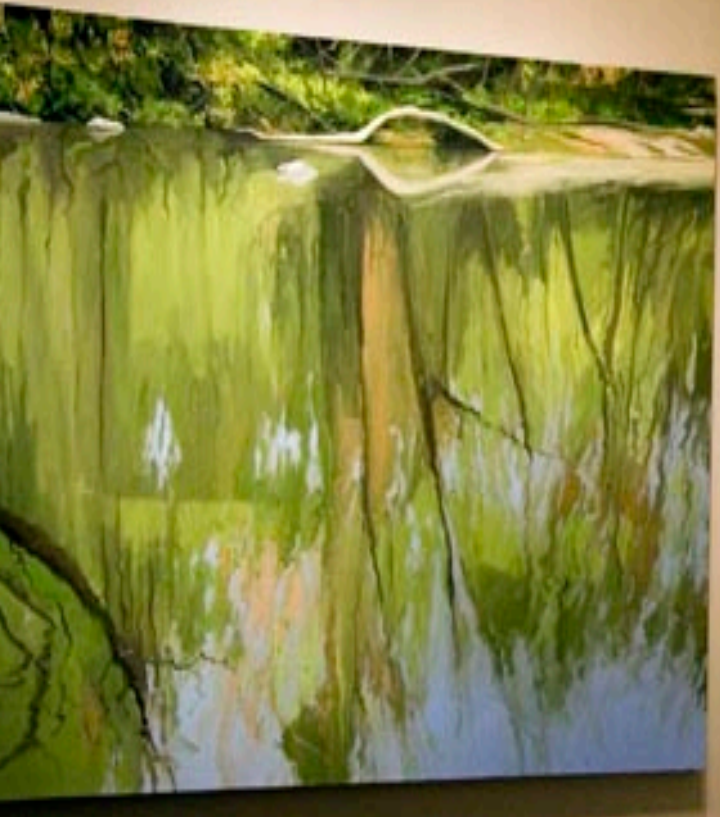
GODAFOSS #6 2004 60 x 96 inches



SPERRY 1 2011 40 x 60 inches

from

LANDSCAPE to the ENVIRONMENT: CLIMATE CHANGE



Installation *FLOW*,

MICHENER MUSEUM

2006



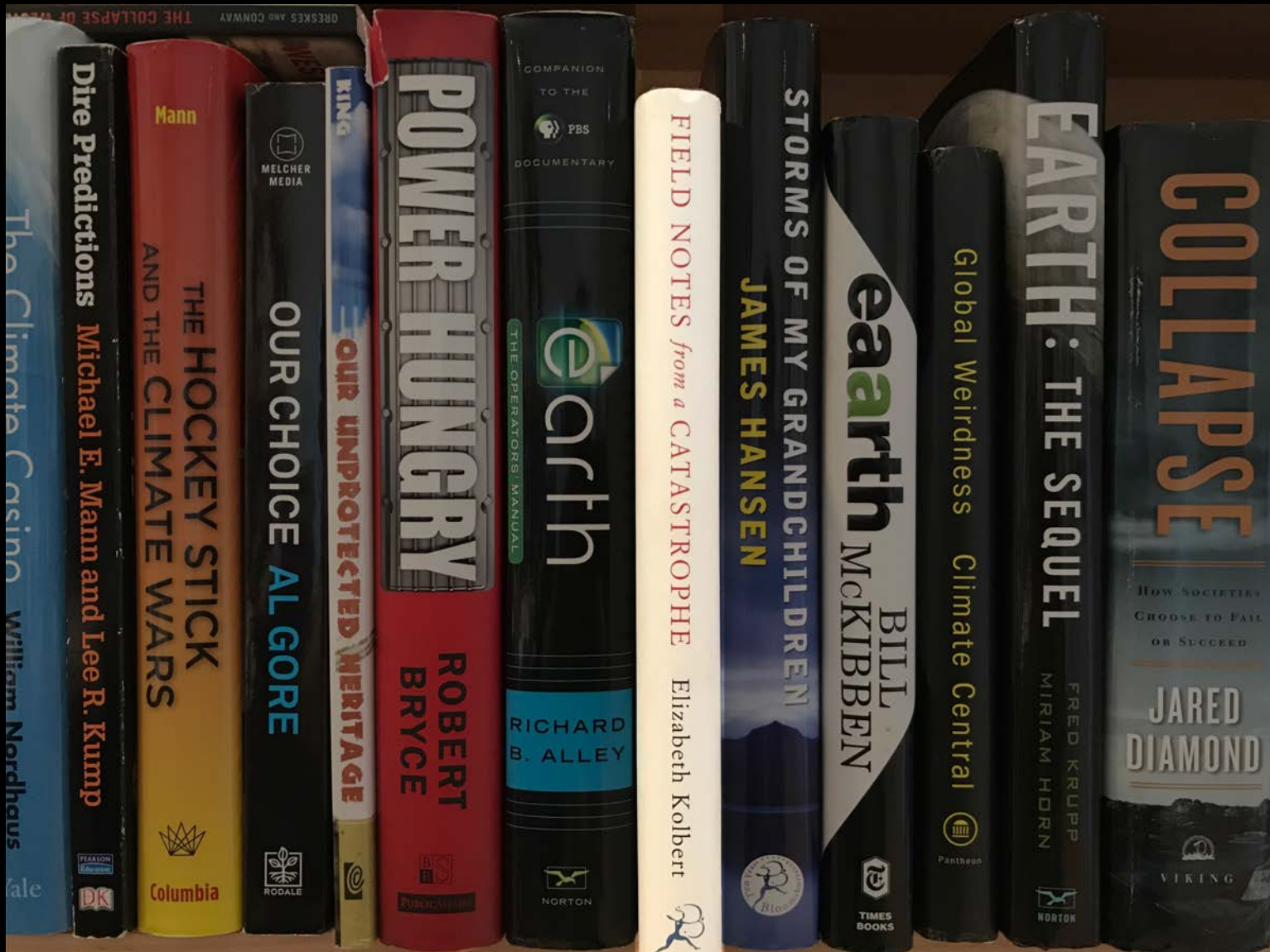
GRAND JORASSES – POINTE MARGUERITE 1976 64 x 108 inches

an inconvenient truth

the crisis of
global warming





AN INCONVENIENT TRUTH comes out in 2006



ELIZABETH KOLBERT: Field Notes on a Catastrophe


REPEAT PHOTOGRAPHY



USGS Home
Contact USGS
Search USGS

Northern Rocky Mountain Science Center (NOROCK)

Home | About Us | Science | Product Library | News & Events | Staff | Students | Partners | Contact Us



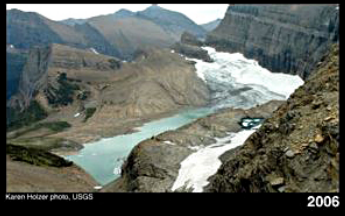
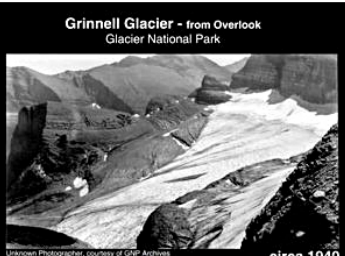
USGS Repeat Photography Project Documents Retreating Glaciers in Glacier National Park

SHARE

Global Climate Change Background

Glacier National Park's namesake glaciers have receded rapidly since the Park's establishment in 1910, primarily due to long-term changes in regional and global climate. In the last century, the five warmest years have occurred in the last 8 years - in this order: 2005, 1998, 2002, 2003, 2004 (NASA). These changes include warming, particularly of daily minimum temperatures, and persistent droughts. This warming is ongoing and the loss of the Park's glaciers continues, with the park's glaciers predicted to disappear by 2030.


Repeat Photography Project Overview



Climate change research in Glacier National Park, Montana entails many methods of documenting the landscape change, including the decline of the park's namesake glaciers. While less quantitative than other high-tech methods of recording glacial mass, depth, and rate of retreat, repeat photography has become a valuable tool for communicating effects of global warming. With evidence of worldwide glacial recession and modeled predictions that all of the park's glaciers will melt by the year 2030, USGS scientists have begun the task of documenting glacial decline through photography. The striking images created by pairing historic images with contemporary photos has given "global warming" a face and made "climate change" a relevant issue to viewers. The images are an effective visual means to help viewers understand that climate change contributes to the dynamic landscape changes so evident in Glacier National Park.

The Repeat Photography Project began in 1997 with a systematic search of the archives at Glacier National Park. We began searching for historic photographs of glaciers in the vast collection that spans over a century. Many high quality photographs exist from the parks' early photographers such as Morton Elrod, T.J. Hileman, Ted Marble, F.E. Matthes, and others who scoured the park to publicize its beauty and earn their livings. Copies of the historic photos were taken in the field to help determine the exact location of the original photograph. Photographing the glaciers cannot occur until the previous winter's snow has melted on the glacial ice and when air quality conditions are considered at least good. This creates a narrow window in the northern clime of Glacier National Park where smoke from forest fires prevented photography on many occasions in the past few years.

Since 1997 over sixty photographs have been repeated of seventeen different glaciers. Thirteen of those glaciers have shown marked recession and some of the more intensely studied glaciers have proved to be just 1/3 of their estimated maximum size that occurred at the end of the Little Ice Age (circa 1850). In fact, only 26 named glaciers presently exist of the 150 glaciers present in 1850.



HOME

RESEARCH

PRODUCTS

GALLERIES

STAFF

View Repeat Photos

NOTE: Repeat Photo pages are best viewed on monitors set to at least 1280 pixels wide.

