# SUMMER NEWSLETTER

June 2024

HUDSON RIVER ENVIRONMENTAL SOCIETY

### NOTE FROM THE PRESIDENT

Dear HRES Members & Friends: Welcome to our Summer 2024 Newsletter. In this issue, we are excited to interview the 2024 Distinguished Service Award winner John Lipscomb on his experiences as the Hudson Riverkeeper.

This year's symposium "State of the Hudson River Ecosystem Monitoring" will be held on October 8, 2024 at the Cary Institute of Ecosystem Studies in Millbrook. Our featured speakers will focus on past programs, current ongoing studies, and what the future holds for Hudson River monitoring programs.

I hope that you all get a chance to enjoy Summer 2024 and hope that you will join us for our events this upcoming year. Thank you for your continuing support.

Jim Morrison
HRES President

**HRES Membership:** Our 2024 Membership period for renewals and new members is active. There are two ways to sign up:

You can sign up through our link on EventBrite: (credit card required) 2024 Hudson River Environmental Society Membership; or you can print out the application online at www.hres.org and mail with your check to: HRES, PO Box 279, Marlboro, New York 12542.

## HRES HONORS THREE LEADERSHIP AWARD WINNERS AT 2024 AWARDS DINNER

Thank you to HRES members and awardees who attended our Annual Awards dinner at Mahoney's Irish Pub in Poughkeepsie on January 25, 2024. Our awards program recognizes the contributions that individuals have made toward providing a better understanding of the environmental issues facing the citizens of the Hudson Valley. We were pleased to present the following awards to three individuals who the board felt represented the ideals and spirit of our program.

*L to R: Wes Eakin, John Lipscomb, Dan Miller*

**Wes Eakin**, Cornell University, NYSDEC (Outstanding Environmental Researcher Award) has devoted his career to studying the vital ecosystems of the Hudson River, with a particular focus on river herring and American shad populations. His dedication to environmental research and conservation has yielded significant contributions that have had a profound impact on the preservation and understanding of these critical species. Mr. Eakin's two recent scientific publications in the Marine and Coastal Fisheries Journal explore the ecological intricacies of the herring of the Hudson River expanding our knowledge and aiding the development of conservation strategies for their long-term management.

For more than 20 years, **Daniel Miller**, Hudson River Estuary Program, NYSDEC (Outstanding Practitioner Award) has been dedicated to restoring Hudson River estuary habitats that have been severely impacted by industrial development, transportation systems, navigational improvements, and a host of local landscape issues. In 2011 he completed the "Hudson River Estuary Program Habitat Restoration Plan," published by the New York State Department of Environmental Conservation, identified several priority habitats vital to the health and resiliency of the estuary and presented recommendations for action. Miller now collaborates with a variety of partners to facilitate the plan's implementation, coordinating funding sources with research and science capacities, and moving projects from preliminary stages to design and then eventually to construction.

**John Lipscomb**, Hudson Riverkeeper (Distinguished Service Award) is Riverkeeper's Patrol boat Captain and Vice President for Advocacy and has been patrolling the Hudson River Estuary for 23 years. **See bio and interview below…**

Congratulations to all our 2023 award winners. Additional information about HRES's Leadership Awards program is available on our website www.hres.org.

## MORE PHOTOS FROM THE LEADERSHIP AWARDS DINNER

*A good time was had by all!*

*Our MC's for the night: Chuck Nieder (HRES VP) and Emilie Hauser (HRES ex officio).*

*We need your help. Interested in volunteering your time to support the HRES mission?*

*Contact an HRES Board Member today!*

# INTERVIEW WITH JOHN LIPSCOMB

**John Lipscomb** is Riverkeeper's Patrol boat Captain and Vice President for Advocacy and has been patrolling the Hudson River Estuary for 23 years. Mr. Lipscomb travels between 4,000 and 5,000 nautical miles every year aboard the "R. Ian Fletcher", searching out and deterring polluters, monitoring tributaries and waterfront facilities, supporting habitat restoration, conducting a sampling program to assess water quality, and supporting other scientific studies, and taking regional decision makers and media out on the river so that "the river has a chance to advocate for itself. He has been the eyes for the Hudson River since 2000, never too shy to point out problems needing correction, nor hesitating to show gratitude to those who remove or resolve threats to this magnificent River. He is an HRES Distinguished Service Award winner.

