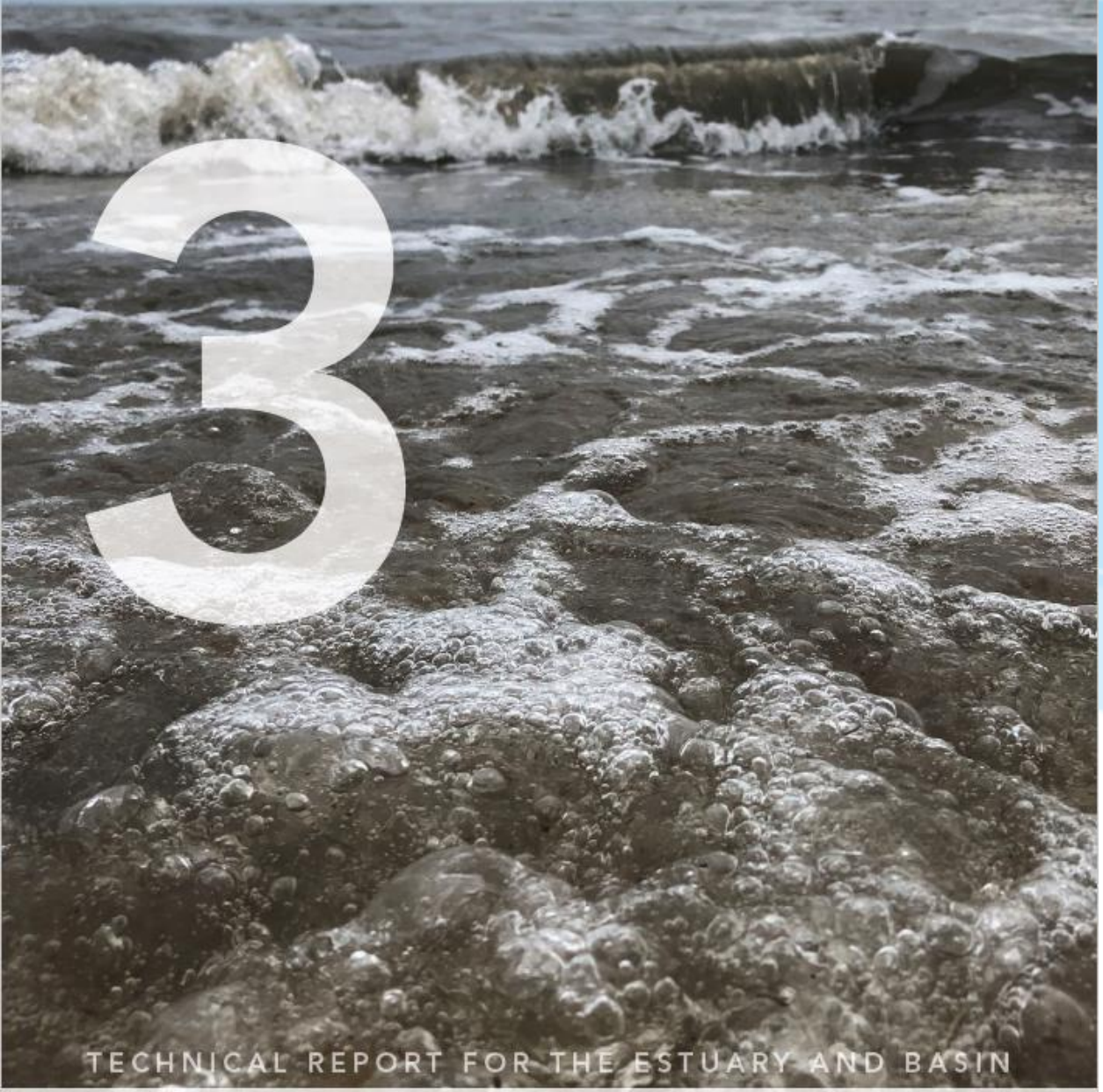


Chapter 3 authors

Michael Thompson, P.E.

Sara Sayed

Amy Shallcross, P.E.

Chad Pindar, P.E.

