

Aquatic Research and Environmental Assessment Center

Brooklyn College, City University of New York



Biennial Report 2024-2026



Credit: R. Dickie.

AREAC researchers investigate salinity tolerance of round goby (*Neogobius melanostomus*) to inform spread risk for this introduced species in the Hudson River and connected coastal waters.

AREAC: History, Mission, and Facilities

The Aquatic Research and Environmental Assessment Center (AREAC) was founded in 1997 by Dr. Martin Schreiber, Distinguished Professor at Brooklyn College. The mission of AREAC is to serve as a hands-on experimentation laboratory and a center of innovation for aquatic ecosystem sustainability science. Themes at AREAC include: 1) fisheries and aquaculture science, 2) environmental assessment and management, and 3) biology and ecophysiology of aquatic organisms. AREAC's goal is to serve as a primary aquatic research and education facility for Brooklyn College, CUNY campuses, and external cooperators including city, State, and Federal agencies. AREAC welcomes students and faculty at Brooklyn College and the City University of New York to participate in aquatic research and educational opportunities.

AREAC is on the campus of Brooklyn College in the New Ingersoll building. AREAC consists of three brick and mortar facilities along with office spaces for faculty, staff, and students. The aquaria facility is a 7,000 sq. ft set of rooms plumbed with air and re-circulating water systems dedicated to basic and applied studies of aquatic organisms. Our tank systems allow control of temperature, salinity, and photoperiod for aquatic experiments. Seawater is artificially prepared from filtered New York City municipal water with added salt. Adjacent to the aquaria facilities are 2,000 sq. ft of analytical lab space for environmental chemistry and biology. Finally, the AREAC greenhouses sit atop Ingersoll Extension roof space on the Brooklyn College campus. Our greenhouse spaces are primarily used for aquatic ecosystem and soil biogeochemistry studies, but they also support community outreach and engagement activities including plant starting facilities and aquaponics demonstration projects.

AREAC Directors:

Suresh A. Sethi, 2023-present

Frank Grasso, 2022-2023

John Marra, 2007-2022

Martin Schreiber, Founding Director, 1997-2007

AREAC Lab Manager:

Rob Dickie, 2009-present

AREAC website:

<https://www.brooklyn.edu/areac/>

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This biennial annual report covers activities at AREAC over the 2024-2026 academic years.

Director's corner

The 2024-2026 academic years have been productive for our AREAC community. We expanded our education contributions to the Brooklyn College and CUNY system with the launch of our new course, EESC 4350 Sustainable Fisheries & Aquaculture in the Earth and Environmental Science program (pg. 6). This experiential course provides students an opportunity to gain hands-on practice with aquaculture systems hosted at AREAC, along with lecture content on fisheries and fish food systems. We hope to offer this course annually and inspire the next generation of aquatic food systems scientists and professionals at Brooklyn College.

AREAC cooperators continue to be productive. Recent highlights include:

- Dr. Tony Wilson (Biology, Brooklyn College) and Dr. Brett Branco (Science and Resilience Institute at Jamaica Bay, Brooklyn College) successfully renewed the NSF-funded Brooklyn Research Experiences for Undergraduate 'Brooklyn Urban Ecology and Environment Program'
- AREAC collaborators contributed 30 peer-reviewed publications related to activities at our facilities
- AREAC Director, Dr. Suresh A. Sethi was awarded the CUNY Krase-Cooper award for outstanding research
- Graduate student Mr. Frank Ye (Sethi lab, passive acoustic monitoring of the Hudson River aquatic noisescape) was selected for the internationally competitive SeaBASS Bioacoustics Training Program hosted this past year at Syracuse University.
- AREAC collaborators opened up new lines of work between CUNY and NY Department of Environmental Conservation to support commercial fisheries management in marine waters of the state.

Looking forward, we continue to work with CUNY central and Brooklyn College planning staff to advance much needed renovations at our AREAC facilities. While we are still in the design stage, funding is secured and we look forward to renewed aquatic tank and lab spaces in the coming years.

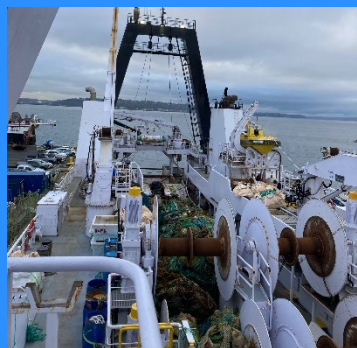


Fishing boats at the Montauk pier, Long Island NY. Credit: S.A. Sethi

AREAC Research Activities

Research activities at AREAC span field studies, lab bench experimentation, animal studies, and ‘desktop’ analyses related to aquatic ecology and aquatic ecosystem science. Select current research activity highlights among AREAC’s three core themes are provided below. A complete list of current research activities is provided in Table 1.

