

# State of the Basin Report 2024

## Water Management Advisory Committee Meeting

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**June 26, 2024**

Presented to an advisory committee of the DRBC on June 26, 2024. Contents should not be published or re-posted in whole or in part without permission of the DRBC.

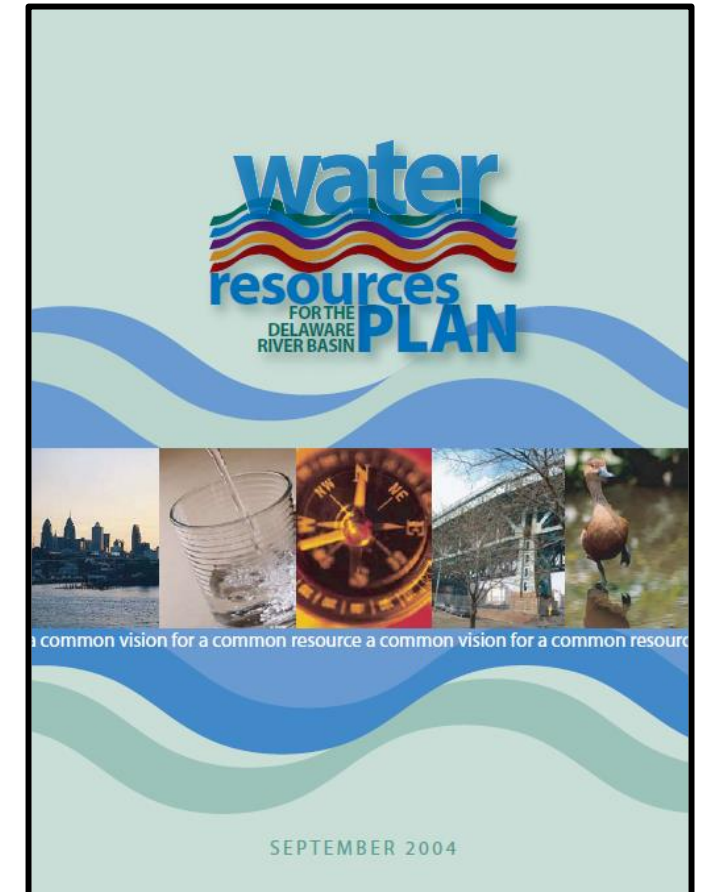
# Background: State of the Basin Report

## 2004 Water Resource Basin Plan

- Compile environmental goals and indicators report every 5 years
- Define the ecological state of the basin
- Describe progress towards achieving results of the Basin Plan

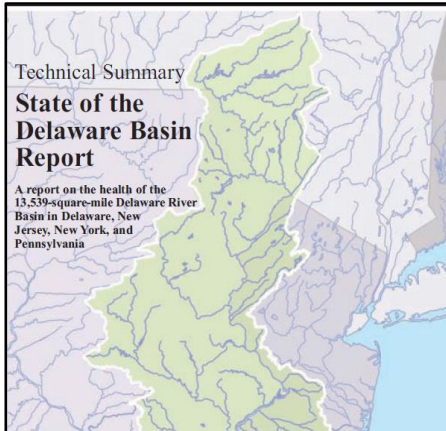
## Purpose

- Assess if specific conditions within the basin are changing
- Multiple indicators can help produce a holistic overview

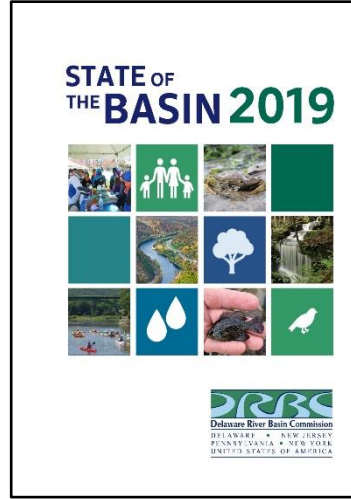
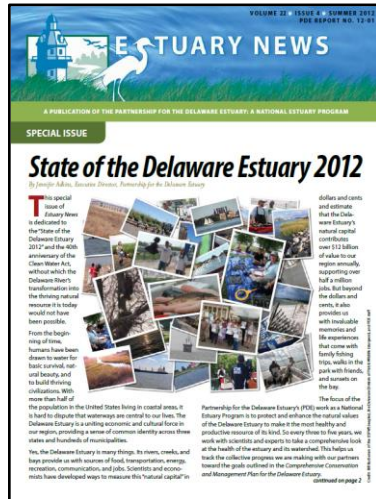
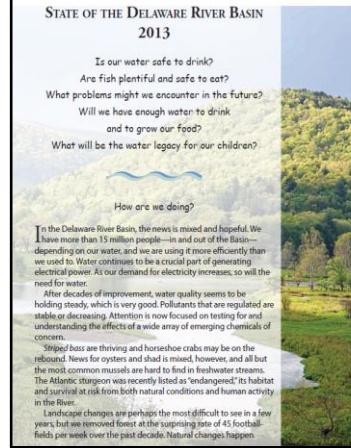