Presented by

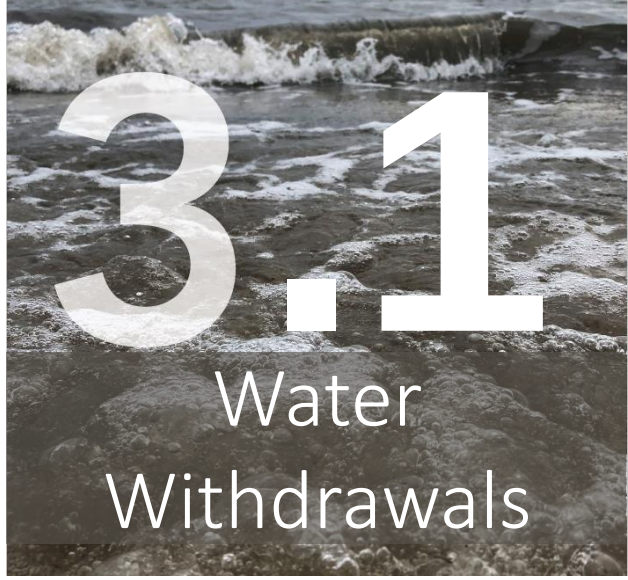
Sarah Beganskas, PhD

PDE Science Summit

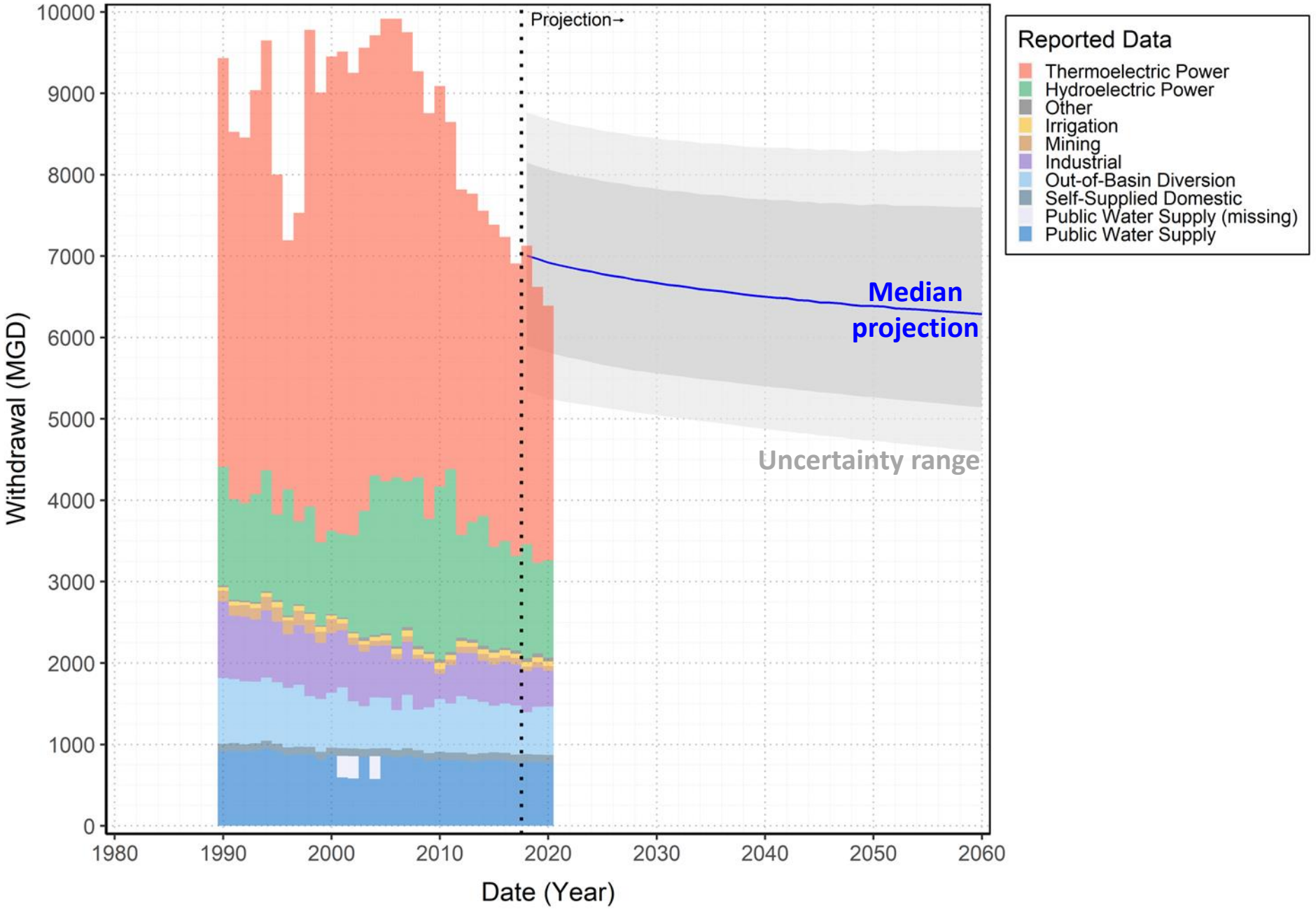