Fisheries and aquaculture science



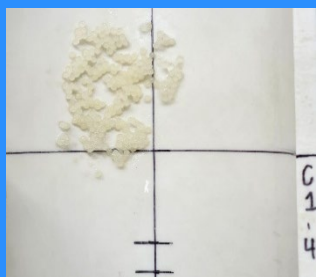
Challenges and opportunities for global bottom-tow gear fisheries—Bottom-tow fisheries produce 24 million metric tons of seafood annually and represent one of the world's most important wild animal-sourced food systems. Maintaining the sustainability of these food systems is increasingly complex as anthropogenic and natural disturbances in the world’s oceans mount. AREAC Director Dr. Suresh A. Sethi co-led an international working group of 30+ science, management, conservation, and commercial fisheries professionals to identify key challenges impeding bottom-tow fisheries sustainability and solutions to address them. The group’s work culminated in a synthesis report that provides a practical resource for researchers, managers, and the fishing industry seeking collaborative, science-based approaches to improve the sustainability of bottom-tow fisheries Photo: A pelagic trawler sits in dock in Seattle (credit: S.A. Sethi).

Environmental assessment and management



Characterizing the aquatic noisescape of the Hudson River—Many aquatic species make and utilize sound as part of their life histories, and understanding the effect of anthropogenic noise on fishes is an emerging area of environmental science to support aquatic ecosystem management. Mr. Frank Ye, M.S. graduate student at AREAC, is quantifying the Hudson River ‘noisescape’ using bioacoustics monitoring approaches. In a collaboration involving the NY Department of Environmental Conservation, Cornell, and Brooklyn College, Frank is analyzing acoustic recordings collected throughout the Hudson River estuary to assess the magnitude and component sources of anthropogenic noise in the river. Frank’s work will help inform whether anthropogenic noise could be affecting Hudson River biodiversity and will contribute to identifying opportunities to mitigate potentially harmful noise sources. Photo: Bioacoustics recorders ready for deployment in the Hudson River estuary (credit: R. Cohen).

Biology and ecophysiology of aquatic organisms



Round goby salinity exposure—The benthic fish Round goby (*Neogobius melanostomus*) was first introduced into the Great Lakes from central Europe in the mid 1990s. This freshwater species can reach high abundance and can change energy flows in invaded aquatic food webs. By moving through shipping canals, Round gobies have now reached the Hudson River and are establishing populations at the interface of river and marine ecosystems. Lab Manager Rob Dickie is leading experimental work in AREAC to investigate the ability of round goby to survive marine salinity exposure. His work is informing the spread risk of this species as it expands into estuary environments in North America. Photo: A round goby egg clutch laid by fish that had recovered after spending 6 weeks in high salinity conditions (credit: R. Dickie).

Table 1. Current research activities at AREAC.

