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Conservation Aquaculture Research Team seeks to spark innovation, collaboration

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By Halley E. Froehlich, Ph.D.

Newly formed group aims to bridge knowledge gaps between aquaculture, climate change and larger food systems

The author at a Juneau, Alaska, salmon hatchery.

Aquaculture is growing rapidly globally, but ecological science and conservation around aquatic farming have not kept pace.

Aquaculture now produces more edible biomass than either wild seafood or beef, making it a central part of our global food system. Substantial efforts and investments have been made to align agriculture and fisheries with conservation objectives, yet few such steps have been taken for aquaculture. The Conservation Aquaculture Research Team (**CART** (http://www.cart-sci.org)) wants to change that.

Based at the National Center for Ecological Analysis and Synthesis (NCEAS) in Santa Barbara, Calif., USA, CART is the next phase of the recently completed Science for Nature and People Partnership (SNAPP) Sustainable **Open-Ocean Aquaculture** (https://www.aquaculturealliance.org/advocate/do-you-know-offshore/?__hstc=236403678.2b9bb1ab99bfd54d53b88b74799fa74e.1681036939252.1681036939252.1681036939252.1&__hssc=236403678.1.1681036939254&__hsf Expert Working Group.

As CART co-founders Dr. Ben Halpern and I (Dr. Halley Froehlich) lead scientists on the SNAPP working group, we see the potential for science to do more and go further. Through the use of **synthesis science** (http://www.bren.ucsb.edu/academics/documents/BrenNCEASPuzzle_ESM449_S15.pdf) and continued collaborations with global partners – including The Nature Conservancy (TNC) and the National Oceanic and Atmospheric Administration (NOAA) – CART builds off SNAPP research to explore critical and understudied aspects of aquaculture and the environment across ecosystems.

We see CART's primary mission as bridging the scientific gap in understanding between aquaculture, climate change and larger food systems to inform policy and help align seafood production with conservation objectives. Some of our upcoming research begins to quantify the implications of changing ocean conditions (e.g., warming temperatures and ocean acidification) for aquaculture, as well as linkages to the terrestrial environment through feed (e.g., soy), all while considering local- to global-scale conservation issues on land and in the oceans.

CART is the new face of aquaculture science – a scientific startup created by scientists leveraging key partnerships in order to drive progress in a field that has garnered less attention.

While we have great scientific aspirations for CART, the collaboration between organizations, like TNC and NOAA, are paramount. Through new and existing partnerships we intend to have our science go beyond publications to reach the public, policy makers and industry. We're surrounding ourselves with on-the-ground experts to help identify key questions and move the science forward in the real world.

CART is the new face of aquaculture science – a scientific startup, of sorts, created by scientists leveraging key partnerships in order to drive progress in a field that has garnered less attention. It takes substantial support from agencies and organizations for science to inform decisions and have an impact. We hope to be a key part of that impact by creating a connection point of new and innovative science with people and organizations across the intersecting fields of aquaculture, fisheries and conservation, on land and in the oceans.

For more information please **visit our website** (http://www.cart-sci.org/).

Author

HALLEY E. FROEHLICH, PH.D.

Postdoctoral Researcher
National Center for Ecological Analysis & Synthesis
University of California, Santa Barbara

froehlich@nceas.ucsb.edu (mailto:froehlich@nceas.ucsb.edu)