**HRES: You have been Riverkeeper's Patrol boat Captain patrolling the Hudson River Estuary for more than 23 years. How did you become the captain of the R. Ian. Fletcher?**

**John:** I was the right guy in the right place at the right time. In other words, just lucky. I was the manager of Julius Petersen boatyard in Upper Nyack in 1998 when Riverkeeper brought their 36' patrol boat to us for engine replacement. Our crew at Petersen's installed a new Volvo diesel and over the course of the next year I got to know Bob Boyle. He was an extraordinary river advocate and founder of Riverkeeper in 1966. I was ready for a career change from boat service yard management back to my true love - caring for and operating a wooden boat. I am happiest as a one man/one boat team. Bob was eager to hire a full-time captain for Riverkeeper's boat to maximize her presence and deterrence on the River. I was hired in the summer of 2000.

**HRES: What was your greatest accomplishment in protecting the Hudson River?**

**John:** I can't pick one singular thing. We've accomplished a lot in 24 years. I'm proud of our fight for Newtown Creek in the Harbor. We went up against Exxon in that case and prevailed. A true David vs Goliath story. I'm proud of starting Riverkeeper's water sampling program in 2008. This program continues today, and we just commissioned a 3rd boat dedicated to that ongoing program. We have sampled for many contaminants over the years - from pharmaceuticals, to the covid virus, to microplastic to beauty care products. But the core project throughout has been to sample for enterococcus, an indicator of sewage contamination. The monitoring program now has many partners and has expanded beyond the estuary to include most of its significant tributaries including the upper Hudson north of the Troy dam and the Mohawk River as far west as Rome. And finally, I am super proud to have inspired the removal of the very first dam on a tributary to the Hudson expressly to restore fish passage. With the NYSDEC and the City of Troy we took down a dam on the Wynants Kill which had stood for 85 years. A week after it was removed river herring returned to spawn. Beautiful beyond words! Riverkeeper now has a terrific dam removal team, more dams have come down and we have funding to do more. Watch "One Dam at a Time" on YouTube.

**HRES: What do you think are the top two greatest threats facing the Hudson River ecosystem today?**

**John:** In my opinion contamination from our wastewater - sewage - is the top contaminant the River has to cope with. Wastewater contains bacteria which can cause illness but also microplastics, chemicals, pharmaceuticals, etc. which are contaminating the very flesh of the creatures which call the Hudson home. Contaminating the food web - our food web! And wastewater delivers an overload of nutrients which contributes to lower dissolved oxygen - a problem which will only get worse as water temperatures rise. Fish need to breath! And I'm utterly dismayed that in spite of proclaiming our love for the Hudson and congratulating ourselves for being environmentally enlightened, we, our society, continues to USE the River to solve our human needs. We dump our wastewater into it and we are running power lines from Canadian hydro plants down the body of the River to help NY City greenwash its energy portfolio. We could have used the Thruway corridor but we are using the River instead. It's so beyond shameful. Can't our society function without endlessly forcing this long-suffering River to subsidize our needs?

