

February 2022

ASU Julie Ann Wrigley
Global Futures Laboratory™
Arizona State University

Global Futures: **Now**



"It is a curious situation that the sea, from which life first arose, should now be threatened by the activities of one form of that life."

Rachel Carson, from The Sea Around Us

The Indian, Atlantic, Pacific, Arctic and Southern oceans are one interconnected global system covering more than 70 percent of the Earth's surface. I have spent more than three decades studying our planet's oceans and continental water systems, measuring isotopes and trace substances to understand the system's water masses and circulation, as well as its impact on our planet's climate and witnessing its rapid change. Oceans play a vital role in the dynamics of Earth's systems and provide critical services, including storage of excess heat, sequestering carbon dioxide, providing food, transportation routes,

raw materials and recreational opportunities, among others. In many ways, oceans contribute to commerce and employment worldwide. For some coastal communities, the ocean is life, acting as the primary source of nourishment, income and spirituality. Preservation is critical, yet human activities, including plastic and nutrient pollution, over-fishing, and excessive greenhouse gas emissions, continue to negatively affect marine environments. Today, we find that system, intricately entwined with other life-support systems, under threat from human activities. Decisions made by society over hundreds of years have set us adrift in uncharted waters, in search of a safe landing spot.

In recognition of the importance of the oceans for a better understanding of the Earth system as a whole, the Julie Ann Wrigley Global Futures Laboratory, headquartered in the Sonoran Desert, has extended its reach to transcend the boundaries of merely its surrounding landscapes. Working in partnership with government agencies, nonprofits and other universities, we are now positioned to conduct transdisciplinary ocean research to provide decision support for policy, conservation and future use.

As part of this extension, the Global Futures Laboratory announced in fall 2021 that the Pacific Regional Integrated Sciences and Assessments (Pacific RISA) center in Honolulu joined the laboratory. Also joining ASU in winter 2021 was the Bermuda Institute of Ocean Sciences (BIOS), one of the world's premier ocean science institutions. These programs expand the ocean-related activities of the Center for Global Discovery and Conservation Science and its many research programs in Hawai'i, to better understand how oceans and island environments adjust to human-induced change and to explore future states of our planet in a holistic fashion. The Pacific RISA Center, funded by a grant from the National Oceanic and Atmospheric Administration, furthers an ongoing program where scientists collaborate with Pacific Island communities to provide climate information and develop policies that manage risks and bolster resilience. The next phase of the initiative investigates equitable solutions in response to extreme events and compounding disasters. ASU-BIOS will expand BIOS's research and teaching activities by combining them with those of ASU faculty and research scientists who work across many disciplines on exploring sustainable futures of the ocean. Laboratory scientists and scholars are examining ocean physics, marine ecology, fisheries management, and marine biology. More than a dozen ASU faculty are contributing to the Life Below Water U.N. Sustainable Development Goal, and a partnership with Conservation International brings in research professors who have applied conservation expertise to teach the next generation of conservation leaders. And last fall, the Allen Coral Atlas completed global habitat maps of Earth's tropical, shallow coral reefs. In addition to documenting the health of the reefs, these highly detailed maps can assist in disaster recovery, conservation policy and sustainable coastal development.

The additions of the Pacific RISA Center and BIOS to the portfolio of the Global Futures

Laboratory represent a strengthening of ongoing ocean-related research and learning at ASU that brings together extraordinary faculty with partners from national and state governments, nonprofit organizations, and research universities and centers. These overlapping efforts will benefit students and lifelong learners with expanded course offerings, new possibilities for use-inspired research and a larger network to secure post-graduation employment.

As humanity continues to navigate uncharted waters, we must use research and new understanding to be the cartographers of the future. Discoveries will provide vital information to assess ocean health and relieve future pressures for positive worldwide outcomes. Providing science-based decision support for solving problems facing communities around the globe lies at the core of the vision of the Global Futures Laboratory - shaping a habitable future for all.



Peter Schlosser
Vice President and Vice Provost of Global Futures

News



Outlining a path to carbon neutrality

A team of Global Futures Scientists, led by Clark Miller and Lauren Keeler, collaborated with Arizona utility provider Salt River Project to outline four potential pathways for Arizona to reach a decarbonized future. “Promising carbon neutrality is one thing, getting to carbon neutrality is another.”