January 30, 2023

Delaware River Basin Commission

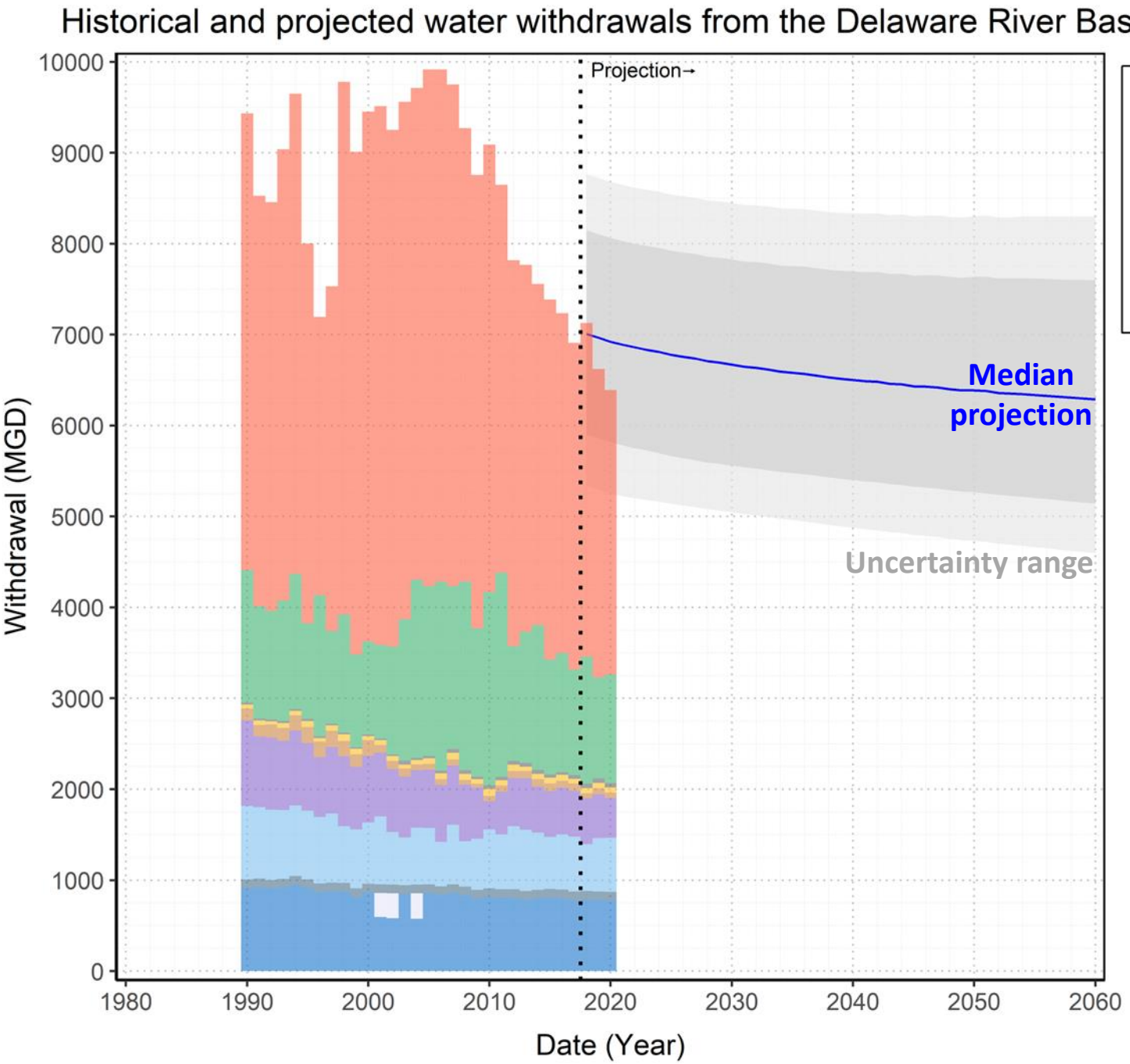
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