Glaciers

- Agassiz (Boulder Pass)
- Agassiz - terminus
- Blackfoot-Jackson
- Boulder
- Boulder - Ice Cave
- Boulder - Chapman Peak

USGS: Glacier National Park Repeat Photography Project



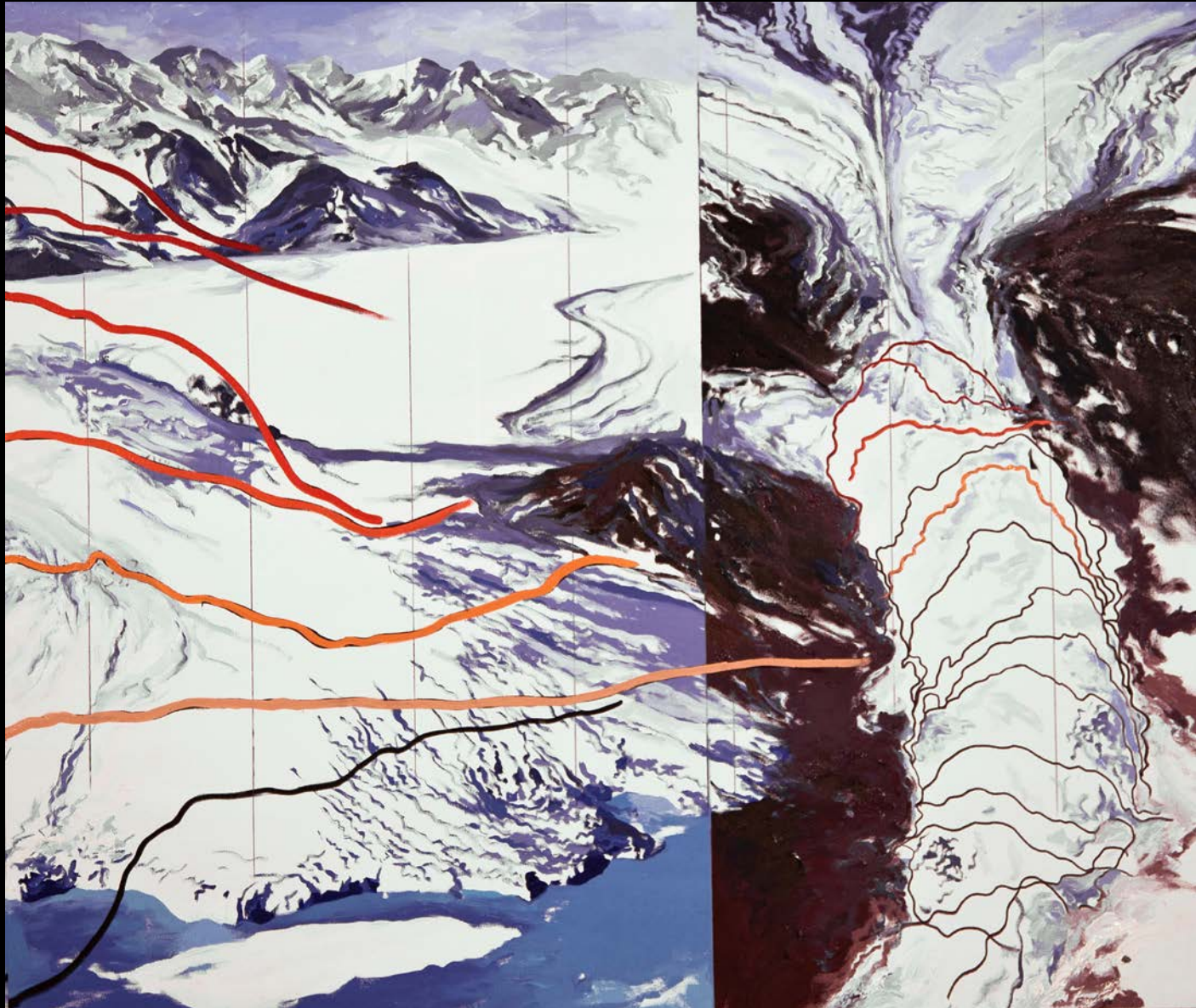
GRINNELL OVERLOOK #1, 1940 (GNP Archives);
GRINNELL OVERLOOK #2, 2006 (after Karen Holzer) 2009 50 x 162" overall

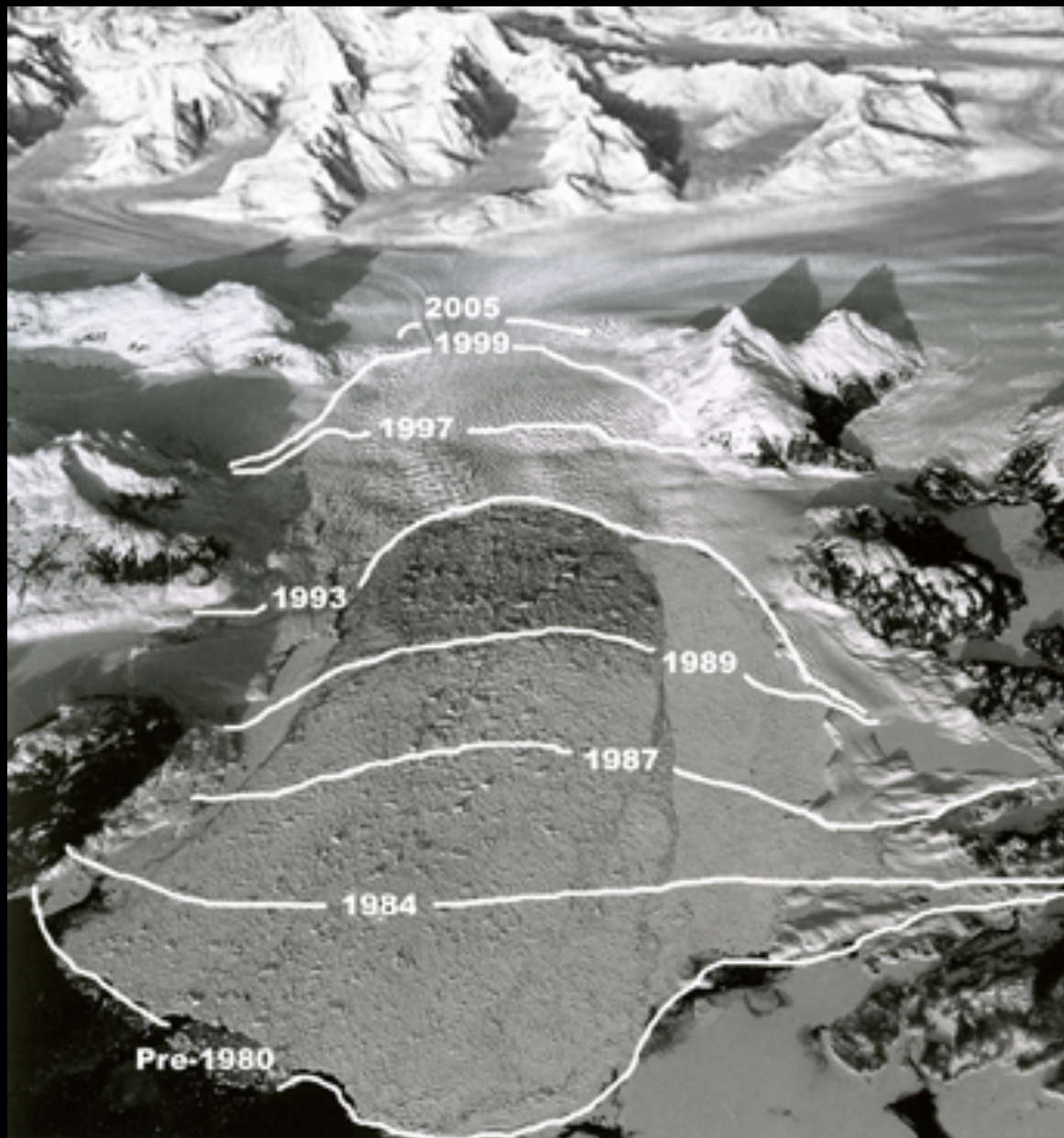


GRINNELL MT. GOULD #1, #2, #3, #4, 2009,

88"x200"