[Read more](#)



Are sunken warships havens for our ocean's corals?

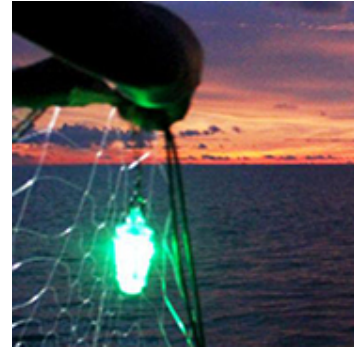
Greg Asner and a team from the Center for Global Discovery and Conservation Science along with partners from the University of Hawaii published a new article outlining their discoveries of developing biodiversity habitats on and around sunken warships in the southeast

Pacific.

[Read more](#)

Illuminating fishing nets leads to more efficient fishing practices

Jesse Senko, working with fishery experts from Mexico and Hawaii, determined that innovative fishing nets that deploy LED lighting significantly decreased otherwise discarded bycatch by more than 63 percent. The study also discovered that the lighting allowed for better collection of the nets, reducing the time to retrieve and disentangle by 57 percent.



[Read more](#)



New study examines how the Arctic plays a critical role in determining our global future

Peter Schlosser, Stephanie Pfirman and Clea Edwards recently published an article debunking the notion that the planet's Arctic systems are decoupled from Earth's greater health.

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Grant allows for digitization of ASU biocollections

ASU, home to one of the largest collections of Sonoran desert biota in the world, was awarded \$2.5 million to integrate this massive collection into a global digital portal. "There was this idea that we are connecting information with decision-making at the societal level. We provide the biodiversity component to that," said Global Futures Scientist Nico Franz, director of the center managing the collection.



[Read more](#)



Darlene Cavalier speaks to the importance of citizen science

In an interview with Discover magazine, the School for the Future of Innovation in Society professor of practice says, "There have been a number of projects that posed questions that just couldn't have been answered without help from the public."

[Read more](#)

What is bioengineered food?

Kathleen Merrigan, executive director of the Swette Center for Sustainable Food Systems, published a new article to The Conversation outlining exactly what the new U.S. Department of Agriculture's new bioengineered food labels mean.



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People



Two Global Futures Scientists elected as 2021 AAAS Fellows

School of Sustainability director Diane Pataki and professor Enrique Vivoni were among seven ASU faculty to receive this esteemed honor from the world's largest general science society. Sara Brownell who is affiliated with the Center for Biodiversity Outcomes was also recognized.

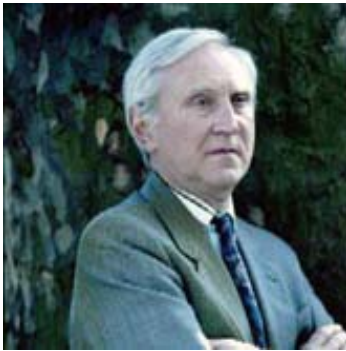
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Michael Barton, ASU lead establishment of Open Modeling Foundation

The new foundation will administer international community standards for computational modeling across social, ecological, environmental and geophysical modeling - enabling open, reproducible and integrated modeling science. "This was a historic moment that brought the international modeling community together as never before."

[Read more](#)

In memoriam: Sir Crispin Tickell



It is with sadness that we share the news of the passing of Sir Crispin Tickell, a giant ambassador of environmental wellness and long-standing champion of the sustainability work being done at ASU. Sir Crispin was 91-years old. He was the author of *Climate Change and World Affairs* in 1977 and was a key guide in Great Britain's environmental policy over the course of three decades. Sir Crispin served on the ASU Board of Sustainability and was a Senior Sustainability Fellow and Advisor at Large for ASU.

[Read more](#)

Upcoming events



Food Systems Career Panel

Join us for the virtual annual career panel hosted by the ASU Swette Center for Sustainable Food Systems. This event will give students pursuing careers in food systems, sustainability, and agribusiness a better understanding of their career options after graduation. Panelists with experience in private, non-profit, and government organizations will offer insights into the field.

March 18, 2022

Sun Devil Giving Day

ASU invites you to consider the causes you care about and support them with a gift in honor of Sun Devil Giving Day. When you rally around the ASU community, you're doing more than investing in higher education. You're creating positive societal impact and meaningful change in our communities. Every gift makes a difference.

March 17, 2022