**HRES: What advice do you have for our youth entering the field of environmental protection and advocacy?**

**John:** This is tough cause I'm still trying to figure this out even as I retire. I guess my advice would be to NOT do what I have tried to do. I patrol 300 miles of waterway. Being on the water, living with the River, has made me feel a responsibility to try to address every problem that I could. It's been too much. It's too wearing to carry so much need in your heart for so long. Too hard to never have the capacity or support to do as much as I know needs to be done. So I'd say, pick a couple good fights which you feel you have a good chance of winning. They say 'think globally, act locally.' Do that. Avoid taking on too much or allowing others to assign you too much. The weight begins to eat you alive. Pick some issues, try to improve things, then pick some more. And if working for the River is what you seek, learn about the issues it faces and then literally ask yourself - 'if the River could speak, what would it ask me to do?" Meditate on that question. It always helps me see more clearly. The River is mute, powerless to protect itself. It waits for us to know and do the right thing.


*John Lipscomb with Batu Patrolling the Hudson on the R. Ian. Fletcher*

"The River is mute, powerless to protect itself. It waits for us to know and do the right thing." – **John Lipscomb (Hudson Riverkeeper)**

# "OLD FATHER HUDSON" IS LOSING HIS BREATH, AND HE'S GETTING SALTIER

By **Karin E. Limburg**, Distinguished Professor

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In the 1960s and '70s, Pete Seeger used to sing the Seaman's Hymn about "Old Father Hudson," bemoaning the River's polluted state. That led to successful efforts to clean up the Hudson, its watershed, and its tributaries. But one thing Pete and the rest of us didn't have on our minds then was climate change. As humanity becomes aware of the increasingly violent swings in weather, climate change is now in the news and on the minds of many.

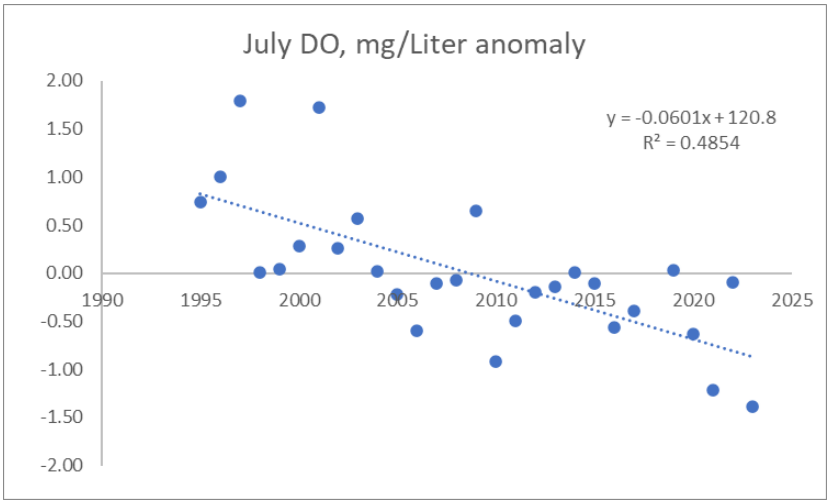
Can we see any climate induced changes in the Hudson River estuary? The answer is yes, but it depends on what data sets you look at, and understanding what they show.

Curious to know what's been going on with the Hudson, I looked for data sets. The Hudson River Environmental Conditions Observing System (HRECOS) was not working well this summer, so I ended up looking at the data sets from the Hudson River National Estuarine Research Reserve, or HRNERR for short. As part of a national network of reserves, the HRNERR is mandated to collect certain types of data, and in the same manner as other research reserves, for comparison. It turns out that the monitoring station in Tivoli South Bay, attached to the underpass of the northernmost channel connecting the bay to the Hudson, has been online, collecting data every 15-30 minutes, since 1995!

