

CPN Newsletter



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Diversity, Equity, and Inclusion Statement:

The CPN upholds a commitment to diversity, equity, and inclusion as a core value. We seek to build on this commitment by striving to create an inclusive community whose members represent diverse cultures, backgrounds, career stages, and life experiences. This commitment is critical to strengthening our relevance, credibility, and effectiveness within the field of conservation paleobiology and broader STEM community. Through these efforts, we strive to transform the field in practice, while diversifying the face of conservation paleobiology for the future.

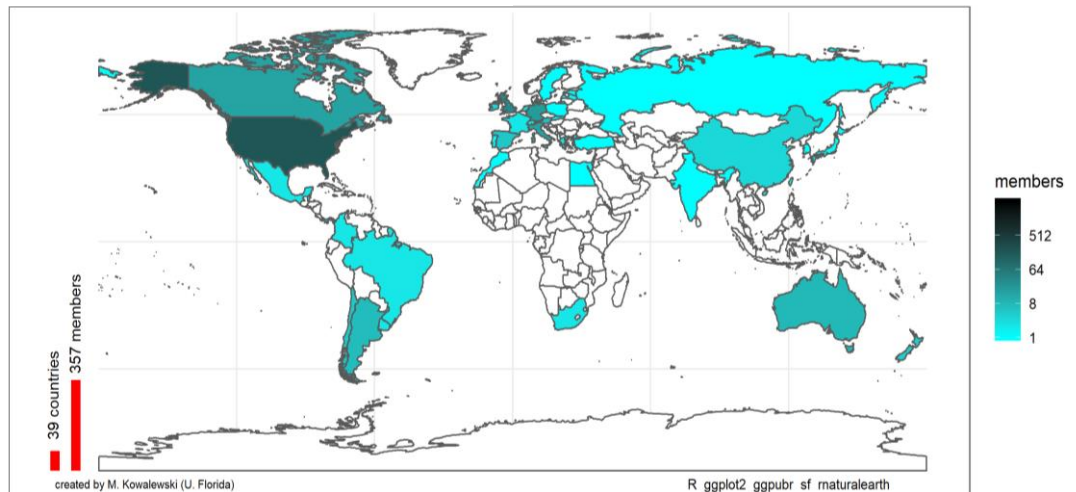


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Inaugural Issue of CPN Newsletter

We welcome you to the network and are thrilled that so many of you have joined! We are also delighted by the many enthusiastic comments we have received from the newly enrolled members, and **we hope that you will contribute to expanding the network** and promoting its activities. We look forward to engaging this broad and growing community. We hope to foster links between researchers

and practitioners to achieve conservation goals. The community so far consists of a diverse group of paleobiologists, archaeologists, historical ecologists, geoscientists, conservation biologists and diverse stakeholders. Our incipient network community and our steering committee are already multidisciplinary and extend beyond academia.



Current global membership map of the CPN

Building the Community

The goal of the network is to integrate and translate historical approaches to better serve the conservation and management of ecosystems and organisms.

To ensure effective progress toward this goal, the early phase of the CPN has been led by our initial planning team.

However, with your collective help, we aim to gradually transition from top-down governance to a community-driven effort. In the forthcoming months we will be inviting all members to engage in CPN activities and governance.

Our ultimate goal is to evolve our network into a sustainable and self-governing “Community of Practice”.

But, what is our long-term agenda? The CPN is still nascent so there is flexibility for the network to progress in different directions as we develop our long-term agenda. We will value your input as we move forward as a community of practice.

Please join us in determining the future of this initiative. Our ultimate goal is to facilitate conservation by using data from across temporal scales. We look forward to hearing from you soon!

Conservation Paleobiology Research Highlight

By Katie Cramer

Local human activities began disrupting Caribbean coral populations decades before coral disease and bleaching outbreaks

If coral reefs are the rainforests of the sea, then corals from the *Acropora* genus are the tall canopy trees. Acroporids typically grow much faster and taller than other corals and play an outsized role in reef habitat complexity and carbonate production. Although Indo-Pacific reefs contain about 150 *Acropora* species, Caribbean reefs only contain two: the branching elkhorn (*A. palmata*) and staghorn corals (*A. cervicornis*). These two corals therefore have VIP status on Caribbean reefs.