Project	Investigators	Thematic area
Reproductive plasticity of round goby in coastal environments	Mr. Rob Dickie Dr. Suresh A. Sethi	Biology & ecophysiology of aquatic organisms
Neural adaptations to living in noise: oyster toadfish communication in NYC waters	Dr. Paul Forlano	Biology & ecophysiology of aquatic organisms
Auditory efferent systems in underwater urban soundscapes with differential anthropogenic noise	Dr. Paul Forlano	Biology & ecophysiology of aquatic organisms
Hormonal and acoustic regulation of the dopaminergic auditory efferent system	Dr. Paul Forlano	Biology & ecophysiology of aquatic organisms
Fiddler crab mating behavior	Dr. Frank Grasso	Biology & ecophysiology of aquatic organisms
Assessing Atlantic sturgeon spawning beds with passive acoustic monitoring in the Hudson River Estuary	Dr. Suresh a. Sethi	Biology & ecophysiology of aquatic organisms
Genomic diversity, adaptive immunity and immune memory	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms
Relative parental investment in nearshore pipefish	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms
Sex determination in the seahorse	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms
In Vitro synthesis of hippocampus immunoglobulin	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms
Multiple mating in <i>Syngnathus fuscus</i>	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms
Quantifying water treatment infrastructure improvements impact on Jamaica Bay water quality	Dr. Brett Branco & SRIJB* Ms. Danielle Alexander Ms. Mojgan Zamani Dr. Suresh A. Sethi	Environmental assessment & management
Alley Creek wetland pathogen reduction and Bergen and Thurston basins ribbed mussel performance	Dr. Brett Branco & SRIJB*	Environmental assessment & management
NYC-Copenhagen Sister City partnership on urban climate resiliency (NYC DEP & City of Copenhagen)	Dr. Jennifer Cherrier	Environmental assessment & management
NYC Watershed scale planning-NYC DEP	Dr. Jennifer Cherrier	Environmental assessment & management
Aquatic habitat response to small dam removal in the Hudson River valley	Dr. Suresh A. Sethi	Environmental assessment & management
Assessing the impact of non-native submerged aquatic vegetation on biodiversity in the Hudson River Estuary	Dr. Suresh A. Sethi	Environmental assessment & management
Characterizing the Hudson River aquatic noisescape with bioacoustics monitoring	Mr. Frank Ye Dr. Suresh A. Sethi	Environmental assessment & management
Dynamic soil properties and soil health in urban areas: rates, drivers and implications for urban soil survey	Dr. Zhongqi Cheng	Environmental assessment & management
Husbandry and reproductive behavior of the striped cusk eel	Dr. Paul Forlano	Fisheries & aquaculture science
Co-robotics fisheries acoustics surveys on the Great Lakes: integrating autonomous vehicles and crewed vessels	Dr. Suresh A. Sethi	Fisheries & aquaculture science

Project	Investigators	Thematic area
Challenges and opportunities for global bottom-tow gear fisheries sustainability	Dr. Suresh A. Sethi	Fisheries & aquaculture science
Modernizing NY commercial fisheries reporting: comparison of electronic and paper commercial fisheries log book data flows	Dr. Suresh A. Sethi	Fisheries & aquaculture science
Quantifying impacts of processing constraints on NY commercial fisheries sustainability	Dr. Suresh A. Sethi	Fisheries & aquaculture science

*Science and Resilience Institute at Jamaica Bay (Brooklyn College)

AREAC Education and extension Activities

AREAC facilities provide the Brooklyn College community hands-on education and outreach experiences in aquatic ecosystem science. AREAC hosts tours, provides demonstration workshops, and supports multiple Brooklyn College courses. AREAC also facilitates extension activities at Brooklyn College, including providing space for student groups related to ecosystem sustainability and providing greenhouse resources for urban gardening programs. AREAC's educational and extension activities are detailed in Table 2.

This year, we launched our newly developed flagship undergraduate AREAC course at Brooklyn College:

EESC 4350 Sustainable Fisheries & Aquaculture.

Our experiential learning course combines instruction about global fisheries and aquaculture sustainability in parallel with a semester-long hands-on recirculating aquaculture system course project. Students design, build, and maintain a blue tilapia (*Oreochromis aureus*) aquaculture system, gaining firsthand practical experience in aquaculture to complement lecture material. We were at full capacity this initial course offering and received excellent feedback from students. We thank the inaugural 2026 student cohort for a great course experience!



Brooklyn College students tend to aquaculture systems in AREAC.

Table 2. Education and extension activities supported through AREAC facilities and staff.

Activity	AREAC collaborators	Category
Brooklyn college Earth & Environmental Sciences 4310 Coastal Watersheds & Estuaries	Dr. Jennifer Cherrier	Education
Brooklyn college Earth & Environmental Sciences 7916 Case Studies in Urban Systems capstone projects	Dr. Jennifer Cherrier	Education
Introductory workshops on aquatic science, tours, and mentorship for the Brooklyn College Now high school to university education transition program	Mr. Rob Dickie Dr. Tony Wilson	Education
Short course and tours on aquatic science for the Brooklyn College CSTEP student education and mentorship program	Mr. Rob Dickie	Education
Provided facilities to support urban gardening undergraduate courses at Brooklyn College	Mr. Rob Dickie Dr. Pieranna Pieroni	Education
Brooklyn College AREAC undergraduate course EESC 4350 Sustainable Fisheries and Aquaculture Sustainability	Dr. Suresh A. Sethi Mr. Rob Dickie	Education
REU: Brooklyn Urban Ecology and Environment Program	Dr. Tony Wilson Dr. Brett Branco	Education
Urban Barcode research program	Dr. Tony Wilson	Education
Brooklyn College – Propsect Swims (propsectswims.org) partnership	Dr. Jennifer Cherrier	Extension
Provided space for the Brooklyn College Sustainability Club meetings	AREAC general	Extension

