

Data Documentation

Dataset Information

Dataset Title:

NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: On-marsh nekton community in restored vs. natural Louisiana marshes near the West Pointe A La Hache siphon, 2018-05-17 to 2019-05-20

Description:

This dataset contains abundance, mass, length, sex and species composition of the on-marsh nekton community in restored (LHA, LHB) and natural (LHC, WPH1, WPH2, PS7) marshes at various distances from a freshwater diversion in the vicinity of West Pointe a la Hache, Lake Hermitage, and Port Sulphur, Louisiana in May 2018 and May 2019. Minnow traps (wire mesh traps) were deployed at three sub-habitat locations (edge, creeks, ponds) at each site. Taxonomic identification of individuals was determined to the lowest possible taxonomic level. Salinity and temperature data for each sample location are also included in this dataset. Data are in spreadsheet format.

Purpose:

To compare the on-marsh nekton community across a salinity gradient and also between natural and restored marshes.

Little is known about how river diversions influence the ecological trajectory, food web structure, and function of natural versus created marshes. To address this gap, this project established sites in the West Point a la Hache (WPH) area (Barataria Bay, in Plaquemines Parish, Louisiana), near the WPH siphon which periodically shunts Mississippi River water into the local marshes. Sites were also established in nearby marshes that were restored as part of the Lake Hermitage (LH) Marsh Creation Project, representing an ideal model system to examine how seasonal and spatial shifts in salinity due to river diversions influence species composition and food web structure in both natural and different-aged created marshes. Objectives of the overall project included characterizing species compositions and abundances in multiple trophic levels (microbes to upper trophic level predators) and applying bulk (SIA) and compound-specific stable isotope analysis (CSIA) of amino acids (AA) in producer and consumer tissues to describe and compare the structure and complexity of food webs and reveal aspects of fish residency. Only marsh nekton and associated environmental data are included in this dataset.

This dataset is a result of research funded by the National Oceanic and Atmospheric Administration's RESTORE Science Program (ROR - <https://ror.org/0042xzm63>) under award NA17NOS4510091 to Louisiana State University.

Methods:

Three minnow traps (A,B,C) were deployed at three sub-habitat locations (creek, edge, pond) at six sites (LHA, LHB, LHC, WPH1, WPH2, PS7) for three consecutive days in May 2018 and May 2019. Traps were allowed to soak for 1-2 hours at a time, after which all organisms collected were identified, counted, and measured (length and weight).

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In 2018 PS7 was sampled four times, while all other sites were sampled three times. In that year, the first PS7 sampling occurred in the afternoon, after which samples were collected during morning hours, consistent with sampling at all other sites. In 2019 new site waypoints were generated at LHB Edge 2, LHC Creek 1, LHC Creek 2, LHC Creek 3, LHC Edge 1, LHC Edge 2, LHC Edge 3, LHC Pond 1, LHC Pond 2, LHC Pond 3, WPH1 Creek 2, WPH1 Creek 3, WPH1 Edge 1, WPH1 Edge 2, WPH1 Edge 3, WPH1 Pond 1 and WPH1 Pond 3.

Associated Datasets:

- Rabalais, Nancy N.; Morrison, Wendy; Smith, Leslie M.; Woods, Gina (2024). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Total organic carbon and sediment grain size at natural and restored marshes along a salinity gradient generated from a freshwater diversion at West Pointe a la Hache into eastern Barataria Bay, Louisiana, 2018-05-21 to 2021-05-25 (NCEI Accession 0296021). NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/fk7x-v112>
- Rabalais, Nancy N.; Morrison, Wendy; Smith, Leslie; Woods, Gina (2024). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Taxonomic data for marsh infauna associated with natural and restored marshes along a salinity gradient generated from a freshwater diversion at West Pointe a la Hache into eastern Barataria Bay, Louisiana, 2018-05-21 to 2021-05-25 (NCEI Accession 0296020). NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/zb46-m126>
- Polito, Michael J.; O'Nuanain, Aine; Bennelli, Allison; Winston, Joseph; Lamb, Katelyn J.; López-Duarte, Paola C.; Roberts, Brian J. (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Organic matter decomposition in restored vs. natural Louisiana marshes near the West Pointe A La Hache siphon, 2018-05-21 to 2021-07-28 (NCEI Accession 0302679). [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/8h8n-e570>
- Olin, Jill (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Bulk sulfur stable isotopes of on- and off-marsh fish species in restored vs. natural Louisiana marshes near the West Pointe A La Hache siphon, May 2018 (NCEI Accession 0302625). NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/w8nw-nv55>
- Polito, Michael J.; Lamb, Katelyn J.; López-Duarte, Paola C.; Olin, Jill A.; Martin, Charles W.; Hooper-Bui, Linda M.; Roberts, Brian J. (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Carbon and nitrogen stable isotope values of organisms from created and natural marsh of Lake Hermitage, West Point a la Hache, and Bay Batiste, Louisiana, May 2018 (NCEI Accession 0302883). [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.25921/43d6-6r23>
- Polito, Michael J.; Loesser, Katherine B.; Stahl, Angela R; Bennadji, Hayat; López-Duarte, Paola C.; Olin, Jill A.; Martin, Charles W.; Rabalais, Nancy; Roberts, Brian J. NOAA (2025). RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Carbon and nitrogen stable isotope values of organisms from created and natural marsh of Lake Hermitage, West Point a la Hache, and Bay Batiste, Louisiana, May 2019. NOAA National Centers for Environmental Information. Dataset. (in prep)

