Title: Metadata for Otolith Age and Scale Spawning Marks for River Herring in the Patapsco River

Time period: 2016 – 2018

Location: Patapsco River, Maryland

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File name: SERC\_Patapsco\_Scales\_Otoliths.xlsx

Tabs: Biosamples

Methodology: Weekly biological sampling using boat electrofishing was conducted to track changes in the species composition of river herring in the Patapsco River. In 2016-2018, subsets of fish sampled were analyzed for otolith age under a dissecting microscope and for scale spawning marks using a microfiche reader following the methods described in Ogburn et al. 2017. Fork length and total length were also measured to the nearest mm.

Reference:

Ogburn MB, Spires J, Aguilar R, Goodison MR, Heggie K, Kinnebrew E, Richie KD, Roberts PM, Hines AH. 2017. Assessment of river herring spawning runs in a Chesapeake Bay coastal plain stream using imaging sonar. Transactions of the American Fisheries Society 146:22-35.

**Tab:**

**Species Composition Survey**

Description:This dataset contains the weekly fish species compositions in the Choptank River, Deer Creek, Marshyhope Creek, and Patapsco River. Data is used to convert the hourly DIDSON sonar fish counts to species-specific counts.

Processing steps: Weekly biological sampling using electrofishing and fyke nets.

Source inputs: Electrofishing and fyke nets.

Column heading: Year

Description: Year in which counts were collected

Data type: Character

Measurement unit: None

Comments: 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2022

Column heading: Date

Description: Date of count

Data type: Date

Measurement unit: None

Comments: Format: Month/Day/Year

Column heading: Location

Description: River or tributary in which counts were collected

Data type: Character

Measurement unit: None

Comments: Choptank River, Deer Creek, Marshyhope Creek, Patapsco River

Column heading: Alewife

Description: Number of alewife (*Alosa pseudoharengus*) collected in sample.

Data type: Numeric

Measurement unit: Count

Column heading: Blueback

Description: Number of blueback herring (*Alosa aestivalis*) collected in sample.

Data type: Numeric

Measurement unit: Count

Column heading: Total\_Collected

Description: Total number of fish of all species collected in sample.

Data type: Numeric

Measurement unit: Count

Column heading: Proportion\_Alewife

Label: Proportion Alewife

Description: Proportional presence of alewife in the sample.

Data type: Numeric

Measurement unit: Proportion (0 – 1.0)

Column heading: Proportion\_Blueback

Label: Proportion Blueback Herring

Description: Proportional presence of blueback herring in the sample.

Data type: Numeric

Measurement unit: Proportion (0 – 1.0)

**Tab:**

**Choptank River Run Count**

**Deer Creek Run Count**

**Marshyhope Creek Run Count**

**Patapsco River Run Count**

Description:These datasets contain the hourly fish counts in each river, the estimated species-specific counts for alewives and blueback herring moving upstream and downstream, and hourly measures of water temperature.

Processing steps: Hourly fish counts were collected using DIDSON multibeam sonar. Weekly biological sampling using electrofishing or fyke nets was used to convert the fish counts to species-specific counts for alewives and blueback herring. Weekly species values were converted to daily values of species composition using linear interpolation. All data was set to a standardized time of GMT/UTC-5.

Source inputs: DIDSON multibeam sonar (fish counts), HOBO U20-001–2-Ti loggers (temperature).

Column heading: Year

Description: Year in which counts were collected

Data type: Character

Measurement unit: None

Comments: 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2022

Column heading: Date

Description: Date of count

Data type: Date

Measurement unit: None

Comments: Format: Month/Day/Year

Column heading: Hour

Description: Hour of the day the count was taken. GMT/UTC-5

Data type: Numeric

Measurement unit: Hour

Column heading: Upstream\_Count

Description: Count of the number of fish moving upstream in the 10 min sonar recording. All fish within the size range of river herring, 200–350 mm, were counted.

Data type: Numeric

Measurement unit: Count

Column heading: Downstream\_Count

Description: Count of the number of fish moving downstream in the 10 min sonar recording. All fish within the size range of river herring, 200–350 mm, were counted.

Data type: Numeric

Measurement unit: Count

Column heading: Proportion\_Alewife

Description: Proportional presence of alewife in the counts estimated from the weekly biological sampling efforts and linear interpolation.

Data type: Numeric

Measurement unit: Percent (0 – 1.0)

Column heading: Proportion\_Blueback

Description: Proportional presence of blueback herring in the counts estimated from the weekly biological sampling efforts and linear interpolation.

Data type: Numeric

Measurement unit: Percent (0 – 1.0)

Column heading: Upstream\_Alewife

Description: Estimated number of alewife moving upstream in that hour.

Data type: Numeric

Measurement unit: Number of alewife

Comments: Estimates obtained by multiplying the Upstream Count by the Proportion Alewife, then multiplying by a factor of six to generate hourly fish counts (since Upstream Counts are 10 min recordings).

Column heading: Downstream\_Alewife

Description: Estimated number of alewife moving downstream in that hour.

Data type: Numeric

Measurement unit: Number of alewife

Comments: Estimates obtained by multiplying the Downstream Count by the Proportion Alewife, then multiplying by a factor of six to generate hourly fish counts (since Downstream Counts were 10 min recordings).

Column heading: Upstream\_Blueback

Description: Estimated number of blueback herring moving upstream in that hour.

Data type: Numeric

Measurement unit: Number of blueback herring

Comments: Estimates obtained by multiplying the Upstream Count by the Proportion Blueback Herring, then multiplying by a factor of six to generate hourly fish counts (since Upstream Counts are 10 min recordings).

Column heading: Downstream\_Blueback

Description: Estimated number of blueback herring moving downstream in that hour.

Data type: Numeric

Measurement unit: Number of blueback herring

Comments: Estimates obtained by multiplying the Downstream Count by the Proportion Blueback Herring, then multiplying by a factor of six to generate hourly fish counts (since Downstream Counts were 10 min recordings).

Column heading: Water\_temperature

Description: Temperature

Data type: Numeric

Measurement unit: degrees Celsius (°C)