# MAPPING MARINE HABITATS FROM OUTER SPACE TO UNDERSEA

# DOVE SATELLITES

Maps marine habitat across the Caribbean, guides optimal marine protected area design

### **GLOBAL AIRBORNE OBSERVATORY**



Reveals live coral and algal cover, identifies sites that can improve restoration outcomes

## **AERIAL** DRONE



Reveals coral species, evaluates the impact of habitat protection and restoration efforts

### SUB-SURFACE IMAGERY



# WHO USES THE MAPS?



**Conservation scientists** and practitioners



Marine protected area and fishery managers

International governments

Hotel and tourism associations

Educational

institutions



Catalyze conservation action and education by making vital habitat data readily available



Combining layers of information ensures that precise, detailed maps are generated and allows each of these methods to validate the data collected by the others.



Using revolutionary remote sensing technologies to advance large-scale coral reef and coastal conservation



# WHAT DO THE MAPS ALLOW US TO DO?

Promote effective marine spatial planning and management of protected areas

Quantify the economic and protection value of marine habitats to support policymaking

Determine sites for nature-based, climate resilience solutions for coastal communities

Identify areas for urgent coral restoration, including sites that improve survival rates





# MAPPING MARINE HABITATS FRÔM OUTER SPACE TO UNDERSEA

# **DOVE SATELLITES**

Constellation of satellites capturing images across ~60 million mi<sup>2</sup> of the Earth's surface per day

### **GLOBAL AIRBORNE OBSERVATORY**

Aircraft with a high-tech spectrometer GEO Global Airborne Observatory capturing images across an area the size of ~135,000 football fields per day

## **AERIAL DRONES**

Vehicles that fly over the ocean capturing images across an area the size of ~700 football fields per day

# SUB-SURFACE IMAGERY

**Divers and underwater drones** capturing images across an area the size of <1 football field per day

- Creates maps of coral reefs and other habitats across the Caribbean at a pixel size of 150 ft<sup>2</sup> **Guides optimal marine protected area design** and management planning
- Creates 3D habitat models at a pixel size of .1 10 ft<sup>2</sup> and reveals % live coral and algal cover Identifies sites that can improve survival rates a a a of outplanted corals
- Creates 3D habitat models at a **pixel size of 1 in<sup>2</sup>** and reveals individual coral species type **Evaluates the impact of protection and restoration** - An efforts on coral cover and reef complexity
  - Creates 3D habitat models at a pixel size of .01 in<sup>2</sup> and reveals coral health and growth rates **Determines if individual coral colonies are thriving** and creating habitat for marine life



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COVERAGE

**30% of the Earth's surface,** or ~60 million mi<sup>2</sup> per day

area the size of ~135,000 football fields per day

area the size of ~700 football fields per day

area the size of <1 football field per day