RECESSIONAL LINES





GLACIAL RECESSIONAL MAP combining images from Tad Pfeffer and Austin Post

LANDSAT IMAGERY



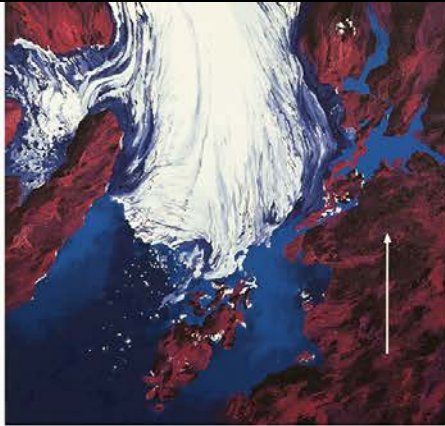
Landsat map of Columbia Glacier

COLUMBIA GLACIER #2, 1978
(AHAP Aerial USGS)
2012 50 x 60 inches





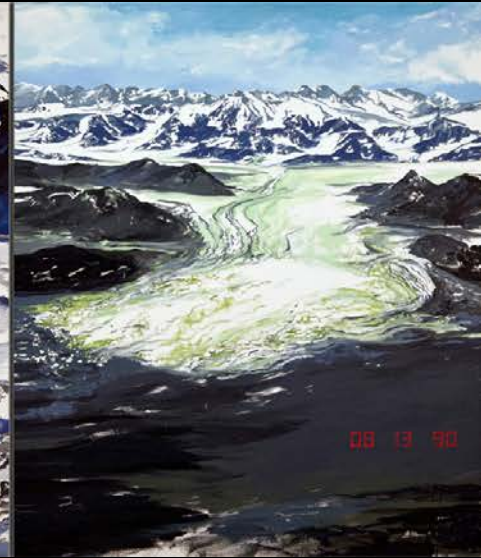
After BRADFORD
WASHBURN 1938



after AHAP Aerial
USGS 1978

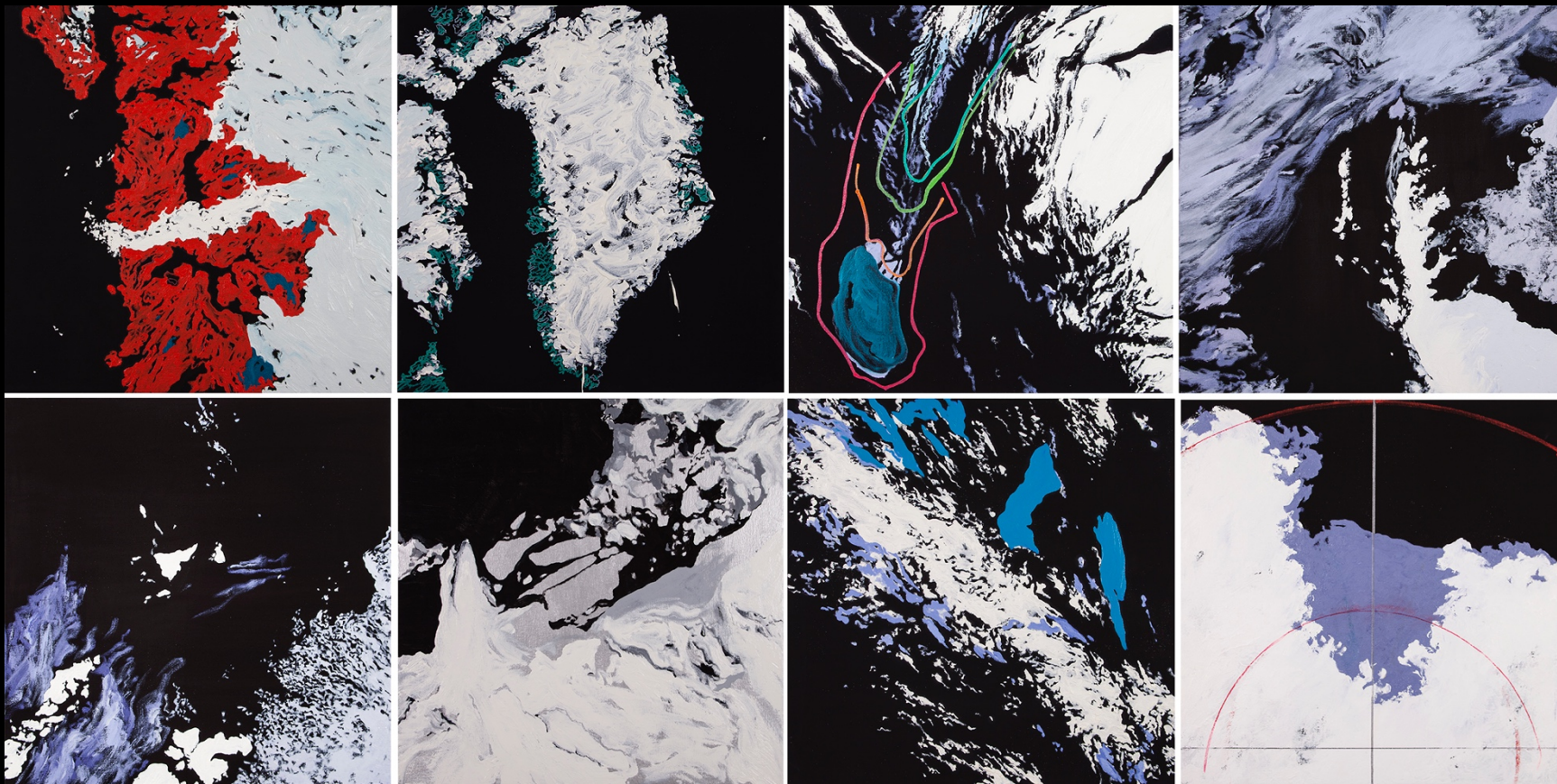


after BRUCE MOLNIA 2010



after USGS 1990

Columbia Glacier #1, #2, #3, #4, 60"x200", 2011



LANDSAT SERIES 1-8

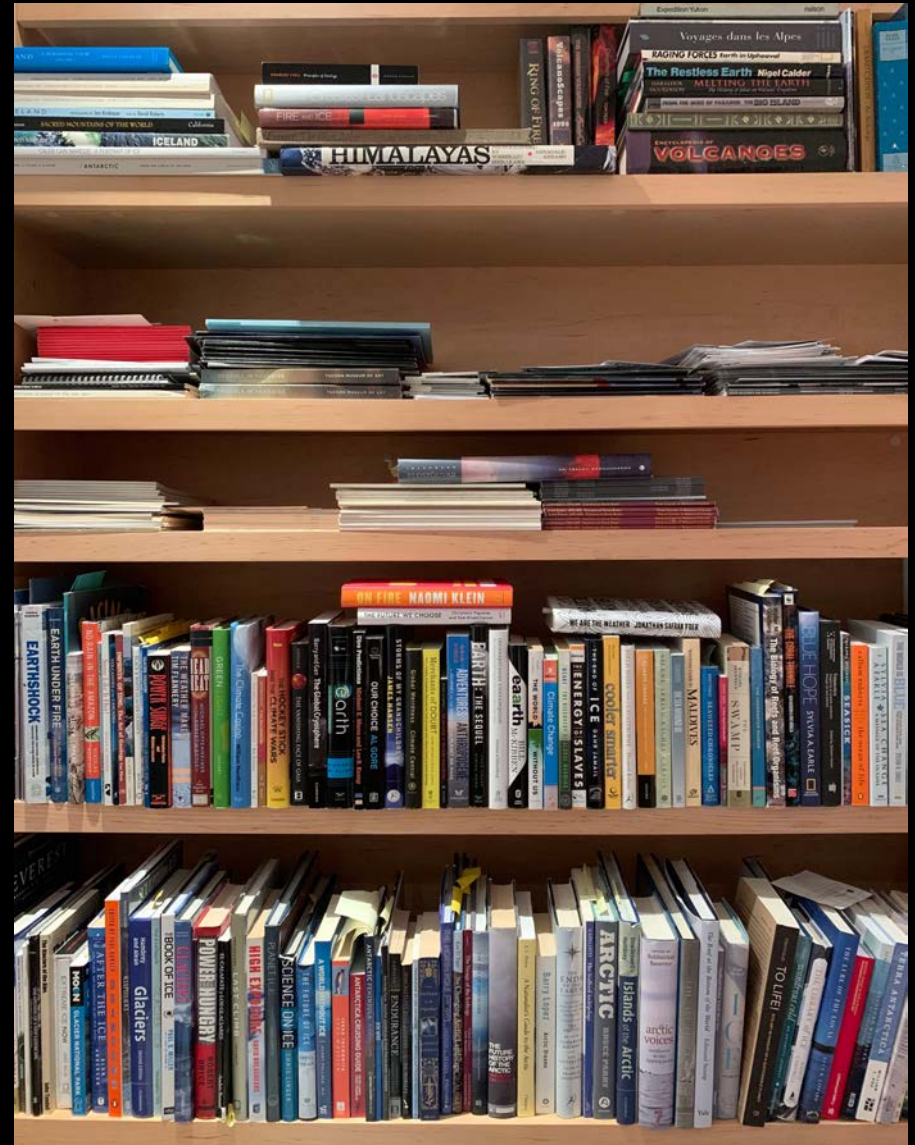
2015

40x80 inches each



Installation, *VAST AND VANISHING*, Rowan University, 2-4, 2018

BY READING



Breakaway iceberg raises climate alarms

Four times size of manhattan

David Crossley, Aug 11, 10.

Share This



A chunk of ice only slightly smaller than the area of Loop 610 in Houston - four times the size of Manhattan - broke away from Greenland and may drift toward shipping lanes in the North Atlantic and off the Canadian coast, according to researchers cited in a [Bloomberg news story](#).

Other stories note that the glacier broke on [the anniversary of global warming](#), that the Greenland ice sheet faces a ["tipping point" in 10 years](#), and that ["killer heat waves and retreating ice sheets"](#) raise climate alarms.

From Bloomberg:

The 100-square mile ice island, with enough stored water to keep the Hudson River flowing for more than two years, split

off from the Petermann Glacier last week, according to Andreas Muenchow, an associate professor of ocean science and engineering at the University of Delaware.

The ice is the largest to detach from an Arctic glacier since 1962 and follows the six warmest months on record. Glaciers in Greenland and Antarctica are melting faster than predicted, accelerating their march to the sea and adding to the rising ocean levels that threaten coastal communities worldwide, according to many scientific studies.

"So far, 2010 has been the hottest year on record, and scientists agree Arctic ice is a canary in a coal mine that provides clear warnings on climate," said U.S. Representative Edward Markey, a Democrat from Massachusetts and chairman of the Select Committee on Energy Independence and Global Warming, on the panel's website.

ABOUT PETERMANN GLACIER



EARTH OBSERVATORY
Where every day is Earth Day

Home

Images

Global Maps

Features

News & Notes



[download](#) large image (716 KB, JPEG, 2000x2600)

[download](#) GeoTIFF file (7 MB, TIFF, 2000x2600)

[download](#) Google Earth file (KMZ)

acquired July 20, 2011

acquired July 20, 2011

acquired July 20, 2011

In August 2010, the Petermann Glacier along the northwestern coast of Greenland calved an ice island roughly four times the size of Manhattan. Nearly a year later, on July 20, 2011, a piece of that ice island—named Petermann Ice Island-A (PII-A) and about the same size as Manhattan—was still visible to the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's [Terra](#) satellite.

The Canadian Ice Service (CIS) tracked the ice island as it drifted through the Labrador Sea. On July 8, 2011, the CIS reported that the PII-A was approximately 55 square kilometers (21 square miles), and was continuing to lose surface area through calving and melting. On July 20, MODIS observed PII-A slightly south of where it had been a month earlier.

On July 21, 2011, MSNBC reported that PII-A was slowly drifting toward Newfoundland. The glacier was not likely to reach land; its base would probably become grounded on the sea floor off the coast. The ice chunk did, however, pose a potential hazard for shipping lanes and offshore oil rigs.