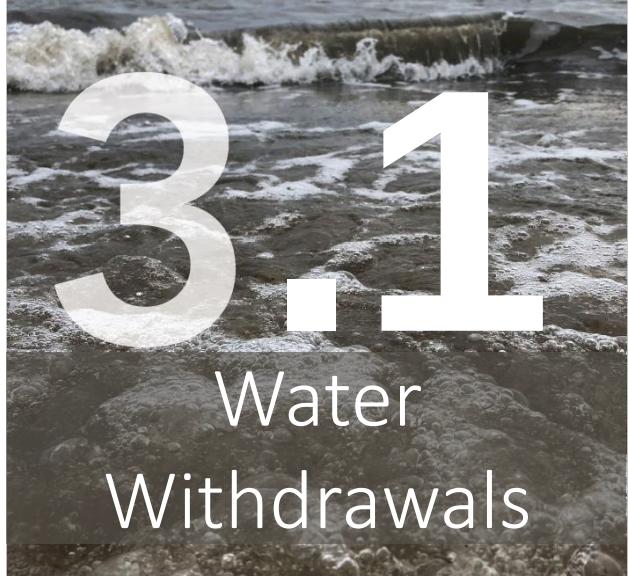


Historical and projected water withdrawals from the Delaware River Basin



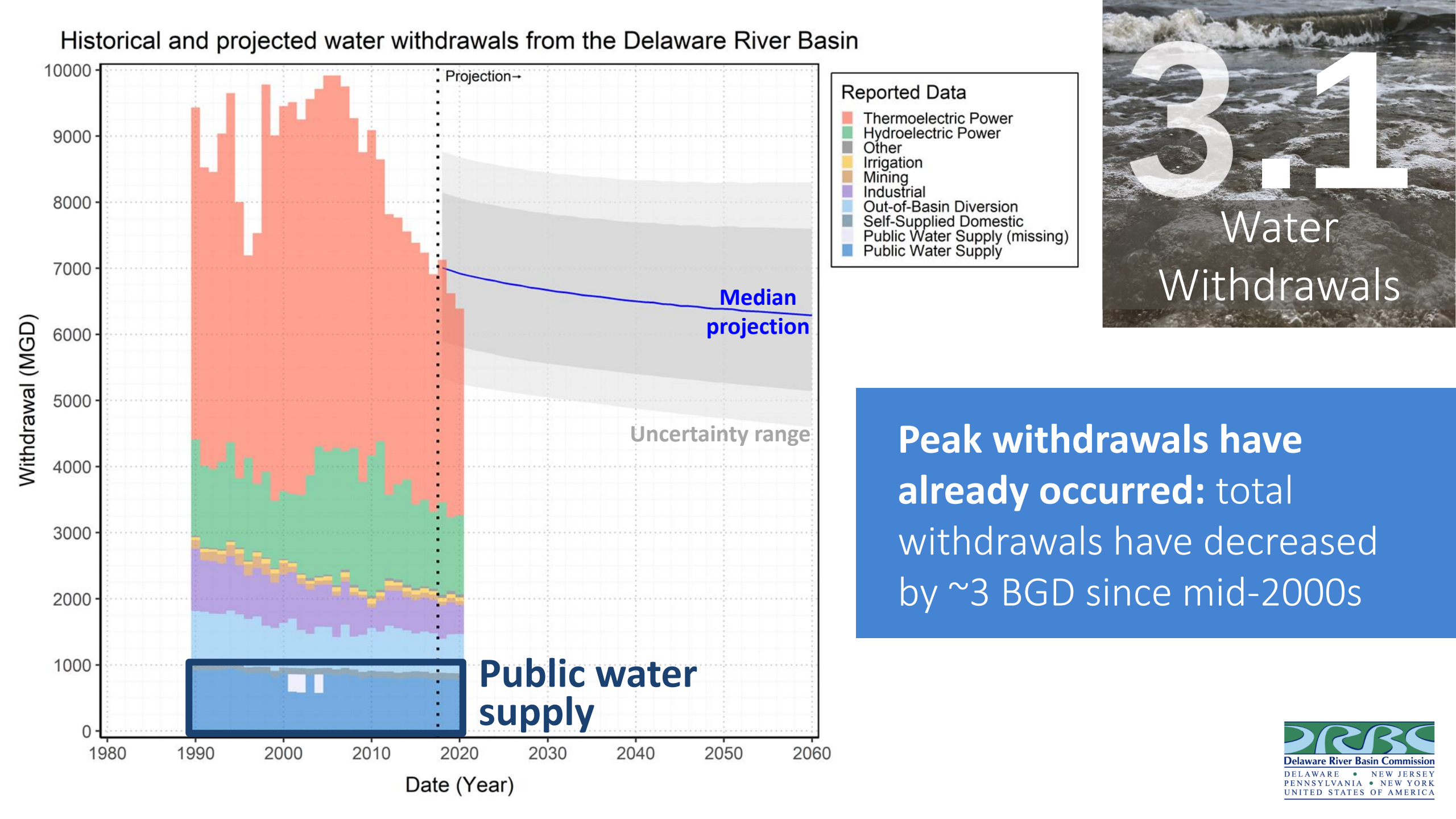
Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA





Peak withdrawals have already occurred: total withdrawals have decreased by ~3 BGD since mid-2000s

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Historical and projected water withdrawals from the Delaware River Basin

Withdrawal (MGD)

Date (Year)

Projection→

Reported Data
- Thermoelectric Power
- Hydroelectric Power
- Other
- Irrigation
- Mining
- Industrial
- Out-of-Basin Diversion
- Self-Supplied Domestic
- Public Water Supply (missing)
- Public Water Supply

