

# **Characteristics of the Mississippi Sound Estuary and Watershed**

Mississippi Sound Estuary Program

July 17, 2025

# Table of contents

<b>Preface</b>	<b>3</b>
<b>I Geographic Setting</b>	<b>4</b>
1 HUCs	6
2 MDEQ Basins	7
3 EPA Ecoregions	8
<b>II Climatology</b>	<b>9</b>
4 Precipitation	11
5 Temperature	12
<b>III Hydrology</b>	<b>13</b>
6 Streams and Waterbodies	15
6.1 Amount of water . . . . .	15
6.1.1 Stream Lengths . . . . .	15
6.1.2 Waterbody Areas . . . . .	15
6.2 Designated Uses . . . . .	16
6.3 Impairments . . . . .	16
6.4 Data Sources . . . . .	16
7 Freshwater Inflows	17
8 Salinity	18
<b>IV People and Land Use</b>	<b>19</b>
9 Population	21

<b>10 Land Use / Land Cover</b>	<b>22</b>
<b>11 Summary</b>	<b>23</b>

# Preface

This is a Quarto book.

To learn more about Quarto books visit <https://quarto.org/docs/books>.

[1] 2

**Part I**

**Geographic Setting**

Some info here about different ways of describing where we are and what comprises the watershed: USGS HUCs, DEQ's division into different basins, and EPA EcoRegions.

Possibly also the definitions from the CCMP of MS Sound, MS Sound Estuary, and MS Sound Watershed.

# 1 HUCs

Nice explanation of HUCs [this USGS page](#).

The HUCs that make up the Mississippi Sound Watershed are 0317 (Pascagoula) and 0318 (Pearl).

Show some mappy breakdowns.

## 2 MDEQ Basins

There are several waterways that don't actually end up in either the Pearl or Pascagoula Rivers. So the Mississippi Department of Environmental Quality uses a slightly different division.

NEED TO CONFIRM, but I think: HUC12s are the same between MDEQ's classification and the USGS HUCs. They're just grouped differently, and the streams that empty into bays or straight into the Sound are the 'Coastal Streams Basin'. There is also a 'Coastal Offshore' grouping, that is comprised of the Sound itself, the islands, and the 3-mile zone beyond the islands.



### 3 EPA Ecoregions

For some geological classification that isn't based on watershed boundaries, we turn to the [EPA's Ecoregions](#).

Intent here is to list which ecoregions are in our watershed, and which are in each basin (using MDEQ's divisions). And maybe how much are of each basin belongs to each ecoregion. Plus show a map.

# **Part II**

# **Climatology**

Pieces of this part will be things like precipitation, temperature, etc.

## 4 Precipitation

Make the precip maps here.

## 5 Temperature

Some descriptions and maps of temperature normals

# **Part III**

## **Hydrology**

Freshwater inflows from the different sources, salinity characteristics, etc.

## 6 Streams and Waterbodies

### 6.1 Amount of water

e.g. how many miles of streams, how many acres of lakes/ponds/etc. in the watershed

**TO-DO: Calculate this by basin (MDEQ definitions, not HUCs)**

#### 6.1.1 Stream Lengths

Table 6.1: Length (mi) of stream types in the MSEP watershed

Type	total_miles
Artificial Path	1,496.8
Canal/Ditch	145.3
Coastline	308.7
Connector	26.6
Stream/River	5.2
Stream/River: Hydrographic Category = Intermittent	20,350.3
Stream/River: Hydrographic Category = Perennial	11,730.7

#### 6.1.2 Waterbody Areas

Table 6.2: Total area (acres) of water body types in the MSEP watershed

Type	total_acres
Lake/Pond: Hydrographic Category = Intermittent	70.6
Lake/Pond: Hydrographic Category = Perennial	67,602.0
Lake/Pond: Hydrographic Category = Perennial; Stage = Average Water Elevation	27,726.5
Lake/Pond: Hydrographic Category = Perennial; Stage = Normal Pool	9.5
Reservoir	48.2
Reservoir: Reservoir Type = Aquaculture	471.6



Table 6.2: Total area (acres) of water body types in the MSEP watershed

Type	total_acres
Reservoir; Reservoir Type = Treatment	954.8
Swamp/Marsh	251,495.2

## 6.2 Designated Uses

from DEQ, what's designated for shellfishing vs. drinking water vs. fish and wildlife (etc.)

## 6.3 Impairments

TMDLs! How many, where are they, what are the TMDLs for.

## 6.4 Data Sources

The `.qmd` file that generated this section was: `streams_waterbodies.qmd`.

Stream Lengths and Waterbody Areas were calculated from the [EPA's NHDPlus](#) dataset.

## 7 Freshwater Inflows

Pearl River, Pascagoula River, bays. Do some summarizing based on USGS gage data?

## 8 Salinity

Summarize the info from the Gulf Data Atlas (e.g. the maps that went into the CCMP). Would be great to summarize the USGS salinity data and DMR's sampling data as well - some seasonal and annual details would be great.

**Part IV**

**People and Land Use**

Here's where population calculations and land use/land cover summaries can be generated.

## 9 Population

Code here that generated population info from Census data

## 10 Land Use / Land Cover

Summarize LULC info by MDEQ basin here

# 11 Summary

In summary, this book has no content whatsoever.

[1] 2