

# REQUEST FOR PROPOSALS:

## LITERATURE REVIEW ON RECONTAMINATION OF RESTORED WETLANDS IN THE HUDSON-RARITAN ESTUARY

Release Date	March 19, 2025
Letter of Intent Due	April 11, 2025 · 5:00 PM
Invitation to Submit Full Proposal	April 2025
Proposal Due	June 27, 2025 · 5:00 PM
Announcement of Awards	August 2025

# Table of Contents

<b><i>Introduction</i></b>	<b>1</b>
<b><i>New York New Jersey Harbor &amp; Estuary Program</i></b>	<b>1</b>
<b><i>Background</i></b>	<b>1</b>
<b><i>Scope of Work</i></b>	<b>2</b>
<b><i>Available Budget</i></b>	<b>3</b>
<b><i>Timeline</i></b>	<b>3</b>
<b><i>Qualifications</i></b>	<b>4</b>
<b><i>Proposal Elements</i></b>	<b>4</b>
<b><i>Evaluation</i></b>	<b>5</b>
<b><i>References</i></b>	<b>5</b>

## Introduction

The New York-New Jersey Harbor & Estuary Program (HEP) seeks a researcher or team of researchers to conduct and publish a scientific literature review of research on the relative risks and benefits of urban wetland restoration to wildlife in the Hudson-Raritan Estuary. The review should seek to evaluate how the risks of urban wetland restoration, such as (re)contamination, impact wildlife. This evaluation should consider how such risks can be weighed relative to the benefits of urban restoration, including the risks of inaction, such as habitat loss. Various types of literature should be incorporated, including peer-reviewed publications, white papers, and reports. The final deliverable should be a manuscript for submission to a peer-reviewed journal that can be used to inform decision-making around restoration opportunities within the Hudson-Raritan Estuary.

## New York New Jersey Harbor & Estuary Program

The New York - New Jersey Harbor & Estuary Program (HEP) engages people, partners, and communities to collaboratively advance understanding, improve stewardship, and enhance our shared waters and watersheds. Created by the U.S. Environmental Protection Agency (EPA) at the request of the governors of New York and New Jersey, HEP is an ongoing effort to develop and implement a consensus driven plan to protect, conserve and restore the Estuary. HEP decisions and activities are carried out by staff and partners organized through the committees and work groups.

HEP's Restoration Work Group brings together technical experts to share best practices, identify solutions to problems common to the restoration community, and pursue research and greater understanding that leads to better restoration projects and overall habitat quality. This group develops and steers the habitat and ecological health actions in [HEP's Action Agenda](#) and recommends habitat restoration and research projects for HEP and others. Members of the Restoration Work Group include non-governmental, municipal, state, and Federal representatives with expertise in habitat restoration or preservation.

## Background

Habitat loss is the most significant driver of threatened species extinction globally (Hogue & Breon, 2022), and habitat loss is particularly prominent in urban and industrial areas, such as the Hudson-Raritan Estuary. Wetland restoration is essential to meet federal “no net loss” goals (Zedler, 2004) and State and local habitat goals such as the Comprehensive Restoration Plan (US Army Corps of Engineers & The Port Authority of NY & NJ, 2016),

especially on shorelines where existing wetlands face pressures from both coastal development, environmental degradation, and sea level rise. In the Hudson-Raritan Estuary, wetland restoration is complicated by many factors, notably historic and ongoing contamination and pollution. Even with the removal of localized contamination during restoration, clean restoration materials can potentially be recontaminated by suspended sediment from tidal inundation, flooding (Hart, 1982), or from air deposition (Souch et al., 2002). Therefore, wetlands restored in urban areas may pose uncertain risks to wildlife that can hinder both restoration efforts and the protection of species health.

Restored urban wetlands provide numerous ecosystem services (Alikhani et al., 2021) and benefits, such as supporting biodiversity at levels similar to undisturbed reference wetlands (Sievers et al., 2018), providing critical habitat for local populations, and combatting habitat loss caused by sea level rise (Liu et al., 2021). Inaction – not restoring in urban areas – has its own risks; urbanization is one of the driving causes of biodiversity loss globally (Seto et al., 2011) and failure to conserve and restore habitat in urban areas could impact regional biodiversity (Knapp et al., 2021; Simkin et al., 2022). Misconceptions about the quality of urban habitat (Soanes et al., 2019) limit restoration opportunities; yet, urban habitats can support high ecosystem health (Gallagher et al., 2018), suggesting that biotic resiliency and adaptation may be underestimated in these landscapes (Hagmann et al., 2015). A holistic approach that characterizes relative risks to wildlife of urban wetland restoration versus inaction (no restoration) is necessary to inform decision-making in urban and industrial regions like the Hudson-Raritan Estuary.