When researchers first began to intensively study Caribbean reefs in the late 1970s, many shallow reef zones were dominated by extensive thickets of elkhorn and staghorn colonies. Less than a decade later, these researchers began reporting *Acropora* die offs across the Caribbean. These deaths have been mainly attributed to regional and global disturbances, including outbreaks of disease affecting *Acropora* and algae-controlling sea urchins, coral bleaching from warming oceans, and strong hurricanes intensified by climate change. Today, over 80% of the populations of elkhorn and staghorn corals have been lost, and these corals are listed as critically endangered under the U.S. Endangered Species Act.

What are the root causes of the disappearance of Caribbean acroporid corals? The lack of baseline ecological data prior to the 1970s has prevented a full accounting of the timing and mechanisms of change. For example, paleoecological, archeological, and historical data show that humans have been negatively impacting Caribbean reefs via fishing and land-based pollution for centuries or more. Did these local human impacts play a role in *Acropora* loss?

To help resolve this, we compiled a large dataset of paleoecological, historical, and modern survey data to track the presence and dominance of elkhorn and staghorn corals over the past 125,000 years across the Caribbean. We found that these corals first began declining in the 1950s and 1960s, one to four decades before outbreaks of coral and urchin disease and coral bleaching.

This early timing implies that longer-standing local stressors such as fishing and land-based pollution (rather than coral disease and bleaching) initiated *Acropora* loss. In fact, Caribbean *Acropora* corals were relatively rare by the onset of coral bleaching: the proportion of sites dominated by elkhorn and staghorn coral had already declined from 78 to 22% and 63 to 4% since the Pleistocene!

Relating trends in *Acropora* dominance since the 1950s to a suite of potential stressors confirmed the role of local human activities. Although ocean warming and hurricanes did not affect *Acropora* dominance, elkhorn coral dominance was affected by human population density and fertilizer usage.

These results have direct conservation and management implications. The recovery plan required for *Acropora* under the Endangered Species Act cites coral disease, hurricanes, and coral bleaching as the primary drivers of *Acropora* loss and the main threats to their recovery, whereas our work demonstrates the major role of local human activities. Therefore, management bodies need to critically reassess the full range of threats to Caribbean *Acropora* recovery and must prioritize and enforce the mitigation of local stressors alongside climate change.

Photo caption: Critically endangered elkhorn (background) and staghorn corals (foreground). These branching corals once dominated shallow Caribbean reef zones. Photo from Florida Keys, 1965. (Photo credit: Gene Shinn)



For more details please see article by Cramer and colleagues in *Science Advances*: [DOI:10.1126/sciadv.aax9395](https://doi.org/10.1126/sciadv.aax9395)

*“The early timing of initial *Acropora* loss in the 1950s and 1960s suggests that longer-standing local stressors such as fishing and land-based pollution (rather than coral disease and bleaching) are to blame.”*

A Note on the Listserv

As a CPN member, you have been added to our listserv (CPN-L@lists.ufl.edu). We will use the listserv to communicate with you through newsletters, and post information about upcoming events such as field courses and annual meetings, as well as CPN output such as webinars. We also hope that you will **embrace the listserv as tool to communicate with the network**. Please submit posts to the listserv when you would like to share something or solicit advice from the community. As we evolve the network, we might explore additional avenues and platforms for member communication and community building. We welcome your suggestions on how to grow and maintain the network as a community.

CPN Planning Team

For more details see our "Planning Team" at <https://conservationpaleorcn.org/planning-team/>

Currently, the planning team includes the **Steering Committee**, the **Advisory Group**, and the following six **Panels**.

Panels

1. Working Groups Panel
2. Field Courses Panel
3. Webinars Panel
4. Annual Meeting Panel
5. Student Panel
6. Diversity, Equity, and Inclusion Panel

We plan to recruit additional panel members from among network participants.

Invitations to nominate members to specific panels (self-nominations are welcome) will be distributed to the membership list by panel chairs in the near future.

Some members of the steering committee, advisory group, and panels will rotate out every year. There will be abundant opportunities for interested members to engage in CPN governing activities.