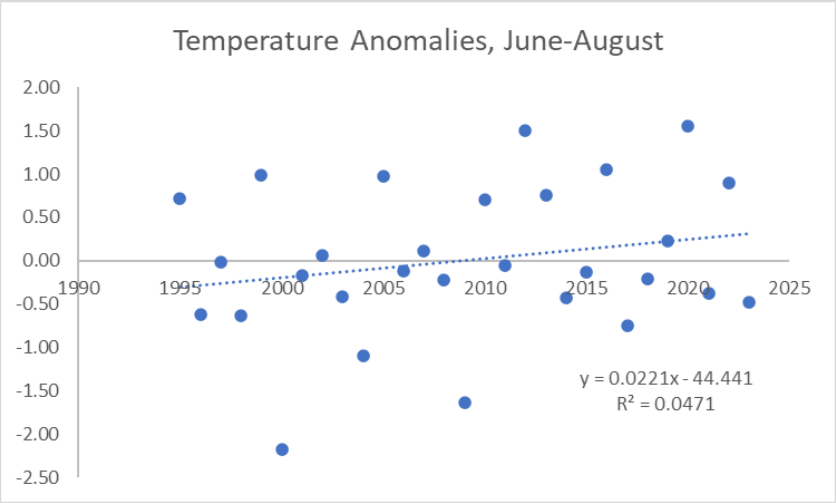
The data I was interested in consisted of water temperature, dissolved oxygen, and salinity. These are key parameters for healthy ecosystems as long as they stay within boundaries of tolerance. Salinity is not monitored per se, but rather a parameter called specific conductance, which can be converted to salinity if so desired. Dissolved oxygen is measured both as concentrations (milligrams of oxygen dissolved per liter of water) or as percent saturation, which is affected by both temperature and salinity. Most dissolved oxygen meters provide both.

I visited (virtually) the national NERR archive and found the HRNERR files. I determined that Tivoli South Bay was the longest-running site, and downloaded all 708,684 records (whew!). Through the magic of Excel function commands, I boiled down the massive data set to annual, seasonal, and in some cases monthly averages, year by year. I then could compute "anomalies" or digressions from the long-term averages and look for trends.

That's when I saw that Old Father Hudson is losing his breath. The river is losing oxygen. Given that I conduct research on ocean and Great Lakes deoxygenation, this at first startled me but then made sense. Global climate change is nothing, if not world-wide. July is the month when oxygen loss has been greatest over the years, with a loss rate of over 6 tenths of a percent saturation per year or 0.06 mg/liter loss. That may not sound like much, but over 28 years the Hudson River at that monitoring station has declined by about 32% in the month of July, arguably one of the most productive months of the year. Here is what the July trend looks like, using the "anomaly" approach:

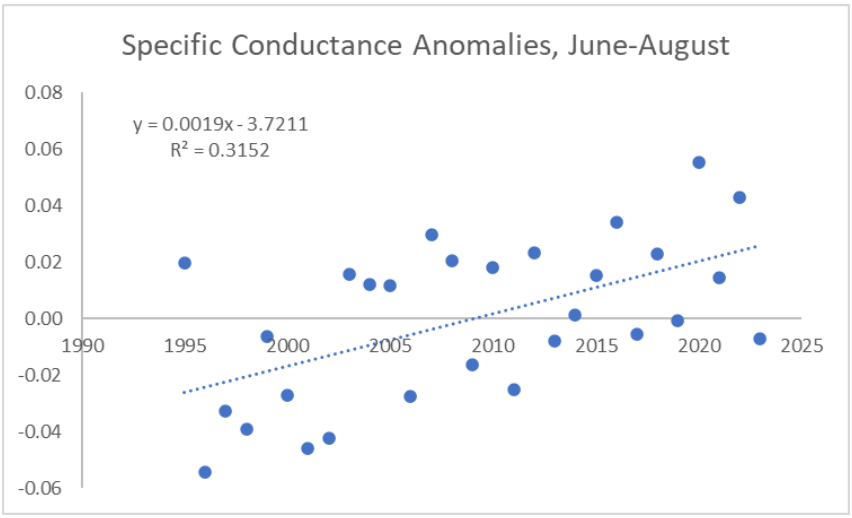


On an annual basis, the Hudson is not deoxygenating as much as in the summer warmth, but it's still depleting over time. Water temperatures in the summer months are rising slightly, but there is great scatter in the data as seen below. Notably, temperatures are rising fastest in July, concurrent with oxygen loss. That suggests that temperature increases contribute to oxygen loss, which makes sense as warmer water holds less oxygen.