## Scope of Work

The New York-New Jersey Harbor and Estuary Program (HEP) is requesting letters of interest from a researcher or team of researchers to conduct a literature review on the topic of relative risk to wildlife of urban wetland restoration. The geographic focus should be on the Hudson-Raritan Estuary, but the review should also include literature from other urban areas outside this region, when relevant.

The literature review should evaluate the relative risk and benefits of urban habitat restoration with regards to wildlife, accounting for:

- Risks of urban wetland restoration to wildlife and impacts of recontamination of clean fill used in wetland restoration and its transference to wildlife. Assessment of this risk *may* include topics such as:
  - Evidence of recontamination in wetlands restored with clean material
  - Ecological pathways to recontamination and wildlife exposure

- Contaminant mobilization, bioavailability, and ecotoxicity in wetlands
- How well empirical thresholds such as effects range median (ERM) and effects range low (ERL) translate to contaminant uptake and effects to wildlife in wetlands
- Assessments of wildlife health (e.g., individual fitness) and community and population level measurements (e.g., biodiversity, density) in restored urban/industrial wetlands compared to unrestored, undisturbed, or reference sites
- Benefits of urban restoration and the risks of inaction (no urban wetland restoration) to wildlife. This *may* include topics such as:
  - Habitat loss to development or sea level rise
  - Effects on biodiversity and impacts to regional biodiversity
  - Sea level rise driven erosion of unrestored sites exposing historic contamination
  - Implications of value/funds and wetland mitigation opportunities leaving the Estuary

Prior to the start of the project, NY-NJ HEP will organize a workshop with the lead researcher and restoration workgroup members to discuss the plan with multiple stakeholders and ensure a variety of perspectives are considered.

The Researcher(s) will craft a manuscript to be submitted to a peer-reviewed journal. This is needed to evaluate the impacts and benefits of urban wetland restoration on wildlife. This final deliverable should also describe the scientific consensus (or lack thereof) of restoration impacts to wildlife and address any knowledge gaps that arose from the literature review, which may inform future research needs.

## Available Budget

The available budget for this opportunity is \$25,000.

## Timeline

This is anticipated to be a year-long contract. NY-NJ HEP will select the Researcher by August 2025 and the anticipated due date of a submission-ready manuscript is August 2026.

## Qualifications

The researcher(s) should have demonstrated experience conducting literature reviews in the field of ecology, with specific expertise in aquatic ecology, urban ecology, restoration ecology, wildlife health and ecotoxicology, or wetlands preferred. Cross-disciplinary teams or researchers with experience working across disciplines are preferred, as addressing these topics holistically may require a broad view. A history of publishing in peer-reviewed academic journals is preferred.

## Proposal Elements

### Letter of Intent (due April 11, 2025)

Applicants should submit a letter of intent (LOI) to apply **by 5:00 PM April 11, 2025**, through HRF's [application portal](#). The letter of intent should include:

1. *Title Page*– The title of the proposed project. For the program, select “Literature Review of Restored Wetland Recontamination (LRRWR).”
2. *Anticipated Budget*– Please list the total budget amount requested, not to exceed \$25,000.
3. *Applicant/PI*– Contact information, affiliation, and a 2-page CV.

**We strongly recommend that you create your account and update your personal profile in HRF’s application portal as soon as possible.** If your institution is not already registered in the portal, it can take up to two days to validate that institution. Anyone on your team who needs access to the proposal (e.g., institution signing official, fiscal officer, grant administrator, co-PI) should do the same.

4. *Key Personnel (if applicable)*– The team members who will participate in the project, their roles, and their institutional affiliations. Note that 2-page CVs required for all team members.
5. *Research Team* (limited to 1600 characters – approximately 250 words)– The roles and contributions of each Team member and how their experience aligns with the Scope of Work.
6. *Research Questions and Objectives* (limited to 3200 characters – approximately 500 words)– Describe the research questions and objectives of the review and how they address the topics outlined in the Scope of Work.
7. *Project Description* (pdf, limited to 1-page)– Describe the methodological approach to the research objectives. Include a timeline for the work and a description of the

expected deliverable(s); please describe how the deliverable(s) might be used to inform decision-making related to urban wetland restoration.

8. *Cited References* (pdf)– The references cited in the *Project Description*.

### **Full Proposal (due June 15, 2025)**

Select applicants will be invited to submit a full proposal in **April 2025**. Full proposals must be submitted **by 5:00 PM June 15, 2025**, through HRF’s application portal. Details on the full proposal will be provided along with the invitation to submit. Awards are expected to be announced by **August 2025**.