References

Canadian Ice Service (2011, July 8). [Petermann Ice Island Updates](#). Accessed July 22, 2011.

MSNBC. (2011, July 21). [Massive ice island drifts toward Canada](#). Accessed July 22, 2011.

NASA image courtesy Jeff Schmaltz, [MODIS Rapid Response](#), NASA Goddard Space Flight Center. Caption by Michon Scott



Entrance to the WALTON ARTS CENTER show, 2017

BEARING WITNESS



On Kronebreen Glacier, Svalbard

9/17/13

KRONEBREEN

GREENLAND

ANTARCTICA

NEW ZEALAND

INVESTIGATING
GLACIAL MELT

NORTH

AND

SOUTH



2013

2014

2015

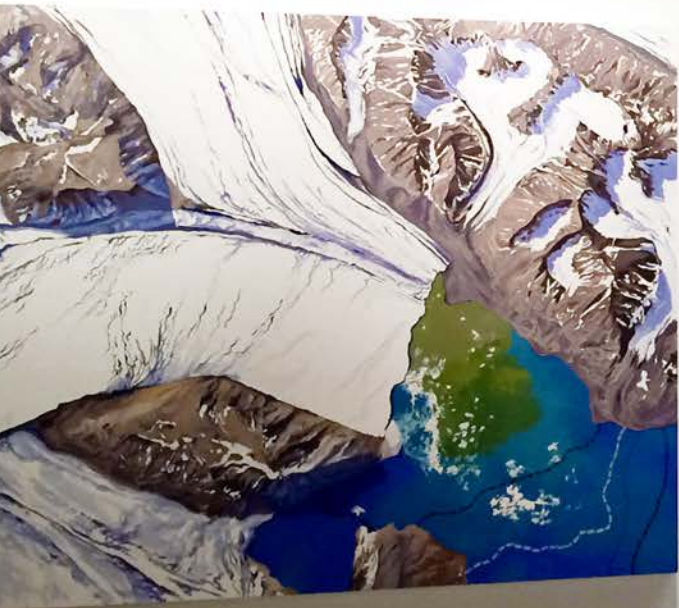
2017



ON RAUDFJORD BEACH OF ICE, September 2013



FLYING UP KRONEBREEN September 17, 2013



STUDIO: 2014



GLACIAL SHIFTS, Bearing Witness to Climate Change, Walton Arts Center, Arkansas, 2017

LEARNING FROM SCIENTISTS

IN THE FIELD



KRONEBREEN, SVALBARD, with Dr. Jack Kohler, NPI, September, 2013

LEARNING from SCIENTISTS at CONFERENCES

CLIMATE LITERACY:

The Arts as an Ally in
Invoking Change
AGU

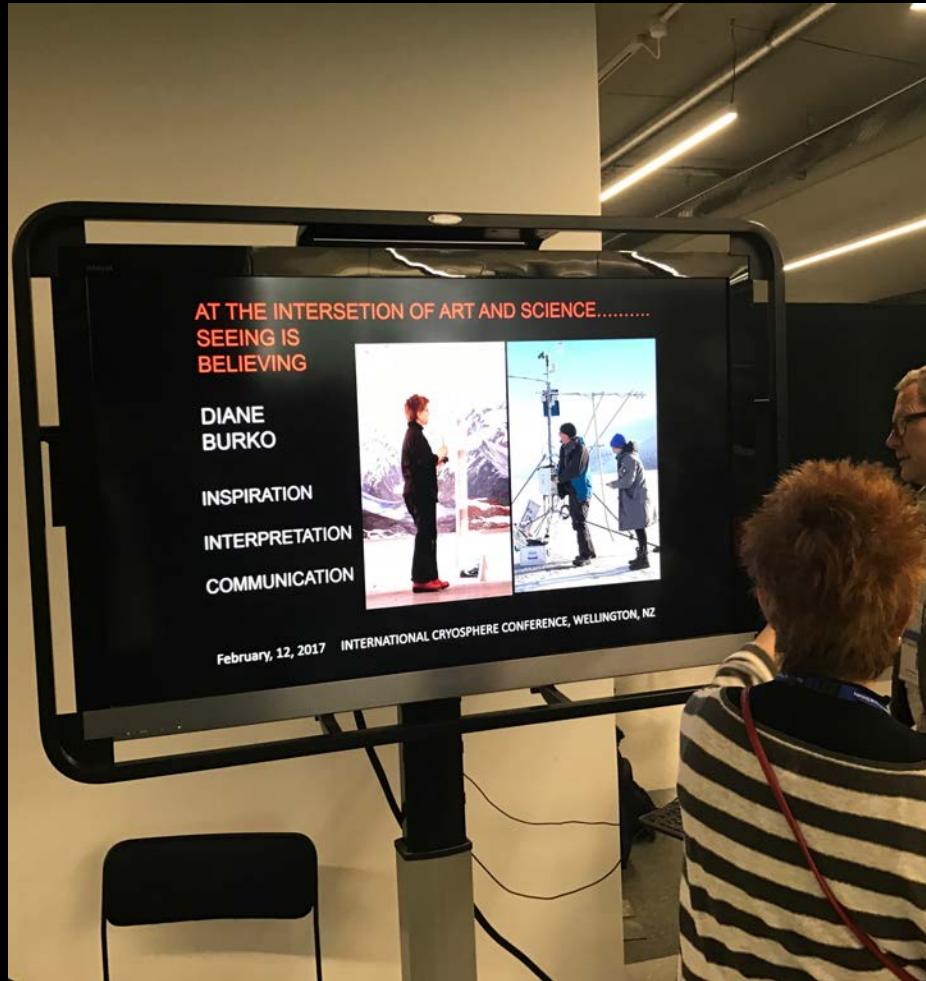
December 15,
2016

DIANE
BURKO

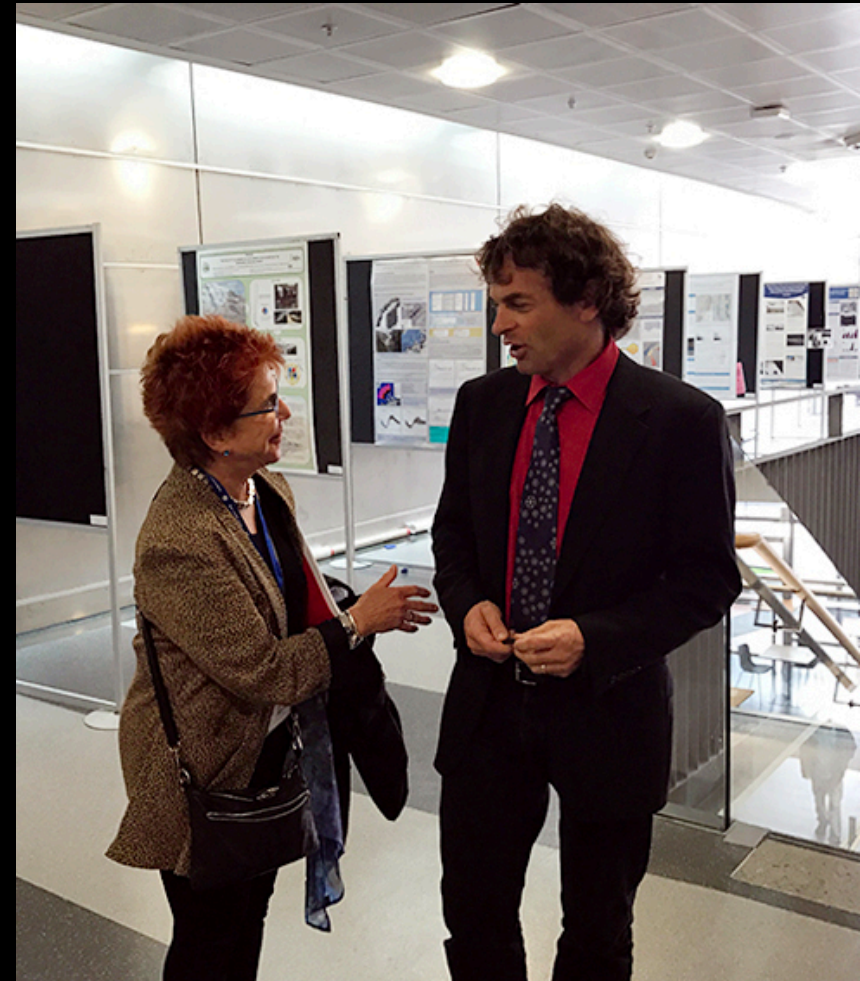


Engagement in Climate Change Awareness through
ART EXHIBITIONS

INTERNATIONAL CRYOSPHERE CONFERENCE, NZ, 2017



AT OPENING RECEPTION



SPEAKING WITH ERIC RIGNOT AFTER
HIS KEYNOTE ADDRESS



DEMONSTRATION BY SCIENCE COMMUNITY AT AGU 2016

REFOCUSING ON THE OCEANS

CLIMATE CHANGE IS DESTROYING OUR REEFS.

WE MUST PHASE OUT COAL.

We, the undersigned, have collectively devoted over 1,200 years studying climate change, marine ecosystems and the reef. We know that the burning of fossil fuels is severely damaging our Great Barrier Reef.