Across the entire year, there is a very, very slight negative trend. This implies that seasons other than summer are becoming cooler.

And finally, summer specific conductance data is the other strong signal of climate change, showing a strong, positive trend:




Recalling that specific conductance is related to salinity, the most likely explanation for the trend is sea level rise (SLR). SLR is pushing the salt further upriver, and can be seen even with a little more "brackish-ness" in the freshwater reaches of the estuary, like Tivoli Bays. A recent paper titled "A long-term ichthyoplankton monitoring program suggests climate-induced environmental variabilities changed fish communities in the Hudson River estuary," by Chang, McKown, and Chen and published in Frontiers in Marine Science examined drivers of larval fish community changes, based on the long-term utilities' monitoring programs in place from the 1970s to 2018. These researchers found similar results, with faunal communities being pushed upriver by SLR.

We are likely going to see more papers accessing other data sets, for example, the long term data sets of the New York City Department of Environmental Protection, which goes back to the turn of the 19th to 20th centuries. But we are also likely going to see increases in the rates of change, although there is a great deal of uncertainty due to "surprises" that could occur (a massive loss of ice from Greenland, for example). We are lucky to have good observation systems, and the NERR system ranks among the best for estuaries.

# 2024 HUDSON RIVER SYMPOSIUM

## *State of Hudson River Ecosystem Monitoring*

*Cary Institute of Ecosystem Studies*
*Tuesday October 8, 2024; 8 am to 5:30 pm*
*Registration: 8 am. - Talks start at 9 a.m. - Poster session: 4 pm*



With the closing of the Indian Point nuclear power plant, one of the longest uninterrupted monitoring programs in the world came to an end. A complimentary monitoring survey of the lower food web conducted by the Cary Institute of Ecosystem Studies ended in 2020. Together, these surveys provided critical information about different fish habitats, species, life stages, food sources, and environmental conditions of the Hudson River.

Fortunately, several key fisheries monitoring programs have been maintained by the NYSDEC and a new three-year survey of the Hudson River's lower food web will commence in 2025. During this one-day symposium, we will look at the biological monitoring of the past, review current ecosystem monitoring activities, hear about new and innovative ways to monitor biological systems, and learn about efforts to design the next generation comprehensive ecosystem monitoring program of the Hudson River.

The current list of presenters includes:

- Yong Chen, School of Marine and Atmospheric Sciences, SUNY at Stony Brook
- Rebecca Cohen, Cornell Lab of Ornithology, Cornell University
- Sarah Fernald, New York State Department of Environmental Conservation, Hudson River National Estuarine Research Reserve
- Stuart Findlay, Cary Institute of Ecosystem Studies
- Brittney Flaten, NYSDEC, Hudson River Estuary Program
- Amanda Higgs, NYSDEC, DNRE, Cornell University
- Jonathan Kramer, Hudson River Foundation
- David Lodge, Department of Ecology and Evolutionary Biology, Cornell University
- James Lodge, Hudson River Foundation
- Rich Pendleton, NYSDEC, DNRE, Cornell University
- Shannon Roback, Hudson Riverkeeper
- David Strayer, Cary Institute of Ecosystem Studies

**Registration opens June 10, 2024.** You can go to the event with the following link: **2024 Hudson River Symposium**

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*Founded in 1970, the Hudson River Environmental Society is a nonprofit, non-advocacy organization that delivers the science behind Hudson Valley issues to citizens, scientists, and decision makers. We enable objective discussions, provide forums for rigorous science, connect disparate views, and showcase the region's natural heritage. We are academic researchers, government officials, nonprofit scientists, private consultants, teachers, students, and interested residents who find real solutions.*