

# Data Sharing Protocol for the Hudson River Biological Monitoring Program

## Background Information

The Hudson River Biological Monitoring Program (HRBMP) was established in response to concerns regarding the impact of water being pumped out of the Hudson River for use at Indian Point Energy Center (Indian Point). Initially in the 1970s the survey was focused specifically on striped bass sampling, due to their recreational and commercial value. Gear selected for sampling was based on the distinct life stages of striped bass. Plankton nets were used to capture pelagic eggs and larvae. Collection of larger, free-swimming adults was accomplished through the use of beach seines and trawls as they can move into more favorable habitats. Many other important species within the Hudson River Estuary have also been captured with these gear types and are well represented in the survey. Over 171 species have been identified in the HRBMP and this species-diverse dataset is atypical for power plant environmental studies, which generally focus on only a few target species.

The need to target the different life history stages of various species resulted in three distinct river-wide survey programs. The Long River Ichthyoplankton Survey (LRS) provides data on the abundance, stage structure, and spatiotemporal distributions of entrainable early life history stages (i.e., eggs, yolk-sac-larvae, and post-yolk-sac-larvae) of striped bass and other species that could be used to quantify the effects of flow reductions and outages on entrainment of these species. The LRS also provides data on long-term trends in abundance of early life stages of these species. The Beach Seine Survey (BSS) and Fall Juvenile Survey (FJS) provide data on the distribution, status, and long-term trends in abundance of young-of-the-year (YOY) fish. The BSS used beach seines to sample in shallower nearshore areas while the FJS used beam and tucker trawls to sample the channel and bottom strata. In addition to the fin-fish surveys, the Water Quality Survey (WQS) provides data on the spatial and temporal distribution of water temperature, dissolved oxygen (DO), and conductivity along the entire Hudson River Estuary. It is important to note that the HRBMP data may need to be calibrated to ensure their consistency over time and space because of changes in sampling protocols over the years (Chang et al. 2023, <https://doi.org/10.3389/fmars.2023.1237549>).

For additional information on the HRBMP and the different survey components, please visit our website at <https://you.stonybrook.edu/hrbmp/>.

## Management and Ownership of the Data

Upon the decision to close Indian Point, Entergy, the last owner of the Indian Point power plant, and ASA Analysis & Communication, Inc. (ASA) wanted to find a new custodian for the HRBMP data. They decided Stony Brook University's School of Marine and Atmospheric Sciences (SoMAS) would be a good fit to conduct research using the existing database as well as to continue the survey in some forms. The historical HRBMP data are now managed by Dr. Yong Chen's lab at SoMAS. Due to a series of significant survey protocol changes, the SoMAS HRBMP working group has invested a significant amount of effort and resources to review the data to better understand the intricacies and issues related to the data quality and quantity. The data have been comprehensively reviewed for outliers and errors, and statistical models have

been developed for the LRS to calibrate the data to ensure the comparability of the survey data over time and space (Chang et al. 2023, <https://doi.org/10.3389/fmars.2023.1237549>). However, data quality checks and calibration have not been done for the other HRBMP survey programs.

### Metadata

Metadata, which describes in detail how and what data were collected for the HRBMP as well as changes in survey protocols, is available for download at any time for all four of the main HRBMP surveys. The documents available for the LRS, BSS, FJS, and Water Quality Survey include a detailed overview of each survey with summary tables and figures, timeline of survey changes, data dictionary describing each variable, and a full metadata record available in two different formats. Access to the metadata is publicly available and can be found by on the HRBMP website, <https://you.stonybrook.edu/hrbmp/database/>.

### Detailed Data - Site and Time-Specific Data

Potential users who intend to access the detailed site/time specific data should study the metadata first before requesting specific information with fine spatial and temporal resolutions. The request for access to such detailed data will be granted on a case-by-case basis. This is due to the complexity of the database, the need for potential users of the data to have a clear understanding of how the different surveys within the HRBMP work in order to use the data appropriately, and the investment of time from the SoMAS working group to clean, review, and calibrate the database.

Data from the HRBMP include all recorded observations or measurements of the physical, chemical, and biological properties along with conditions of the Hudson River Estuary and the related metadata. It does not include laboratory notebooks from groups within Stony Brook University, preliminary analysis of HRBMP data, drafts of scientific papers, plans for future research, peer reviewed reports, and communications with colleagues or physical objects such as laboratory specimens.

Any data releases are intended for the use of the applicants only and should not be used for work not a part of the data request application. All persons involved in the use of the data by the group requesting must be included in the application.

We would like to encourage the use of the HRBMP data by any stakeholders who are interested in the Hudson River ecosystem and will work closely and collaboratively with the potential users to facilitate and ensure the best use of the HRBMP data in addressing scientific and management questions.

### Intended Users and Stakeholders

Stony Brook University sees the future users of the HRBMP data to be a wide audience such as but not limited to researchers from other higher education schools, state and federal agencies, NGOs both in and outside the United States, and Hudson River community members including

fishermen. Stony Brook University sees this as an opportunity for advancing research on a highly developed watershed, and for helping in the creation of similar monitoring programs.

### Requirements and Application Process

Data access will be granted on a case-by-case basis. Prior to release of any data from Stony Brook University, the SoMAS HRBMP working group will work with the data users to identify the type of support, if any, that could be provided by the SoMAS HRBMP working group. If access requires substantial efforts and help from the SoMAS HRBMP working group, fees may be needed to compensate for staff's time and efforts (as we do not have an operational budget to cover such efforts). If any fees are required, it will also be on a case-by-case basis, depending on the service requested. If substantial research effort is needed, the SoMAS HRBMP group may request a member to be included as a co-author on relevant publications and/or co-PI of the relevant grant applications. The name(s) (as appropriate/needed) of the SoMAS HRBMP working group who will be working with the applicant needs to be included with the document for how data will be used. The phrase "The data/samples were collected as part of the Hudson River Biological Monitoring Program, which have been donated to and curated by Stony Brook University" should be cited in the acknowledgement of a relevant publication.

Although we will take all efforts to encourage and facilitate the wide use of the HRBMP data, Stony Brook University reserves the right to deny access to an applicant that does not meet the criteria outlined in this document. The data management team will work with the potential data users if additional information needs to be provided in order to finalize the application.

Full citation for Database example: Authors (this will be given at time of data release), Hudson River Biological Monitoring Program, date of data release, Stony Brook University, version of the data, <https://you.stonybrook.edu/hrbmp/database/>.

Full citation for Metadata example: The Long River Ichthyoplankton Survey (LRS): A Component of the Historical Hudson River Biological Monitoring Program (HRBMP). HRBMP Metadata. The Chen Lab, School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook, NY, USA, <https://you.stonybrook.edu/hrbmp/long-river-survey-metadata/>.

Applicants should provide the following information for their data request:

1. Name:
2. Title:
3. Affiliation:
4. E-mail address:
5. Phone number:
6. Other people working on this project who would have access to the requested data:
7. Abstract for intended research project:
8. Specific data requests, to include, but not limited to survey program, species, life history stages, start and end years, location, abundance, biological information, and environmental variables. Please be as specific as possible.
9. A brief description of the data use plan.