OAHU

MOLOKAI

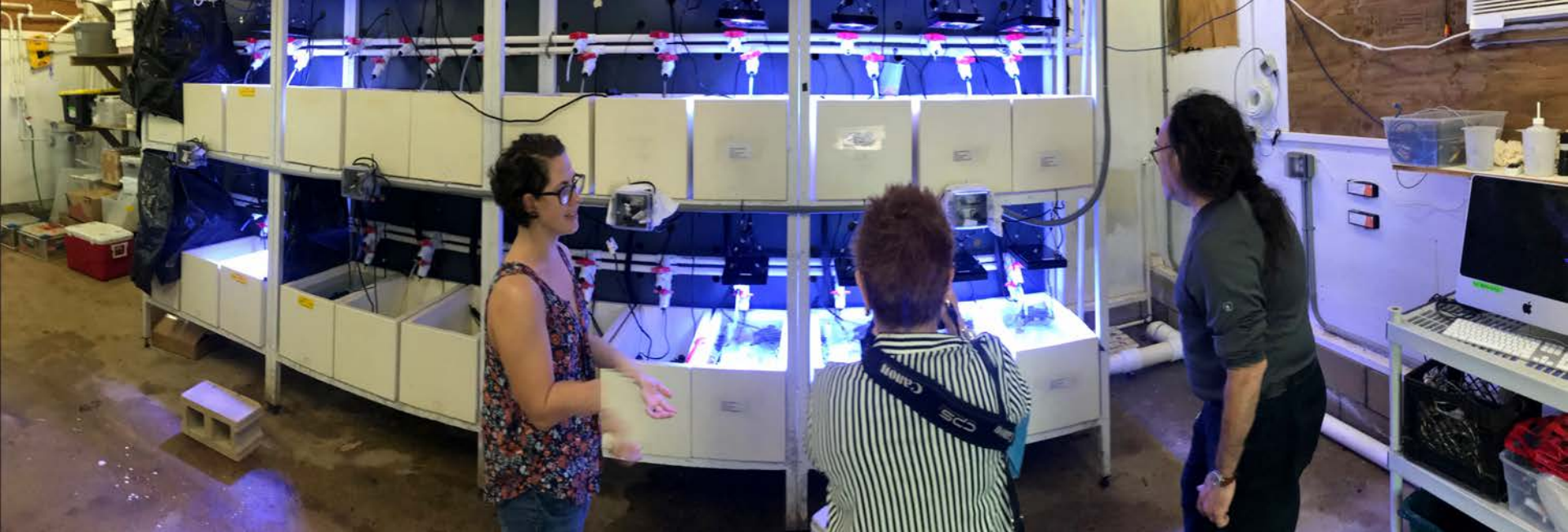
AMERICAN SAMOA

**INVESTIGATING
CORAL REEFS**



December 2017

January, 2018



LEARNING FROM RESEARCHERS IN THEIR LABS



HIMB, Hawaiian Institute of Marine Biology,
December, 2017

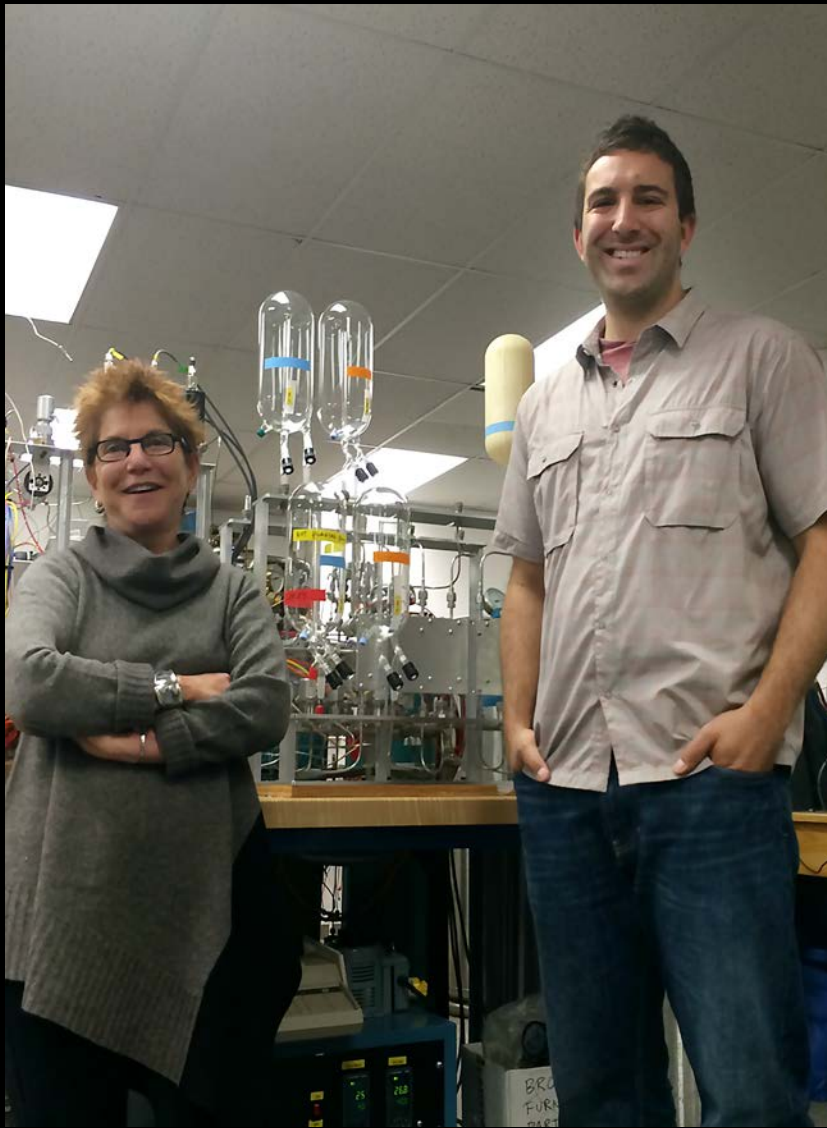


HIMB: Wet Labs: Learning about SYMBIONTS,



SCRIPPS INSTITUTE OF OCEANOGRAPHY, @ STUART SANDIN LABS

Marine Biology Research Division, March 1, 2018

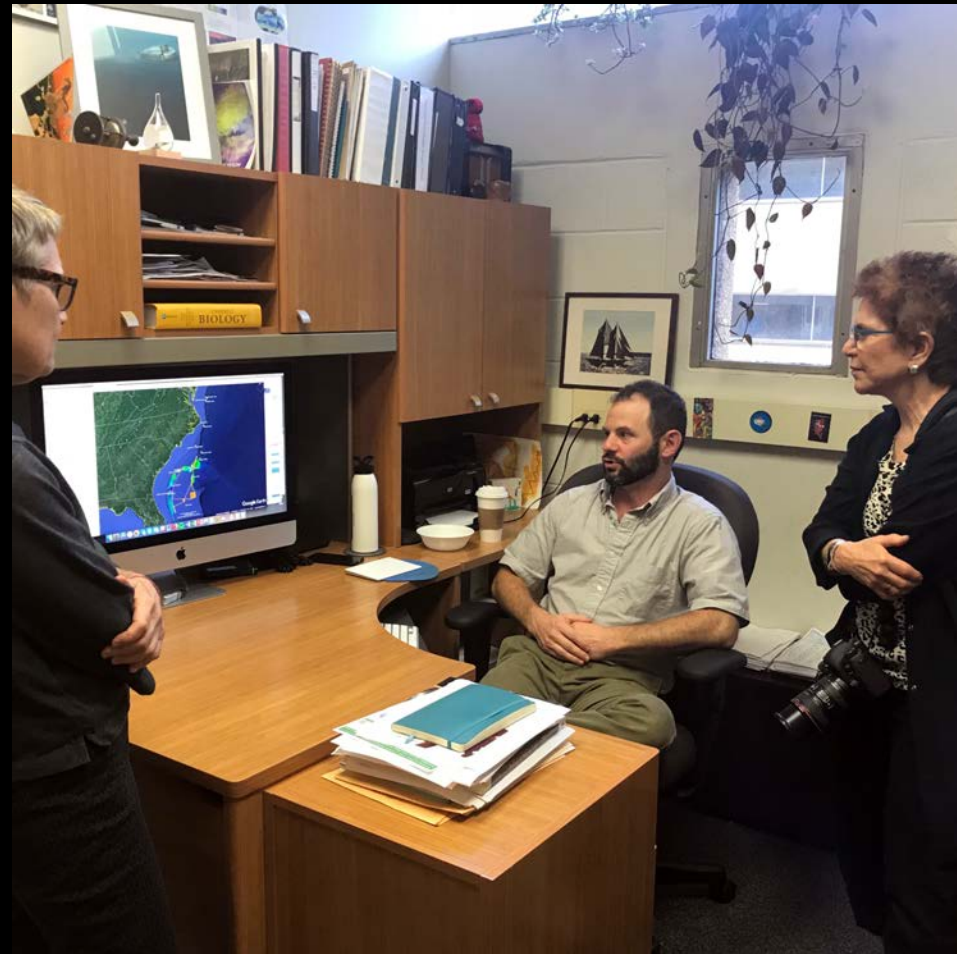
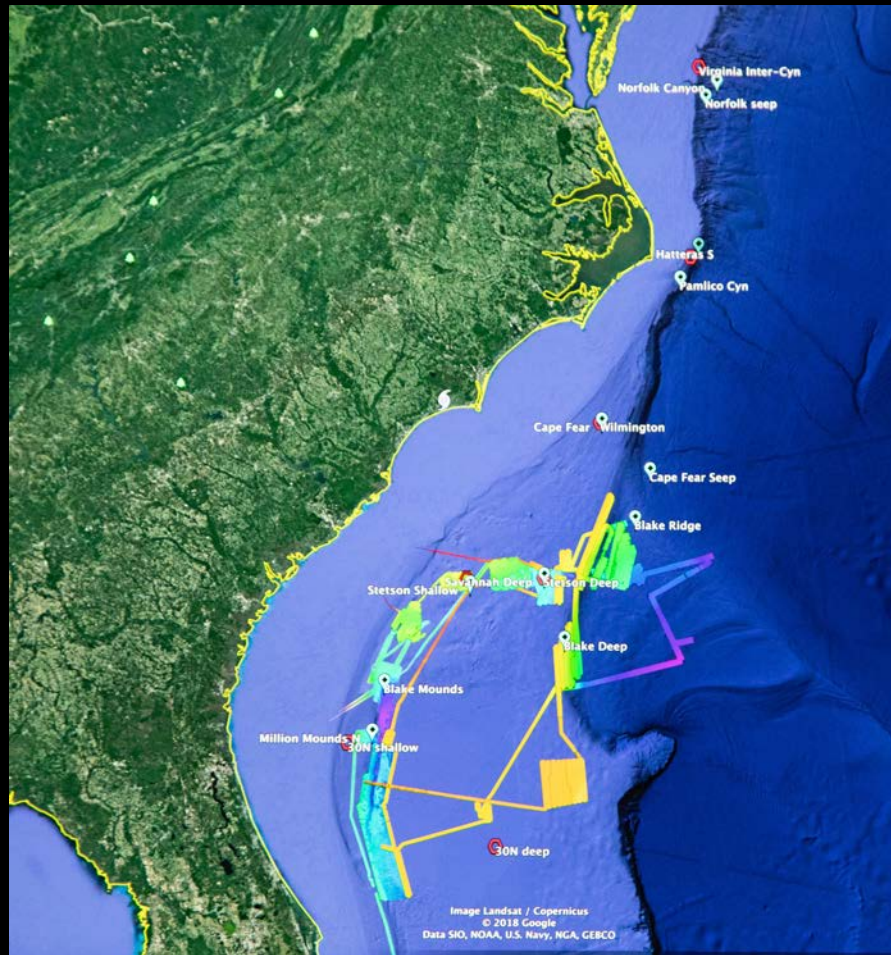