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- Martin, Charles (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Trawl data for fishes and macroinvertebrates collected in created and natural marsh of Lake Hermitage, West Point a la Hache and Bay Batiste, Louisiana, 2018-05-19 to 2019-05-17. NOAA National Centers for Environmental Information. Dataset. (in prep)
- Swenson, Erick (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Continuous hydrologic data from sondes deployed by Louisiana State University (LSU) in the Lake Hermitage, Louisiana area from 2018-03-12 to 2021-12-31. NOAA National Centers for Environmental Information. Dataset. (in prep)
- Swenson, Erick (2025). NOAA RESTORE Science Program: Linking Community and Food-web Approaches to Restoration: Site elevation surveys near the West Pointe a la Hache siphon 2018-07-24 to 2021-07-28. NOAA National Centers for Environmental Information. Dataset. (in prep)

People & Projects

Dataset Authors:

- Lopez-Duarte, Paola

Principal Investigator:

- Paola Lopez-Duarte, plopezd@pdx.edu, Portland State University

Additional Principal Investigators:

- Michael J. Polito (August 2024 to present affiliation: University of California Santa Cruz, polito@ucsc.edu; Project period affiliation: Louisiana State University)

Primary Point of Contact:

- Paola Lopez-Duarte, plopezd@pdx.edu, Portland State University
- US DOC; NOAA; NOS; NCCOS; RESTORE Science Program, noaarestorescience@noaa.gov (ROR - <https://ror.org/0042xzm63>)
- NCCOS Data Manager, nccos.data@noaa.gov, US DOC; NOAA; NOS; NCCOS (ROR- <https://ror.org/05ba43f71>)

Collaborators: (Project Level)

- Michael J. Polito, Lead-PI (August 2024 to present affiliation: University of California Santa Cruz, polito@ucsc.edu; Project period affiliation: Louisiana State University)
- Annette S. Engel, Co-PI, Dept. Earth & Planetary Sciences, University of Tennessee
- Linda Hooper-Bùi, Co-PI, Dept. Environmental Sciences, Louisiana State University
- Olaf P. Jensen, Co-PI, Dept. Marine & Coastal Sciences, Rutgers University
- Paola López-Duarte, Co-PI, Portland State University
- Charles W. Martin, Co-PI, Nature Coast Biological Station, Institute of Food & Agricultural Sciences, University of Florida
- Jill A. Olin, Co-PI, Great Lakes Research Center, Michigan Technological University
- Brian J. Roberts, Co-PI, Louisiana Universities Marine Consortium
- Erick Swenson, Co-PI, Dept. Oceanography & Coastal Sciences, Louisiana State University.
- Nancy Rabalais, Co-PI nrabal@lsu.edu, Louisiana Universities Marine Consortium; Dept. Oceanography & Coastal Sciences, Louisiana State University

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- US DOC; NOAA; NOS; NCCOS; RESTORE Science Program (ROR - <https://ror.org/0042xzm63>)
- NOAA RESTORE Science Program award NA17NOS4510091 to Louisiana State University

Associated Online Resources:

- National Centers for Coastal Ocean Science. 2023. RESTORE Sponsored Research Project: Linking Community and Food-web Approaches to Restoration. <https://www.fisheries.noaa.gov/inport/item/71399>
- RESTORE Project, Linking community and food-web approaches to restoration: An ecological assessment of created and natural marshes influenced by river diversions <https://restoreactscienceprogram.noaa.gov/projects/marshes>
- Project Webpage <https://restorefoodweb.lumcon.edu/>
- External source of salinity data in the same geographic region of this current study area (stations near the sampling sites in this dataset are: 0263, 3617, 0260, 0258, 3680, 0282, 0209, 4529, 0226, 0224) https://lacoast.gov/crms_viewer/Map/CRMSViewer

Extents

Start Date: 2018-05-17
End Date: 2019-05-20

Northern Boundary: 29.5605
Southern Boundary: 29.4759
Western Boundary: -89.8543
Eastern Boundary: -89.8099

Keywords

Sea Areas, Water Bodies, Marine Protected Areas:

- Gulf of America (formally the Gulf of Mexico)
- West Pointe a la Hache (WPH), eastern Barataria Bay, Louisiana
- Lake Hermitage (LH), Louisiana
- Port Sulphur (PS), Louisiana

NCCOS Keywords:

- NCCOS Research Topic > Ecological and Biogeographic Assessments
- NCCOS Research Location > Region > Gulf of America (formally the Gulf of Mexico)
- NCCOS Research Data Type > Field Observation

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File Information

Total File Size: 437 KB

Data File Format(s):

- Standard spreadsheet formats:
 - Excel (.xlsx)

Data Files:

- LA_Marsh_Nekton_2018_2019.xlsx

Documentation Files:

- BrowseGraphic.JPG
- DataDocumentation.PDF

Table 1: Data Dictionary

| Column | Variable | Label | Definition | Units | Range |
|---------------------------|-------------------|-------------------|-------------------------------------------------------------------|------------------|-----------------------------------------------------------|
| Site Locations | | | | | |
| 1 | Survey | Survey | Identifier assigned to sampling effort | None | N/A |
| 2 | Waypoint Name | Waypoint Name | Identifier assigned to each waypoint location | None | N/A |
| 3 | Site | Site | Identifier for each sampling area | None | Restored = (LHA, LHB) Natural = (LHC, WPH1, WPH2, PS7) |
| 4 | Location | Location | Descriptive term for sub-habitat location at each site | None | Creek or Edge or Pond |
| 5 | Habitat Number | Habnum | Number assigned to each habitat | None | 1-3 |
| 6 | Latitude | Latitude | Sample location latitude | Decimal degrees | 29.47653 to 29.56163 |
| 7 | Longitude | Longitude | Sample location longitude | Decimal degrees | -89.86038 to -89.78772 |
| 8 | Waypoint Creation | Waypoint Creation | Date (and time, when available) waypoint was created in the field | MM/DD/YYYY HH:MM | 05/17/2018 09:12 to 05/18/19 |
| Environmental Data | | | | | |
| 9 | Sample Date | Date | Date Samples were collected | MM/DD/YYYY | 05/18/2018 to 05/20/2019 |

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| Column | Variable | Label | Definition | Units | Range |
|---------------------------------------|----------------|-------------|--------------------------------------------------------|------------|-----------------------------------------------------------|
| 10 | Site | Site | Identifier for each sampling area | None | Restored = (LHA, LHB) Natural = (LHC, WPH1, WPH2, PS7) |
| 11 | Location | Location | Descriptive term for sub-habitat location at each site | None | Creek or Edge or Pond |
| 12 | Habitat Number | Habnum | Number assigned to each habitat | None | 1-3 |
| 13 | Trap | Trap | Letter associated with each trap | None | A or B or C |
| 14 | Bait | Bait | Indicates whether trap was baited | N/A | 1=yes, 0=no |
| 15 | Trap set time | Timestar | Time the trap was deployed (local, CDT) | HH:MM | 06:15-16:00 |
| 16 | Trap pull time | Timeend | Time the trap was picked up (local, CDT) | HH:MM | 07:17-17:09 |
| 17 | Soak duration | Timedur | Duration of time the trap was in the water | HH:MM | 00:53-02:47 |
| 18 | Soak duration | Durationmin | Duration of time the trap was in the water | Minutes | 53-167 |
| 19 | Salinity | Salinity | Salinity at trap set time | PPT | 0-13 |
| 20 | Temperature | Temperature | Temperature at trap set time | Degrees C | 23.6-35.0 |
| 21 | Trap catch | Contents | Indicates if trap had catch | N/A | 1=yes/full, 0=no/empty |
| 22 | Field crew | Fieldcrew | Initials of participating crew or Unknown | N/A | N/A |
| Nekton Abundance and Mass Data | | | | | |
| 23 | Sample Date | Date | Date Samples were collected | MM/DD/YYYY | 05/18/2018 to 05/20/2019 |
| 24 | Site | Site | Identifier for each sampling area | None | Restored = (LHA, LHB) Natural = (LHC, WPH1, WPH2, PS7) |
| 25 | Location | Location | Descriptive term for sub-habitat location at each site | None | Creek or Edge or Pond |
| 26 | Habitat Number | Habnum | Number assigned to each habitat | None | 1-3 |
| 27 | Trap | Trap | Letter associated with each trap | None | A or B or C |