# Foundational & Significant Delaware River Basin Reports

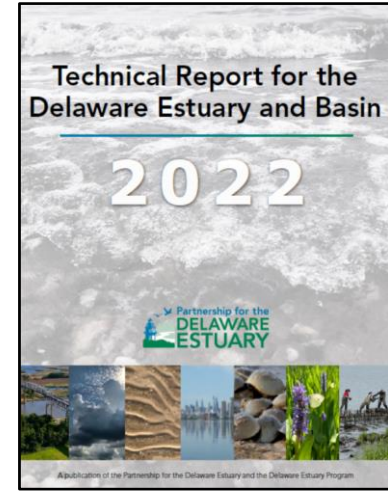
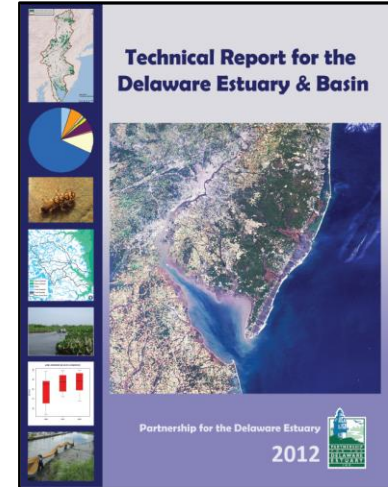
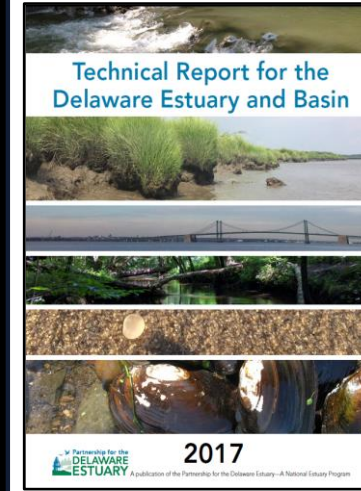
## Foundational Basin Indicator Reports



## Public-facing, distilled reports



## Detailed, high-level technical reports



# 2024 State of the Basin Draft Outline



## 1. Introduction

Basin overview  
Political setting  
Regional watersheds  
Physiographic provinces  
Tidal regions  
Water quality zones



## 2. Watersheds & Landscapes

Population  
Land cover  
Impervious cover



## 3. Water Quantity

Water withdrawals  
Consumptive use  
Groundwater availability  
Water loss & conservation  
Trenton flow  
Salt front



## 4. Climate Change

Precipitation  
Air temperature  
Sea level rise

# 2024 State of the Basin Draft Outline



## 5. Water Quality

Dissolved oxygen

Nutrients

pH

Salinity

Temperature

Contaminants

Emerging contaminants

Whole effluent toxicity

Microplastics

Harmful algal blooms



## 6. Living Resources

Atlantic sturgeon

White perch

Striped bass

Weakfish

American shad

Brook trout

American eel

Freshwater mussels

Macroinvertebrates

Horseshoe crab

Eastern oyster

Blue crab

Osprey

Submerged aquatic  
vegetation

Invasive species



## 7. DEIJB

To be determined

# IMPERVIOUS COVER

## DESCRIPTION

Impervious cover, such as roads, parking lots, and rooftops, prevent rainfall from infiltrating and recharging groundwater resources. This results in water running off impervious areas, which can carry pollutants to streams and rivers and contribute to local flooding. Impervious cover measures the percentage of impervious surfaces within a given area. Research has shown that when impervious cover reaches 10%, the health of streams and aquatic life are "impacted," while greater than 25% impervious cover, stream habitat are potentially "non-supporting." Areas with more development typically have higher percentages of impervious cover.