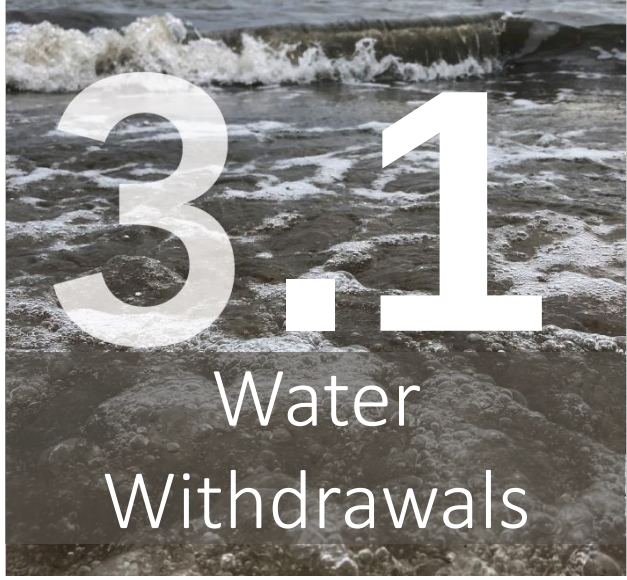
Median projection

Uncertainty range

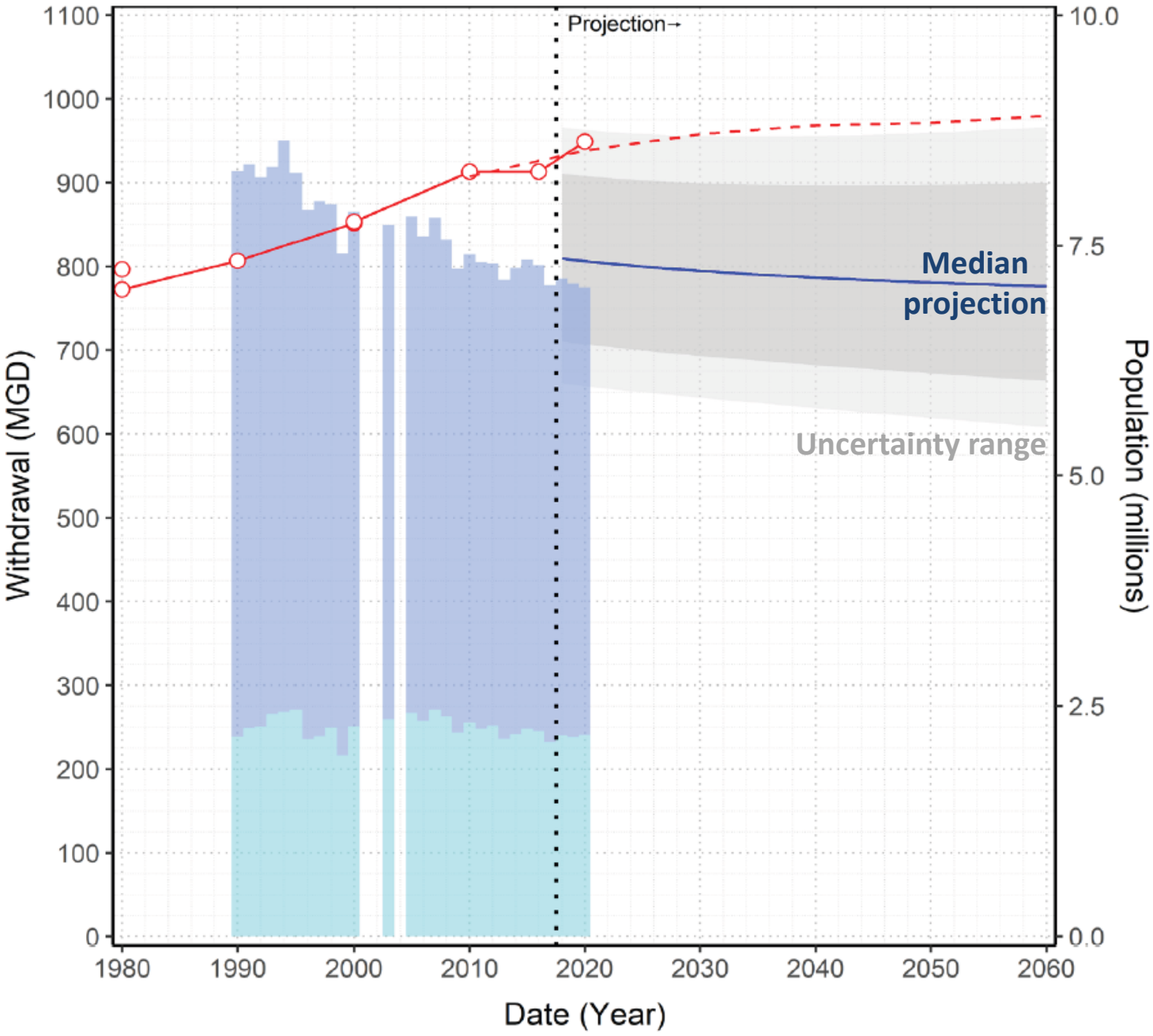
Public water supply

Peak withdrawals have already occurred: total withdrawals have decreased by ~3 BGD since mid-2000s