Activity	AREAC collaborators	Category
Provided seedling facilities for the Brooklyn College community garden program BC Eats	Dr. Pieranna Pieroni	Extension
Provided facilities tour for Brooklyn College high school student admissions events	Mr. Rob Dickie	Tour
Brooklyn College new student orientation facilities tour	Mr. Rob Dickie Dr. Suresh A. Sethi	Tour
Provided an introduction on aquaponics and aquaculture science for the Brooklyn College SEEK undergraduate education and mentorship program	Mr. Rob Dickie	Tour
Provided a facilities tour for the Brooklyn College Cherry Blossom Festival	Mr. Rob Dickie	Tour
Provided facilities tour for over 40 prospective transfer students considering Brooklyn College	Mr. Rob Dickie Dr. Suresh A. Sethi	Tour

AREAC Funding

AREAC receives support for facilities and staff from Brooklyn College, whereas our research and internship activities are supported primarily through external grants. Grantsmanship by collaborators working with AREAC facilities is active, generating significant financial resource flows to Brooklyn College and CUNY. Combined, AREAC facilities currently support activities on grants led by Brooklyn College principal investigators totaling over \$5.5M (Table 3).

Table 3. Grants led by CUNY principal investigators associated with AREAC activities.

Project	Lead Investigators	Thematic area	Source	Funding amount
Auditory efferent systems in underwater urban soundscapes with differential anthropogenic noise	Dr. Paul Forlano	Biology & ecophysiology of aquatic organisms	PSC-CUNY	\$14,600
Hormonal and acoustic regulation of the dopaminergic auditory efferent system: improving detection of social acoustic signals at the level of the inner ear	Dr. Paul Forlano	Biology & ecophysiology of aquatic organisms	U.S. National Institute of Health	\$462,000
Salinity tolerance of invasive round goby	Dr. Suresh A. Sethi	Biology & ecophysiology of aquatic organisms	NY Water Resources Institute	\$39,000
MCA: Genomic diversity, adaptive immunity and immune memory	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms	U.S. National Science Foundation	\$372,000
Adaptive immunity and immune memory	Dr. Tony Wilson	Biology & ecophysiology of aquatic organisms	Tow Faculty Research and Creativity Grant	\$1,200
Alley Creek wetland pathogen reduction and Bergen and Thurston basins ribbed mussel performance	Dr. Brett Branco & SRIJB*	Environmental assessment & management	NY Department of Environmental Protection	\$3,100,000
Dynamic soil properties and soil health in urban areas: rates, drivers and implications for urban soil survey	Dr. Zhongqi Cheng	Environmental assessment & management	U.S. Dept. of Agriculture NRCS	\$438,000
Monitoring NWF-RISC's dune restoration project at Coney Island Creek Park	Dr. Jennifer Cherrier	Environmental assessment & management	National Wildlife Federation	\$17,700
Spatial dynamics of Atlantic sturgeon spawning in the Hudson River assessed with passive acoustic monitoring.	Dr. Suresh A. Sethi	Environmental assessment & management	NY Water Resources Institute	\$25,000
Evaluating mysid abundance in Lake Ontario	Dr. Suresh A. Sethi	Environmental assessment & management	NY Sea Grant	\$240,000
REU: Brooklyn Urban Ecology and Environment program	Dr. Tony Wilson Dr. Brett Branco	Environmental assessment & management	National Science Foundation	\$482,000
REPS supplement: Brooklyn Urban Ecology and Environment program	Dr. Tony Wilson	Environmental assessment & management	National Science Foundation	\$22,000
New York state commercial fisheries monitoring: Vessel Trip Report analysis	Dr. Suresh A. Sethi	Fisheries & aquaculture science	NY State Dept. of Environmental Conservation	\$340,000

*Science and Resilience Institute at Jamaica Bay (Brooklyn College)

AREAC Publications

As a primary research facility, investigators at AREAC are leading cutting-edge science spanning a range of fields including commercial fisheries science, evolutionary biology, stormwater management, and urban food production, among others. Publications associated with activities at AREAC facilities or personnel over the 2024-2026 academic years are provided below.