INSTARR, BOULDER, CO STUDENTS and LABS

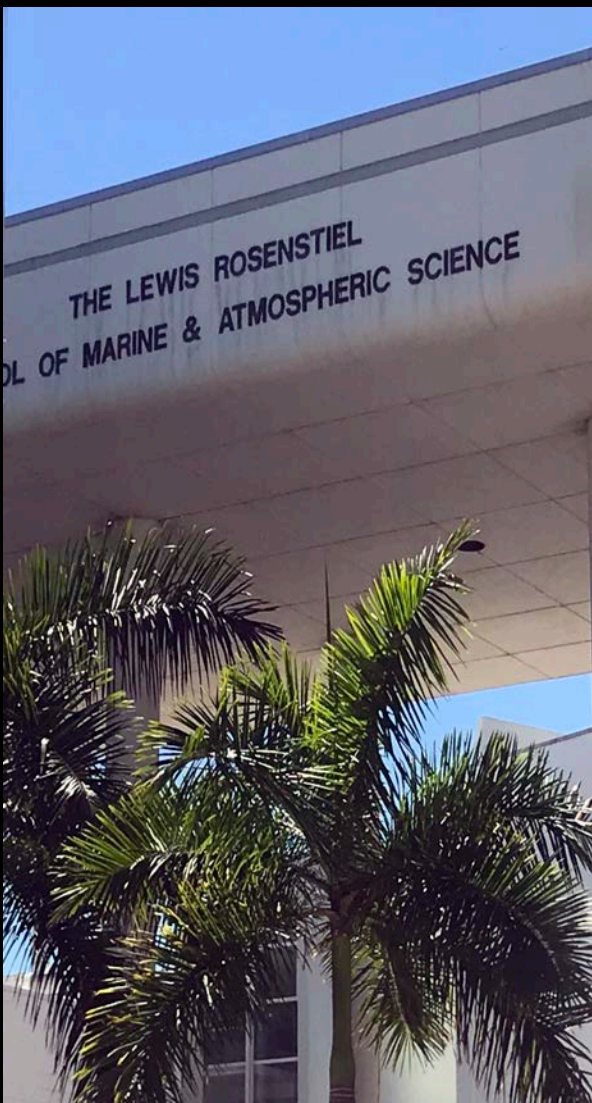
ARCHIVE, November 2014



INSTITUTE FOR MARINE AND ANTARCTIC STUDIES, TASMANIA, MARCH 2017



with ERIL CORDES, Lead Scientist, “Deep Search Project” at
Temple University, September, 2018



UNIVERSITY OF MIAMI, ROSENSTIEL SCHOOL OF
OCEANOGRAPHIC AND ATMOSPHERIC SCIENCE

TRANSLATING IN THE STUDIO



STUDIO: 2010



STUDIO: 2011

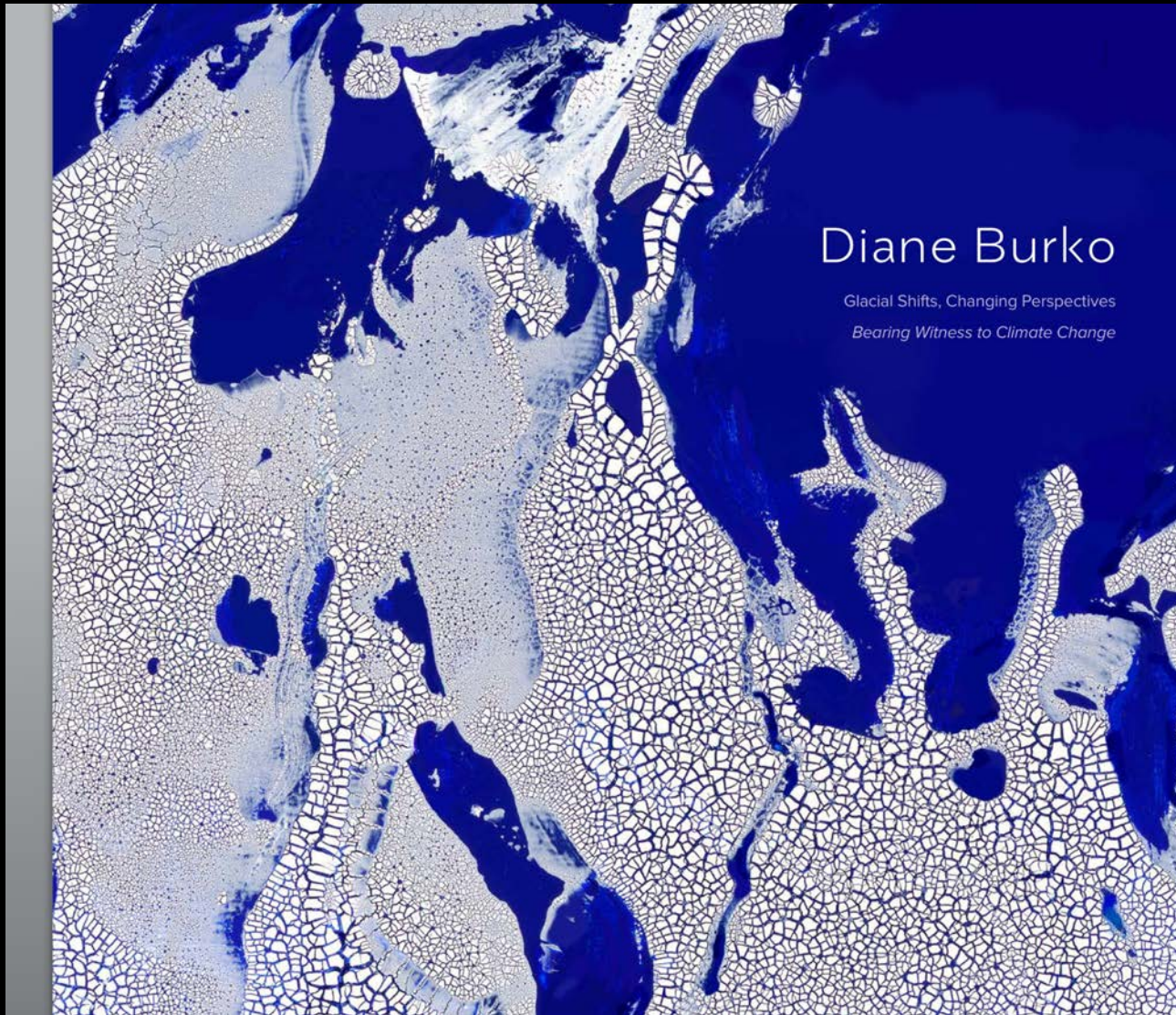


STUDIO: 2015



STUDIO with ARCTIC MELTING I and II (unfinished), From NASA WORLD VIEW SITE
OCTOBER 2016,