In the next several issues of this newsletter, we will provide in-depth introductions to our steering committee, advisory group and each of our panels.

We welcome suggestions regarding additional activities that should be developed.

For Students

Calling all students! On behalf of the Student Panel, we would like to welcome you to the CPN. The Student Panel is the student-led leadership group within the CPN. Our goals are to (1) engage the student membership, (2) facilitate networking between students as well as between students and faculty members, postdocs, practitioners, and stakeholders, and (3) organize resources, trainings, and community-building activities to help prepare students for future careers in conservation paleobiology.

Want to get involved in the student community? There will be many opportunities to engage at different levels, from participating in online workshops and discussions to joining the panel leadership. But first, we want to hear from you. We will soon be sending out a short survey to solicit your input regarding what you'd like

to see from the Student Panel in terms of resources, workshops, and ways to engage with the CPN.

We will also be creating a student Slack group so you can connect with other students, stay up-to-date with network news, and learn about new opportunities. All are welcome to participate, and you can subscribe to different channels to tailor the notifications to your interests. We will send around instructions on how to join the group later this month.

Interested in joining the leadership team? We will soon be opening the application to recruit additional members to the Student Panel, so stay tuned for more information. All undergraduate, Master's, and PhD students are eligible to apply.

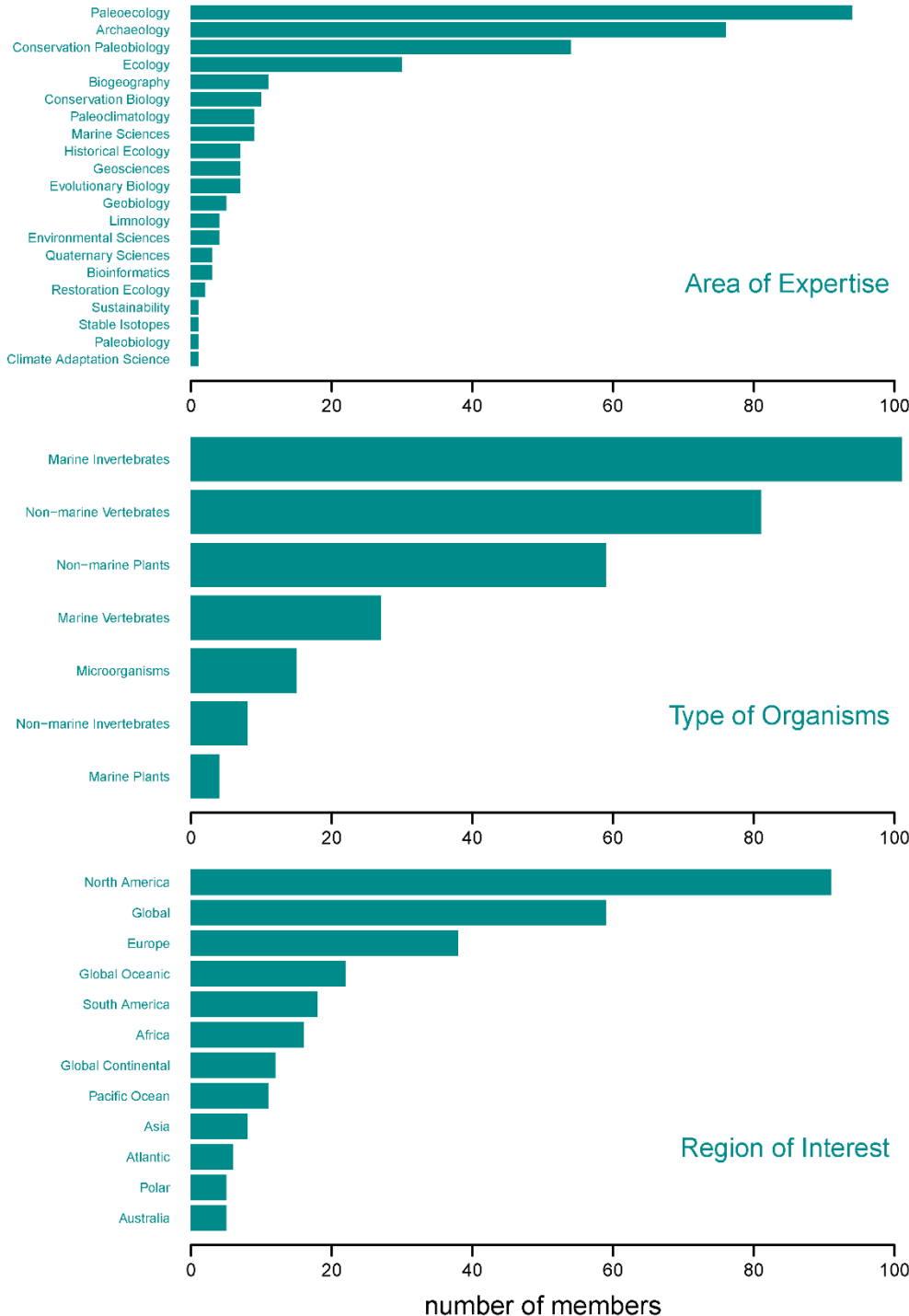
We look forward to working together to build our Community of Practice. Our success depends on your participation.