- Alvarez del Castillo K, **Sethi SA**, Won ET, Maniscalco J, Rudstam LG (2026) Assessing Round Gobies invasion risk in the Hudson River Estuary and adjacent coastal waters. *Transactions of the American Fisheries Society*, 155:323-337.
- Alvarez del Castillo K, **Sethi SA**, Won E, Maniscalco J, Pendleton R, Ryan E, Rudstam LG (2025) Salinity tolerance of Round Gobies: Informing invasion potential in North American coastal watersheds. *PLoS ONE*, 20:e0316327
- Brown TA, Rudstam LG, **Sethi SA**, ..., Honsey AE (2025) Reconstructing half a century of Coregonine recruitment across the Laurentian Great Lakes revealed species-specific dynamics. *ICES Journal of Marine Science*, 82:fsae160.
- Cabrera-Rivera LT, Delgado A, Maroko A, **Sethi SA**, Midya V, Chowdhury M, **Branco B**, Kavouras I, Nabeel I (2026) Linking precipitation-driven flooding events to acute respiratory illness in New York City. *The Journal of Climate Change and Health*, 29: 100697.
- Cantis PH, McPhearson T, Rosenzweig B, ..., Montalto FA, **Cherrier J** (2025) Expanding frameworks: integrating vulnerability, exposure, and critical infrastructure to assess pluvial flood risks in New York City. *PNAS*, 123:e2520315122.
- Cohen RE, Baker PM, Bowser CH, ..., **Sethi SA**, White S, Rice AN (2025) Sounds of Atlantic Sturgeon spawning: first description and opportunities for riverine endangered species conservation with passive acoustic monitoring. *Endangered Species Research*, 58:1-14.
- Dietrich J, Rickard A, **Sethi SA**, Cuppett S, Sullivan P (2025) Aquatic habitat response to small dam removal demonstrates aquatic habitat recovery in three years. *Ecosphere*, 16:e70323.
- DuFour MR, Evans TM, Rudstam LG, **Sethi SA**, ..., Esselman PC (2026) Evaluating the use of uncrewed surface vessels to enhance Lake Erie acoustic prey-fish surveys. *Fisheries Research*, 297:107713.
- Ghanbari M, Dell T, Saleh F, Chen Z, **Cherrier J**, ..., Arabi M (2024) Compounding effects of changing sea level and rainfall regimes on pluvial flooding in New York City. *Natural Hazards*, 120:6377-6400.
- Greenstreet L, Shi Q, Grimson M, Simon FW, **Sethi SA**, Gomes CP, Lodi A, Shmoys DB (2025) Reducing income variability in natural resource portfolios via integer programming. *Proceedings of the 22nd International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR)*.
- Harris BP, **Sethi SA**, Restrepo F, Grabowski JH, Stokesbury K (2025) Natural and fishing disturbances combine to drive seafloor conservation outcomes from spatial closures on Georges Bank. *Biological Conservation*, 302:110883.