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| Column | Variable | Label | Definition | Units | Range |
|---------------------------|-----------------|-----------------|-------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------|
| 28 | Common Name | Common | Species common name (Unidentified=UID) | N/A | N/A |
| 29 | Latin name | Gensp | Species Latin name | N/A | N/A |
| 30 | Number | n | Total number of individuals, both measured and unmeasured | N/A | 1-162 |
| 31 | Measured mass | Measured mass | Weight of all measured fish | Grams | 0.0-373.1 |
| 32 | Unmeasured mass | Unmeasured mass | Weight of all unmeasured fish that came back to the lab (see Parameter Description: Mass measurements for more details) | Grams | 0.1-143.5 |
| 33 | Total mass | Total mass | Combined weight of all measured and unmeasured fish | Grams | 0.0-373.1 |
| 34 | Data crew | Datacrew | Initials of participating weigh/measure/data crew or Unknown | N/A | N/A |
| Nekton Length Data | | | | | |
| 35 | Sample Date | Date | Date Samples were collected | MM/DD/YYYY | 05/18/2018 to 05/20/2019 |
| 36 | Site | Site | Identifier for each sampling area | None | Restored = (LHA, LHB) Natural = (LHC, WPH1, WPH2, PS7) |
| 37 | Location | Location | Descriptive term for sub-habitat location at each site | None | Creek or Edge or Pond |
| 38 | Habitat Number | Habnum | Number assigned to each habitat | None | 1-3 |
| 39 | Trap | Trap | Letter associated with each trap | None | A or B or C |
| 40 | Common Name | Common | Species common name (Unidentified=UID) | N/A | N/A |
| 41 | Latin name | Gensp | Species Latin name | N/A | N/A |

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| Column | Variable | Label | Definition | Units | Range |
|--------|-------------------|----------|----------------------------------------------------------------------------------------------|-------------|----------------|
| 42 | Individual Number | Ind | Sequential numbers assigned to each species found in a given trap (these are NOT abundance) | None | 1-43 |
| 43 | Length | Length | Length of each specimen | millimeters | 6-162 |
| 44 | Measurement type | Meastype | How each specimen was measured (total length, fork length, standard length, carapace width) | N/A | TL, FL, SL, CW |
| 45 | Sex | Sex | M=male, F=female, U/blank= unknown or not recorded | N/A | N/A |
| 45 | Individual mass | Indmass | Weight of an individual fish (see Parameter Description: Mass measurements for more details) | Grams | 0.0-60.3 |

Parameter Information

List of major parameters included in this accession:

Parameter Description:

Parameters: Nekton community species taxonomic composition
Property Type: Measured
Units: Taxonomic categories and Number of individuals
Observation Category: laboratory analysis
Sampling Instrument: Minnow trap
Sampling and Analyzing Method:
 See Methods section above.
Data Quality Method:

Parameter Description:

Parameters: Mass measurements
Property Type: Measured
Units: Grams
Observation Category: laboratory analysis
Sampling Instrument:
Sampling and Analyzing Method:

Mass was obtained on measured and unmeasured fish. The Notes column contains details on if a particular mass included individuals from the other category or information that may explain blank cells. Any weight recorded as <0.1 g on the data sheet was entered into this file as 0.0 g. A blank cell for weight indicates absence of a value, not zero. Reasons for blank cells include: 1) Total mass-Individuals were included in counts that could not be measured or could not be

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weighed, i.e. lost in field, etc. 2) Unmeasured mass-Likely that all individuals were measured, i.e. no unmeasured mass exists or unmeasured fish were lost in the field/could not be weighed. 3) Measured mass-Where multiple fish of the same species were measured independently and each weighed <0.1 but no combined weight was recorded. 4) Where a group of small/light individuals were weighed together, they do not have individual masses recorded, but the combined weight is, when possible, accounted for in "measured mass" and "total mass". In these instances the notes column of the "Abun" tab should say that the individual was included in a combined mass of x grams.

Data Quality Method:

Due to issues with very light-weight samples, rather than weigh individuals (e.g., grass shrimp that are 2 cm), they were weighed as a group to get total mass. In those instances, individual weights can be calculated by dividing that total mass value by the number of individuals.

Parameter Description:

Parameters: Length measurements

Property Type: Measured

Units: Millimeters

Observation Category: laboratory analysis

Sampling Instrument:

Sampling and Analyzing Method:

Four length types were obtained for each specimen as appropriate: Total length (TL), Fork Length (FL), Standard Length (SL), Carapace width (CW).

Data Quality Method:

Parameter Description:

Parameters: Salinity

Property Type: measured

Units: ppt

Observation Category: in situ

Sampling Instrument: Refractometer

Sampling and Analyzing Method:

Measured at trap set

Data Quality Method:

Parameter Description:

Parameters: Temperature

Property Type: measured

Units: degrees C

Observation Category: in situ

Sampling Instrument:

Sampling and Analyzing Method:

Measured at trap set

Data Quality Method:

Document Information

Date: 2025-06-05

Resource Provider: NCCOS Data Manager, nccos.data@noaa.gov, US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

Comment: This data documentation describes data files archived as a NOAA NCEI data accession, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.

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