There are opportunities for interested members to engage directly in the CPN governing activities.



Meet the Network

As of May 2020, our network includes 357 members. Most of our members volunteered optional information when filling out the enrollment form. Thank you! Below is a summary of who we are in terms of our expertise, geographic regions of interest, and the primary organisms we study.



Paleontology and archaeology are the two dominant expertise areas, but many other disciplines of natural sciences are also represented.

The majority of our current members focus on marine invertebrates or terrestrial vertebrates and plants. Nevertheless, other groups of macro-organisms and microorganisms are represented.

The current focus on the North American continent is not surprising, given the current geographic distribution of our members (see page 1). However, many of our members focus globally.





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Are you interested in:

- ...contributing new content to our newsletter?
- ...joining our editorial board?
- ...becoming our newsletter editor?
- ...sharing your story involving historical approaches to conservation?
- ...providing content suggestions for this newsletter?

If **yes**, please email us at conservationpaleo@floridamuseum.ufl.edu

Invite Your Colleagues to Join our Network!

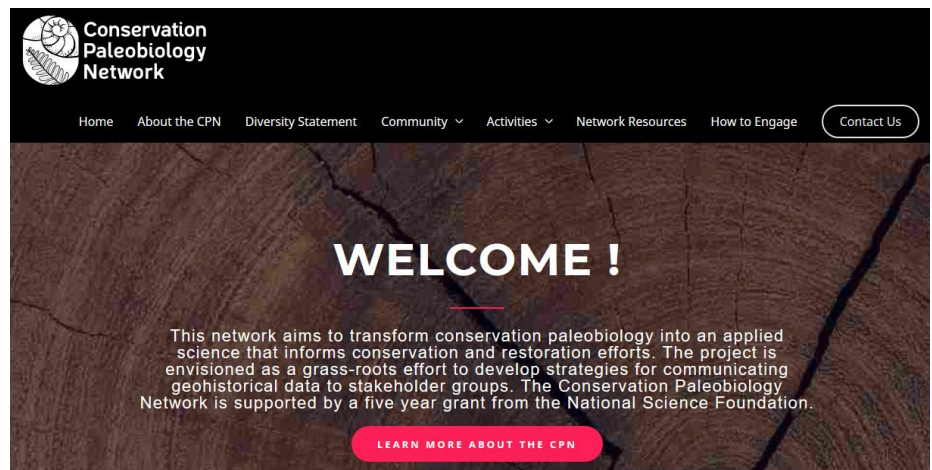
If you know people who might be interested in our network, please invite them to join. You can use the link below to extend your invitation on behalf of our network.

By joining the network, you become a member of our Community of Practice. The membership does not impose any obligations but enables participants to engage fully in network activities. Members will be able to:

1. Participate in the CPN mailing list and online forum
2. Vote on future elections to CPN committees and panels
3. Nominate and self-nominate for committees and panels
4. Submit announcements for publication on the CPN website
5. Apply to participate in the CPN activities
6. Submit proposals for CPN field courses and CPN working groups
7. Submit proposals for webinar modules

To join please go to: <https://conservationpaleorcn.org/contact/>

Visit the website! <https://conservationpaleorcn.org/>



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