WALTON ARTS CENTER, ARKANSAS, MAY-SEPTEMBER, 2017



GLACIAL SHIFTS, CHANGING PERSPECTIVES :
Bearing Witness to Climate Change



GREAT BARRIER REEF, 2017-2018, 60"X84", December 2018



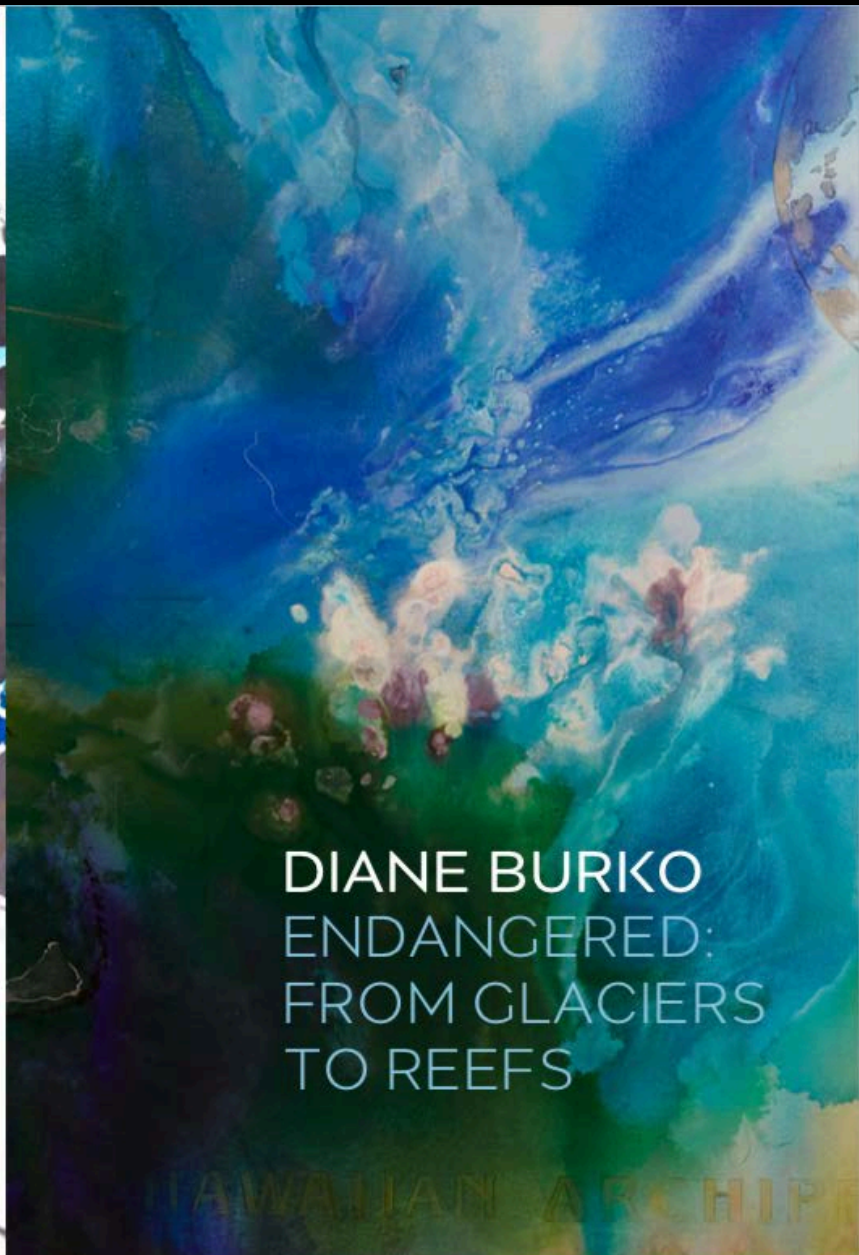
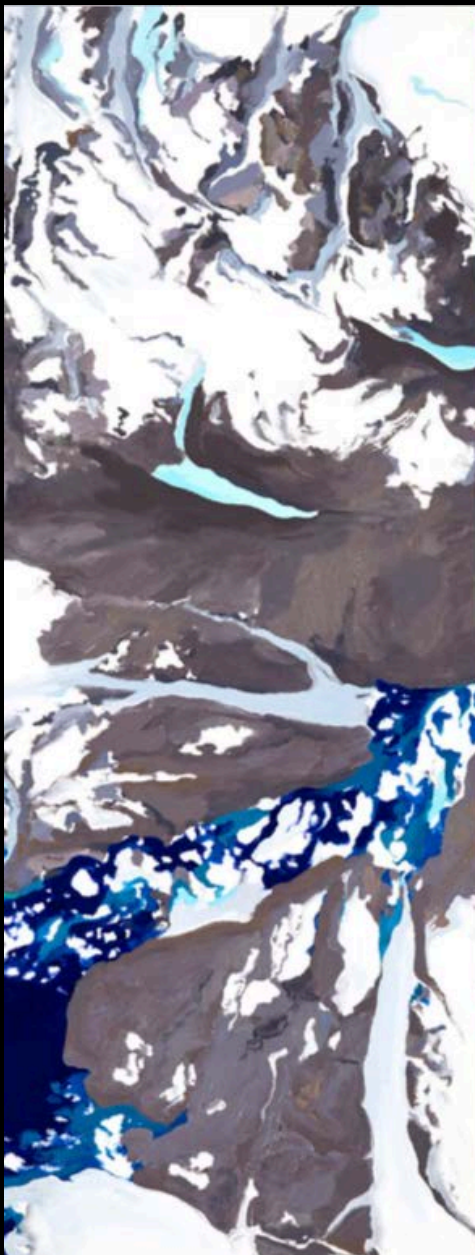
OVER THE GREAT BARRIER REEF, A
40 x 60 inches, March 2017, Archival inkjet print



MAKING THE INVISIBLE VISCERAL.....