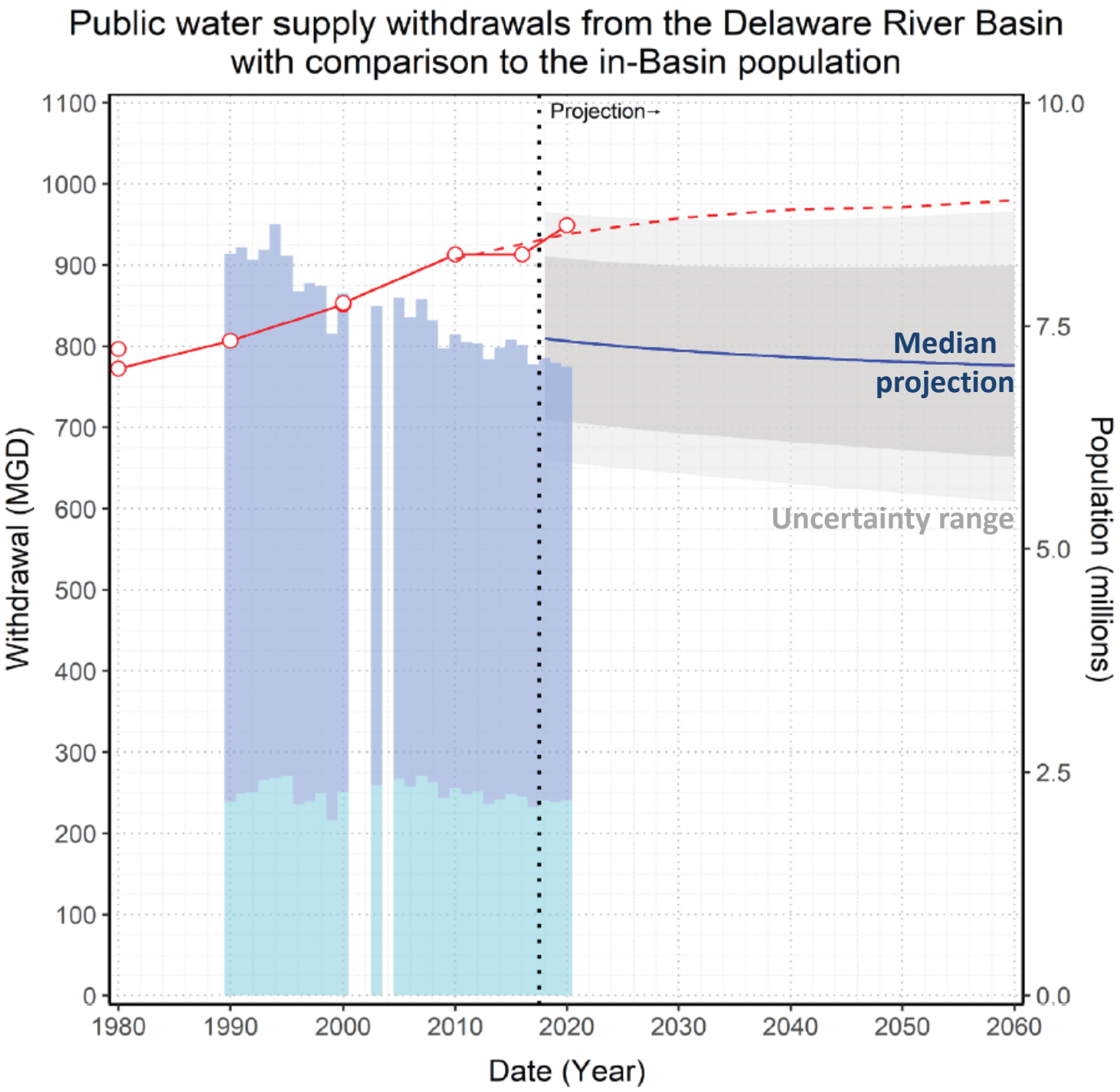
Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

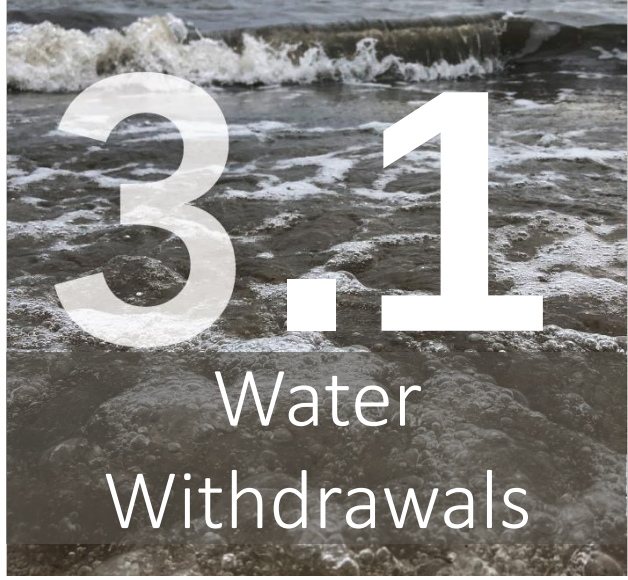


Public water supply withdrawals from the Delaware River Basin with comparison to the in-Basin population



Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

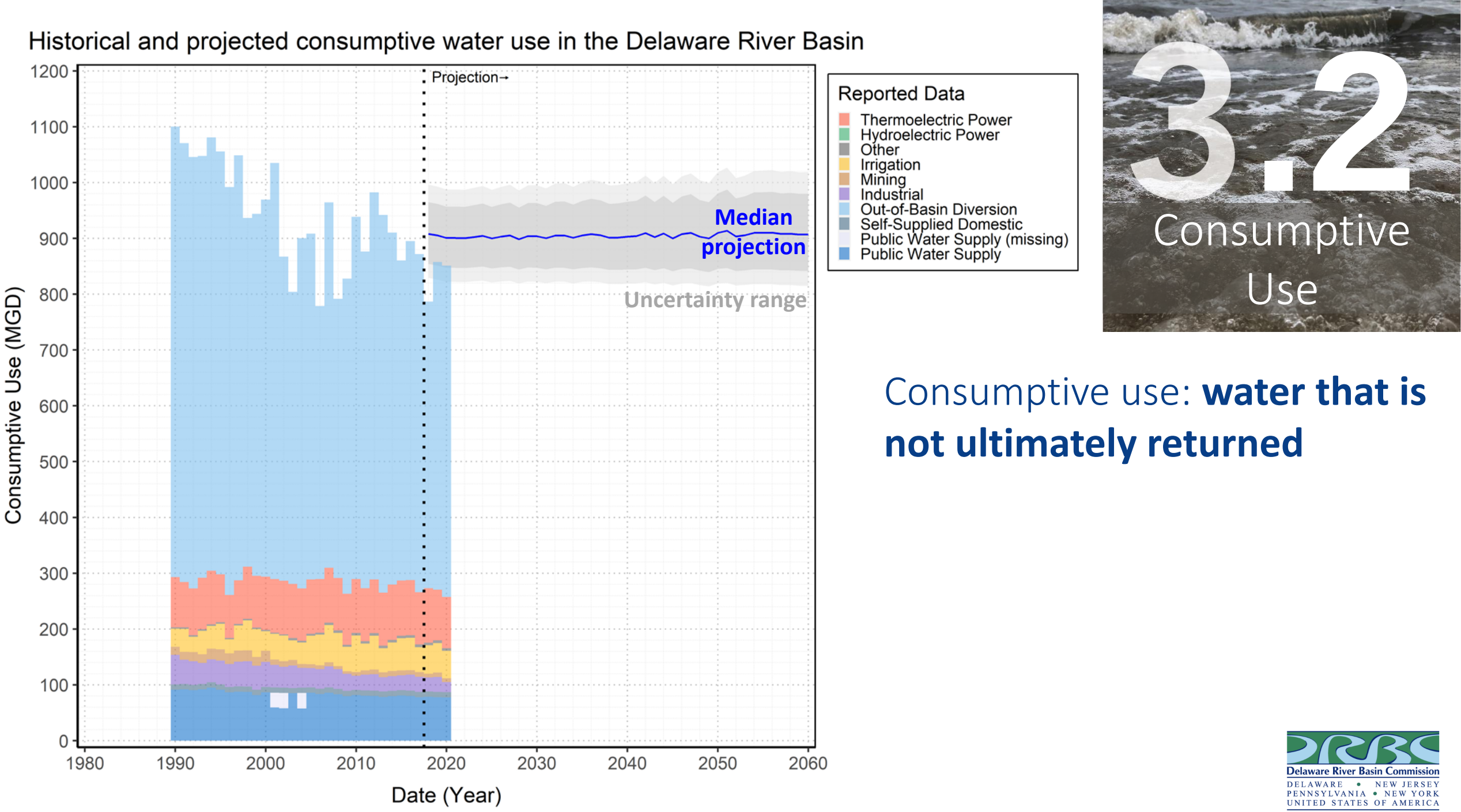




Public Water Supply withdrawals have **decreased despite growing population**:

- Infrastructure leak repairs
- End-of-pipe water conservation
- etc.

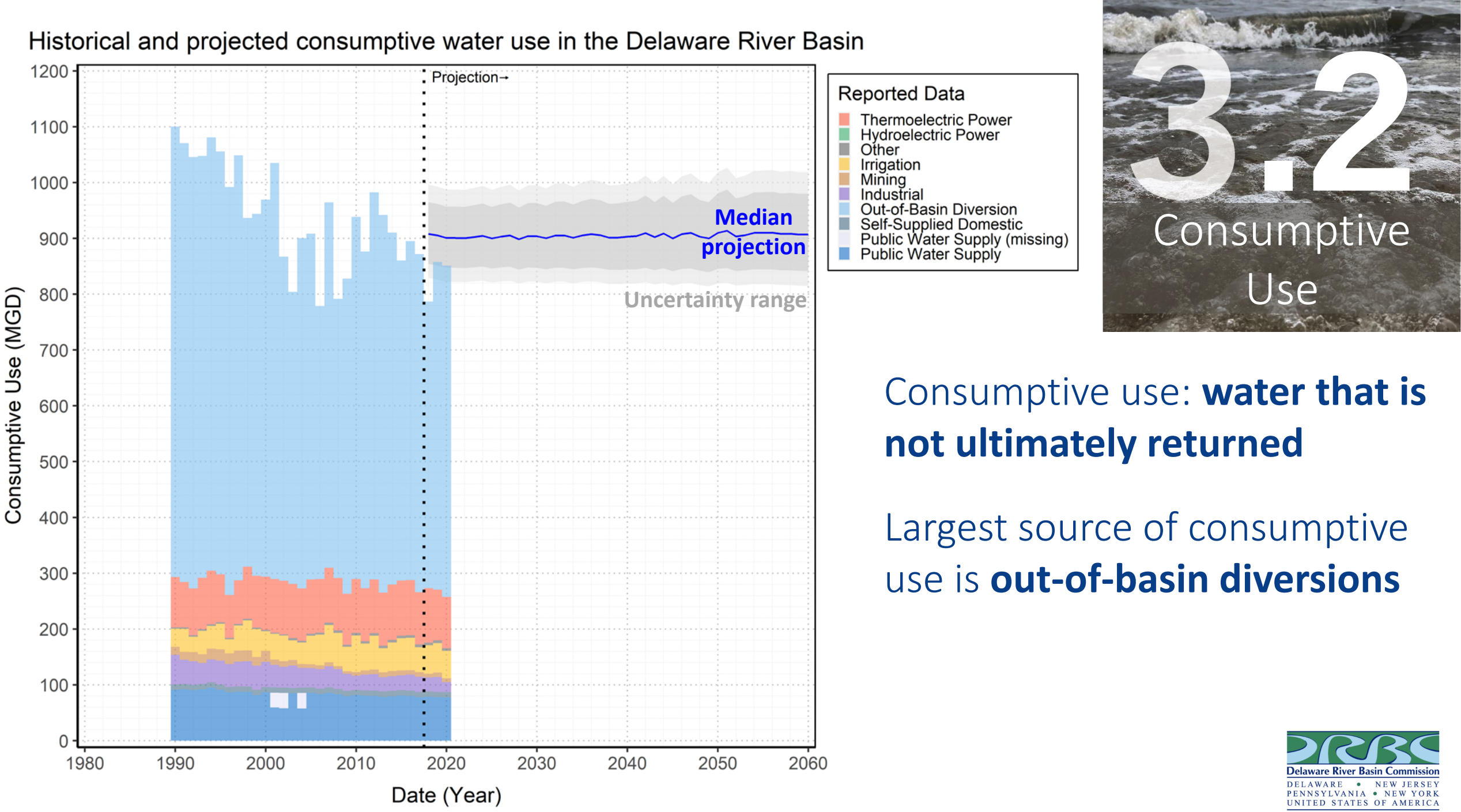
Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