## Evaluation

Applicants should respond to the requirements of this RFP in a straightforward and concise manner. Proposals will be evaluated by a review panel consisting of relevant technical experts, HEP staff, and RWG members. Revisions may be requested before or after reaching a final decision. Submissions will be evaluated based on:

- Completeness and responsiveness to the Request for Proposals
- How well the research objectives align with the goals of the RFP described in the Scope of Work
- Approach and methodology
- Qualifications, experience, and capacity to implement the literature review

## References

- Alikhani, S., Nummi, P., & Ojala, A. (2021). Urban Wetlands: A Review on Ecological and Cultural Values. *Water*, 13(22), Article 22. <https://doi.org/10.3390/w13223301>
- Gallagher, F., Goodey, N. M., Hagmann, D., Singh, J. P., Holzapfel, C., Litwhiler, M., & Krumins, J. A. (2018). Urban Re-Greening: A Case Study in Multi-Trophic Biodiversity and Ecosystem Functioning in a Post-Industrial Landscape. *Diversity*, 10(4), Article 4. <https://doi.org/10.3390/d10040119>
- Hagmann, D. F., Goodey, N. M., Mathieu, C., Evans, J., Aronson, M. F. J., Gallagher, F., & Krumins, J. A. (2015). Effect of metal contamination on microbial enzymatic activity in soil. *Soil Biology and Biochemistry*, 91, 291–297. <https://doi.org/10.1016/j.soilbio.2015.09.012>
- Hart, B. T. (1982). Uptake of trace metals by sediments and suspended particulates: A review. In P. G. Sly (Ed.), *Sediment/Freshwater Interaction* (pp. 299–313). Springer Netherlands. [https://doi.org/10.1007/978-94-009-8009-9\\_31](https://doi.org/10.1007/978-94-009-8009-9_31)

- Hogue, A. S., & Breon, K. (2022). The greatest threats to species. *Conservation Science and Practice*, 4(5), e12670. <https://doi.org/10.1111/csp2.12670>
- Knapp, S., Aronson, M. F. J., Carpenter, E., Herrera-Montes, A., Jung, K., Kotze, D. J., La Sorte, F. A., Lepczyk, C. A., MacGregor-Fors, I., MacIvor, J. S., Moretti, M., Nilon, C. H., Piana, M. R., Rega-Brodsky, C. C., Salisbury, A., Threlfall, C. G., Trisos, C., Williams, N. S. G., & Hahs, A. K. (2021). A Research Agenda for Urban Biodiversity in the Global Extinction Crisis. *BioScience*, 71(3), 268–279. <https://doi.org/10.1093/biosci/biaa141>
- Liu, Z., Fagherazzi, S., & Cui, B. (2021). Success of coastal wetlands restoration is driven by sediment availability. *Communications Earth & Environment*, 2(1), 1–9. <https://doi.org/10.1038/s43247-021-00117-7>
- Seto, K. C., Fragkias, M., Güneralp, B., & Reilly, M. K. (2011). A Meta-Analysis of Global Urban Land Expansion. *PLOS ONE*, 6(8), e23777. <https://doi.org/10.1371/journal.pone.0023777>
- Sievers, M., Hale, R., Parris, K. M., & Swearer, S. E. (2018). Impacts of human-induced environmental change in wetlands on aquatic animals. *Biological Reviews*, 93(1), 529–554. <https://doi.org/10.1111/brv.12358>
- Simkin, R. D., Seto, K. C., McDonald, R. I., & Jetz, W. (2022). Biodiversity impacts and conservation implications of urban land expansion projected to 2050. *Proceedings of the National Academy of Sciences*, 119(12), e2117297119. <https://doi.org/10.1073/pnas.2117297119>
- Soanes, K., Sievers, M., Chee, Y. E., Williams, N. S. G., Bhardwaj, M., Marshall, A. J., & Parris, K. M. (2019). Correcting common misconceptions to inspire conservation action in urban environments. *Conservation Biology*, 33(2), 300–306. <https://doi.org/10.1111/cobi.13193>
- Souch, C. J., Filippelli, G. M., Dollar, N., Perkins, S., & Mastalerz, M. (2002). Accumulation Rates of Airborne Heavy Metals in Wetlands. *Physical Geography*, 23(1), 21–43. <https://doi.org/10.2747/0272-3646.23.1.21>
- US Army Corps of Engineers & The Port Authority of NY & NJ. (2016). *Hudson-Raritan Estuary Comprehensive Restoration Plan* (Volume 1, Version 1.0). New York - New Jersey Harbor & Estuary Program. <https://www.hudsonriver.org/wp-content/uploads/2017/08/Hudson-raritan-0616.pdf>
- Zedler, J. B. (2004). Compensating for wetland losses in the United States. *Ibis*, 146(s1), 92–100. <https://doi.org/10.1111/j.1474-919X.2004.00333.x>