- Heilpern S, Flecker AS, Lopez-Casas S, McIntyre PB, Moya L, **Sethi SA**, Fiorella KJ (2025) Aligning conservation and public health with nutritious, low mercury and resilient fishes. *One Earth*, 8: 101174.
- Heilpern S, Simon F, **Sethi SA**, Fiorella K, Flecker AS, Gomes C, McIntyre PB (2025) Leveraging biodiversity to maximize nutrition and resilience of global fisheries. *Nature Sustainability*, 8:753-762.
- Hom KH, Quigley TD, Rodriguez R, Gdanski S, Lazrinth X, Jones R, **Forlano PM** (2024) Characterization of anthropogenic noise and oyster toadfish (*Opsanus tau*) calling behavior in urban and small-town coastal soundscapes. *The Journal of the Acoustical Society of America*, 155:1230-1239.
- Kobi K, **Forlano PM** (2026) Dopamine D1Aa and D2a receptor expression in the auditory system of a vocal fish. *Journal of Comparative Neurology*, 534:e70166.
- Koeberle AL, Bartron M, Maloy AP, ..., **Sethi SA** (2025) How accurately does eDNA reflect the spatial distribution of cold-water fish? Field validation from a temperate lake. *Freshwater Biology*, 70:e70089.
- Koeberle AL, Hammer B, Pearsall W, Mulhall D, Haley A, ..., **Sethi SA** (2025) Integrating acoustic telemetry and demographic modeling to inform Cisco (*C. artedi*) restoration in Keuka Lake. *Canadian Journal of Fisheries and Aquatic Sciences*, 82:1-15.
- Lazrinth X, Rodriguez R, Santos R, Quigley TD, **Forlano PM** (2026) Daily calling patterns of oyster toadfish (*Opsanus tau*) and striped cusk-eels (*Ophidion marginatum*) in urban and non-urban soundscapes. In Popper AN, Sisneros J, Lepper P, Vigness-Raposa K. (eds) *The Effects of Noise on Aquatic Life IV*, Springer.
- Li Z, Ramon C, Bogdanowicz S, ..., **Sethi SA**, Andres J (2026) Tracing environmental DNA transport in a large lake with synthetic DNA microparticles and hydrodynamic modeling. *Environmental Science & Technology*, 60:3519-3531.
- Pacheco FS, Heilpern SA, DiLeo C, Almeida RM, **Sethi SA**, ..., Gomes CP, Flecker AS (2025) Towards sustainable aquaculture in the Amazon. *Nature Sustainability*, 8:234-244.
- Pacheco FS, Heilpern SA, Almeida RM, **Sethi SA**, ..., Gomes CP, Flecker AS (2026) Land-use transitions and carbon emissions of aquaculture expansion in the Brazilian Amazon. *Science Advances*, 12:eaec5472.
- Quigley TD, Gdanski SG, Lazrinth X, Rodriguez RD, **Forlano PM** (2026) The oyster toadfish (*Opsanus tau*) alters active and diurnal calling amid vessel noise in New York City. *The Journal of the Acoustical Society of America*, 160:233-244.
- Schuurman GW, Carr W, Hoffman CH, ..., **Sethi SA**, ..., Wilkening JL (2025) Clarifying the role of the resist–accept–direct (RAD) framework in supporting resource-management-planning processes. *Conservation Letters*, 39:e70062.
- Sethi SA**, Murphy R, Baker MR, et al. (2026) Challenges and opportunities for strengthening bottom-tow fisheries sustainability. *Fish and Fisheries*, 27:987-1005.
- Sharma A, Kumar K, Wadhwa A, ..., **Cherrier J**, ..., Juran I (2025) Advancing urban water resilience: co-producing knowledge through civic-academic global partnerships on water and climate. *Bulletin of the American Meteorological Society*, 106:E1098-E1107.

- Stich DS, Fox DA, Higgs AL, Kayzak D, Pendleton RM, **Sethi SA** (2025) Reconstructing relative abundance indices for Atlantic sturgeon using hierarchical ecological models. *Transactions of the American Fisheries Society*, 154:134-142.
- Vetter BJ, Perelmuter JT, Lozier NR, Sisneros JA, **Forlano PM** (2025) Brain activation patterns and dopaminergic neuron activity in response to conspecific advertisement calls in reproductive vs. non-reproductive male plainfin midshipman fish (*Porichthys notatus*). *Brain, Behavior, Evolution*, 100:156-170.
- Wilson AB** (2026) Parental behavior in fish. In: Skinner, Michael K. (ed.) *Encyclopedia of Reproduction*, 3e, vol. 6, pp. 130–137. US: Elsevier.
- Wilson AB** (2024) Parental behavior in fish. In: *Reference Module in Biomedical Sciences*. Elsevier.
- Zarri L, Kraft C, McIntyre P, ..., **Sethi SA**, ..., Therkildsen NO (2025) Eradication efforts catalyze rapid evolution in an invasive predatory fish. *Proceedings of the National Academy of Sciences USA* 122:e2424067122.

AREAC Cooperators

AREAC conducts cooperative science. We collaborate with a wide range of conservation, governmental, industry, and academic allies to advance aquatic ecosystem science and aquatic ecosystem sustainability. Our community extends well beyond Brooklyn College's campus, with current collaborators including:

Alaska Pacific University
CUNY Advanced Science Research Center
Cornell University
Cornell Cooperative Extension
Baruch College
Hazen & Sawyer
Hirosaki University
London Natural History Museum
Monterey Bay Aquarium Research Institute
NY City Department of Environmental Protection
NY City Department of Parks and Recreation
NY City Department of Sanitation
NY City Housing Authority
NY Department of Environmental Conservation
NY Water Resources Institute
Pace University

Queens College
Ramboll Engineering Water Program
Research Centre in Biodiversity and Genetic Resources (Vairao, Portugal)
Saildrone
Stony Brook University
SUNY Brockport
Technical University of Copenhagen
Ulster University
University of Alaska
University of the Algarve
University of the Algarve
University of Maryland
University of Molise, Italy
University of Washington
USGS Great Lakes Science Center
US Fish & Wildlife Service



Biology PhD student Tom Quigley (Forlano lab) sets up a noise exposure experiment to test auditory response in toadfishes at AREAC.