## PRESENT STATUS

Impervious cover percentages for the 147 subwatersheds in the Delaware River Basin for the Shippensburg 2016 land cover dataset. Subwatersheds in the Lower Region along the Delaware River near Philadelphia have the greatest concentration of development, hence higher impervious cover of 30% and greater. In contrast, the primarily forested areas in the Upper Region of the Basin (East-West Branch, Lackawaxen, and Neversink-Mongaup) have the lowest percent imperviousness.

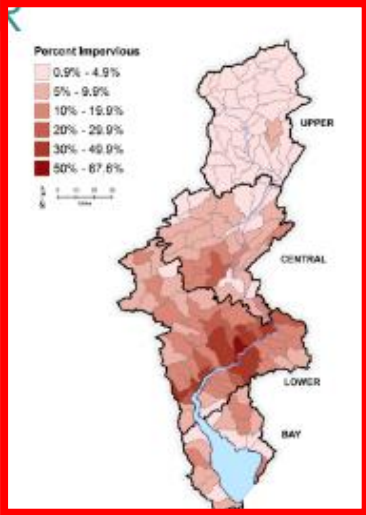


FIGURE 1-5: Percent Impervious in the Delaware River Basin, 2016.

## TRENDS

Increases in impervious cover is an indication of growing development in a region. Figure 1-6 shows the levels of impervious cover for subregions in the Basin from 1996 to 2010. Consistent with the urbanizing areas in the Basin, the Lower Region of the Basin (Schuylkill Valley, Upper Estuary, and Lower Estuary) experienced the greatest increase of impervious surfaces from 1996 to 2010. In addition, the Lehigh Valley in the Central Region saw more development from 2006 to 2010.

## ACTIONS/NEEDS

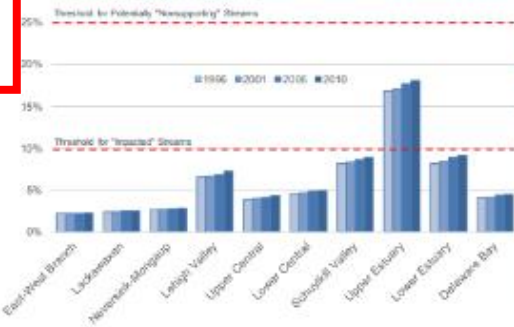
The current available land cover data and related impervious cover are NOAA CSC C-CAP for 1996, 2001, 2006, and 2010. Shippensburg University has an updated, higher-resolution (1-meter) land cover dataset for 2013; however, applying impervious cover percentages to these land cover categories is a challenge. Moreover, comparing between the NOAA and Shippensburg datasets poses an additional obstacle because of the difference in land cover categories. A crosswalk across the datasets would be very helpful.

Stormwater management strategies to reduce the impact from impervious surfaces vary in states and municipalities in the Basin. Coordinated stormwater management efforts across federal, state, and local entities is needed across the Basin for protection and restoration of water resources.

## SUMMARY

Impervious cover is a good indicator of urbanization and consequently stream health in the Delaware River Basin. Identifying trends where impervious surfaces are increasing over time may be useful for managing urban sprawl and the potential negative impacts on stream health and aquatic life. Implementation of stormwater best management practices to reduce and limit impervious cover will help maintain healthy streams, provide aquatic habitat, and decrease flooding and groundwater recharge issues.

FIGURE 1-6: Percent Impervious in the Delaware River Basin by Subbasin, 1996-2010.



# Explaining Indicators



Improving



Worsening



No Trend

Very Good

Good

Fair

Poor

Very Poor



# Current Timeline

**April – July 2024:**  
Internal Draft  
Writing &  
Circulating for  
Comments

**August -  
September 2024:**  
Internal Draft  
Due  
Revisions as  
needed

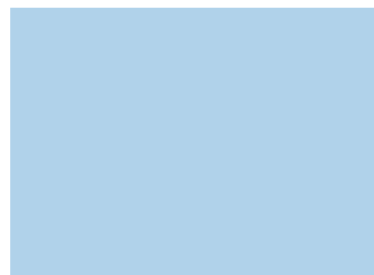
**September –  
October 2024:**  
Review by  
Commissioners

**November 2024:**  
Expected  
Publication &  
Release

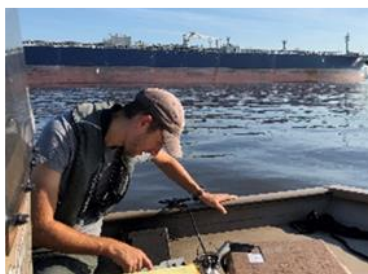


# Contact

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