Diane Burko: *Flow*



ENDANGERED: FROM GLACIERS TO REEFS



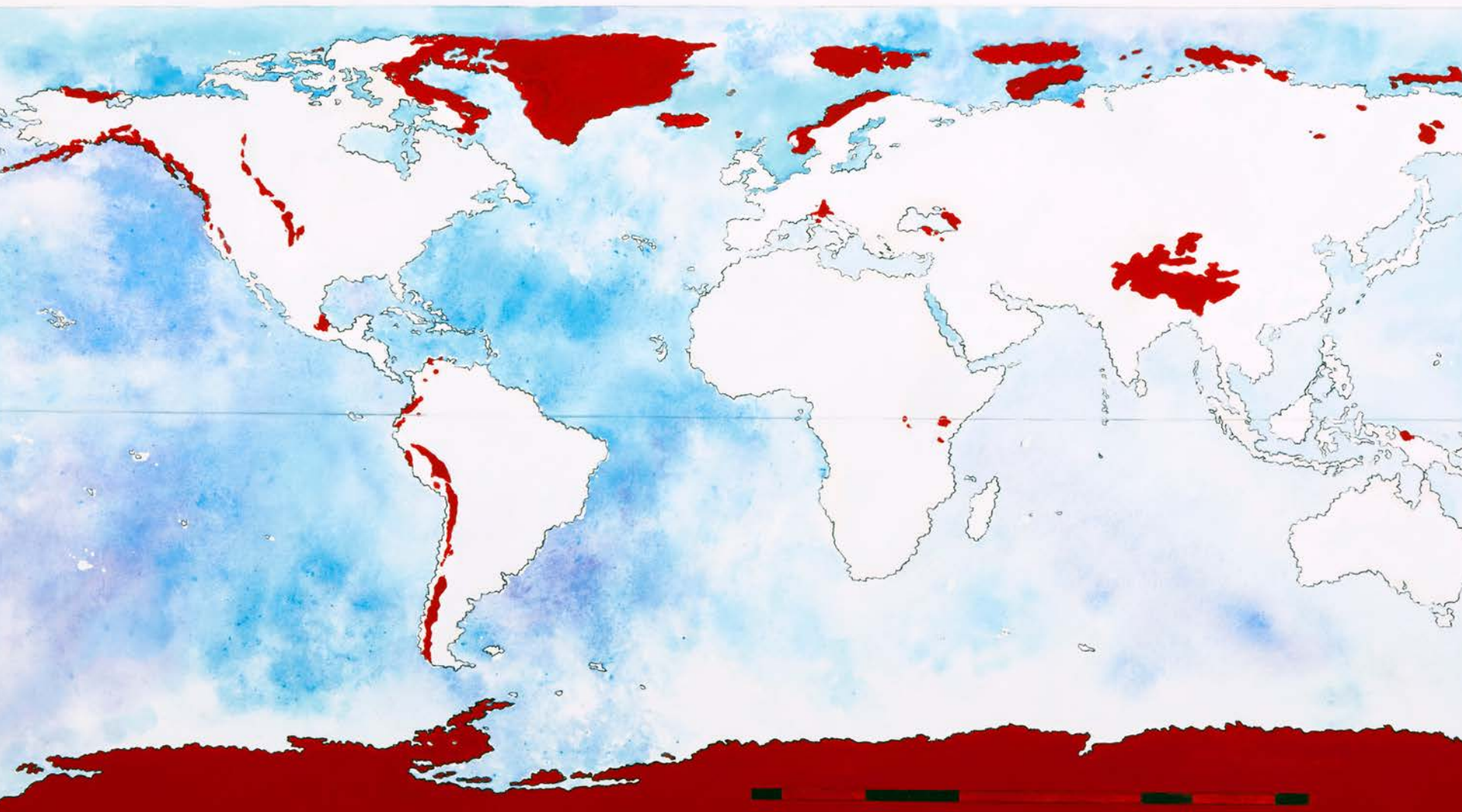
NATIONAL ACADEMY OF SCIENCES

August 2018 to January 2019



WORLD MAP and NOAA MAP series BEGINS: 2019

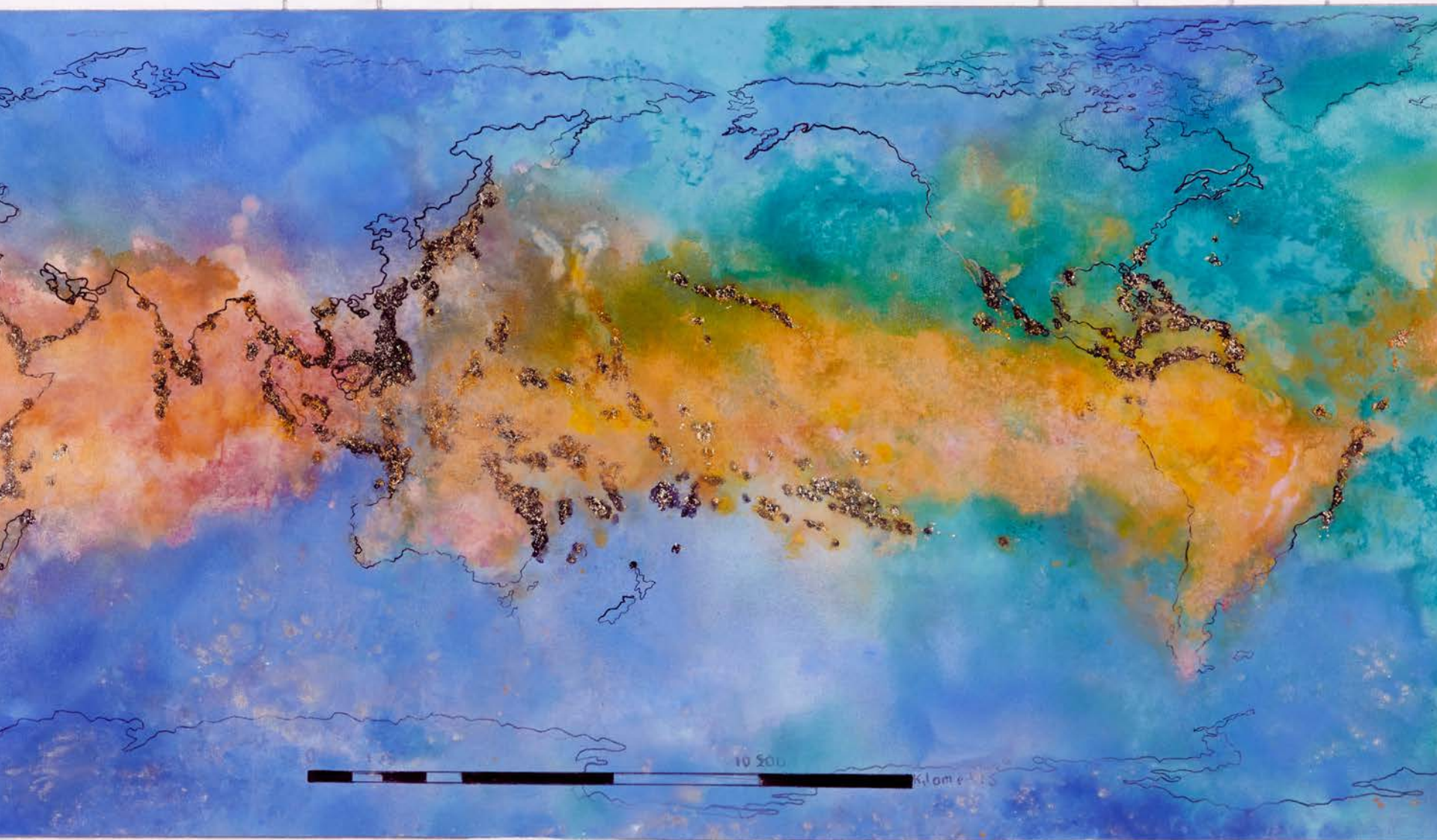




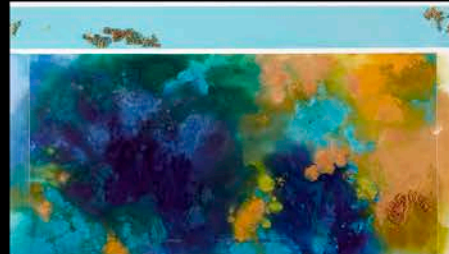
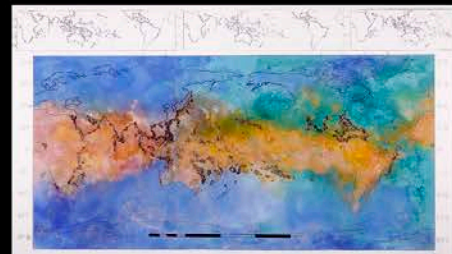
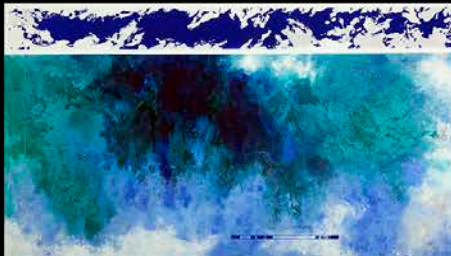
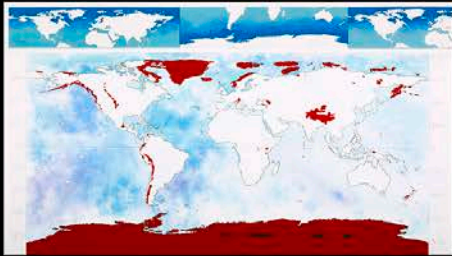


STUDIO – June, 2019

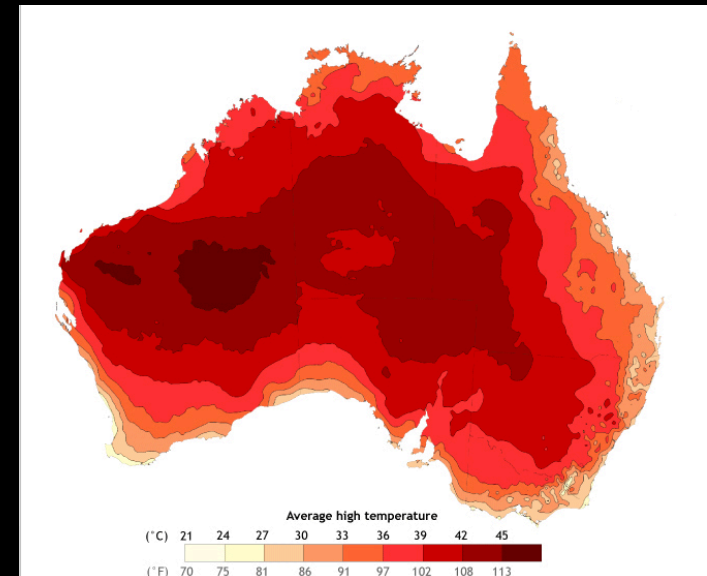
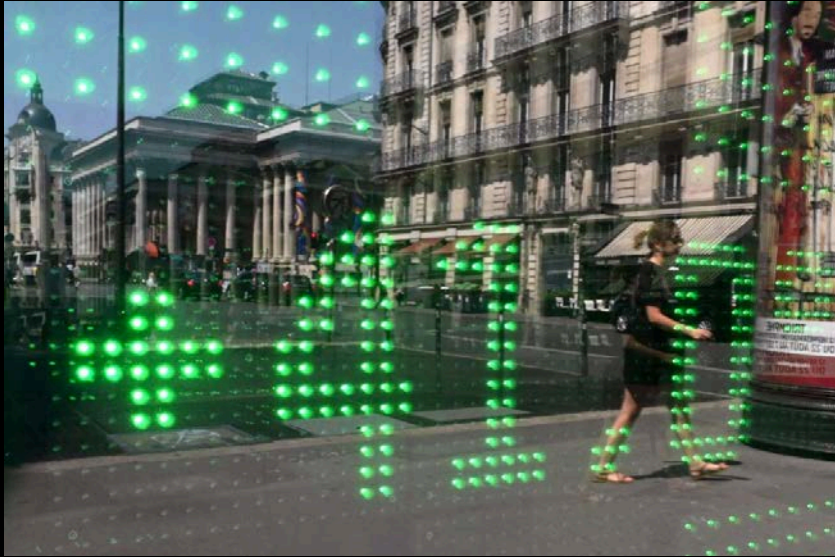


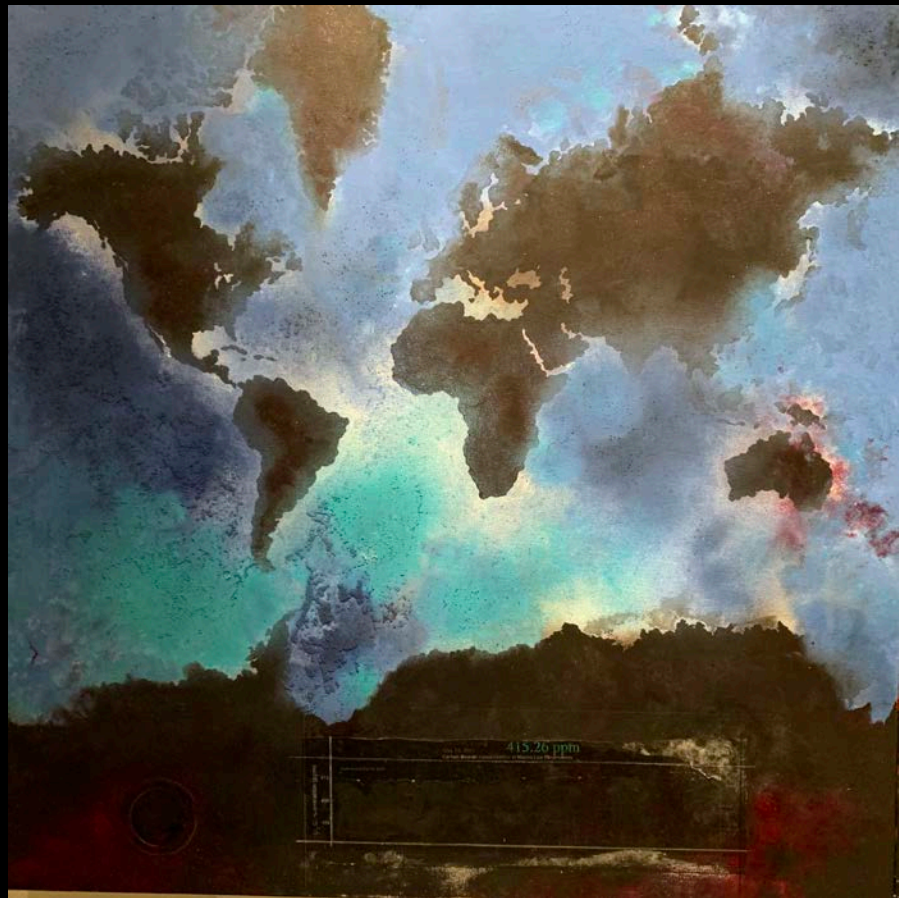






VISUALIZING GLOBAL WARMING







March, 2020

85 PERCENT OF REEFS IN THE CORAL TRIANGLE ARE THREATENED.....

THE CORAL TRIANGLE HAS MORE CORAL REEF AND FISH DIVERSITY THAN ANYWHERE ELSE. IT IS THE WORLD'S MOST ECOLOGICALLY DIVERSE AND ECONOMICALLY IMPORTANT MARINE AREA WHERE OVER 120 MILLION PEOPLE LIVE AND RELY ON ITS CORAL REEFS FOR FOOD, INCOME AND PROTECTION FROM STORMS.

MALAYSIA



VISUALIZING THE PANDEMIC









DISAPPEARING AMAZON – MELTING ICE SHEETS – BURNING FORESTS



www.dianeburko.com