3.2 Consumptive Use

Consumptive use: **water that is not ultimately returned**

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

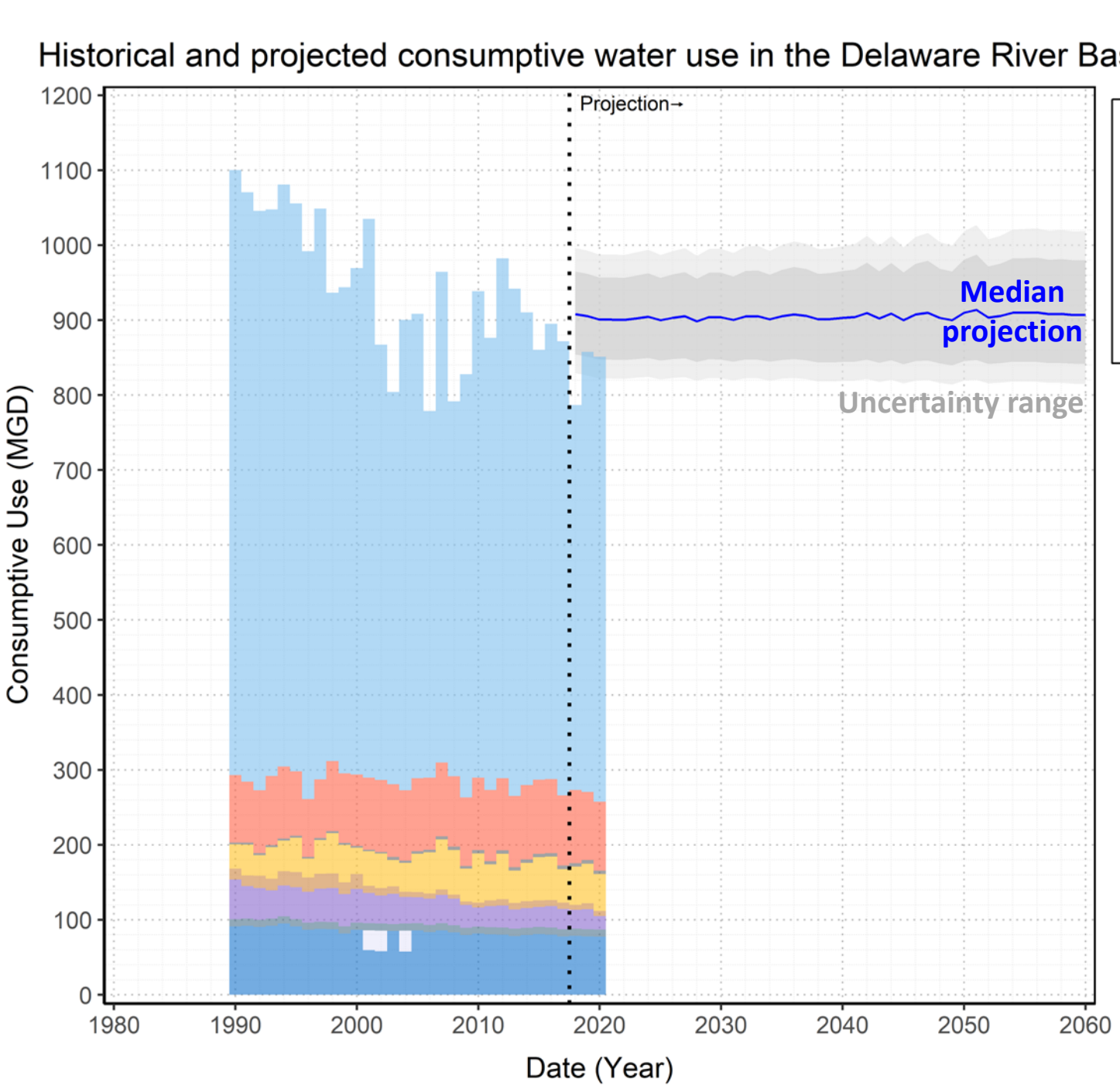


3.2 Consumptive Use

Consumptive use: **water that is not ultimately returned**

Largest source of consumptive use is **out-of-basin diversions**

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

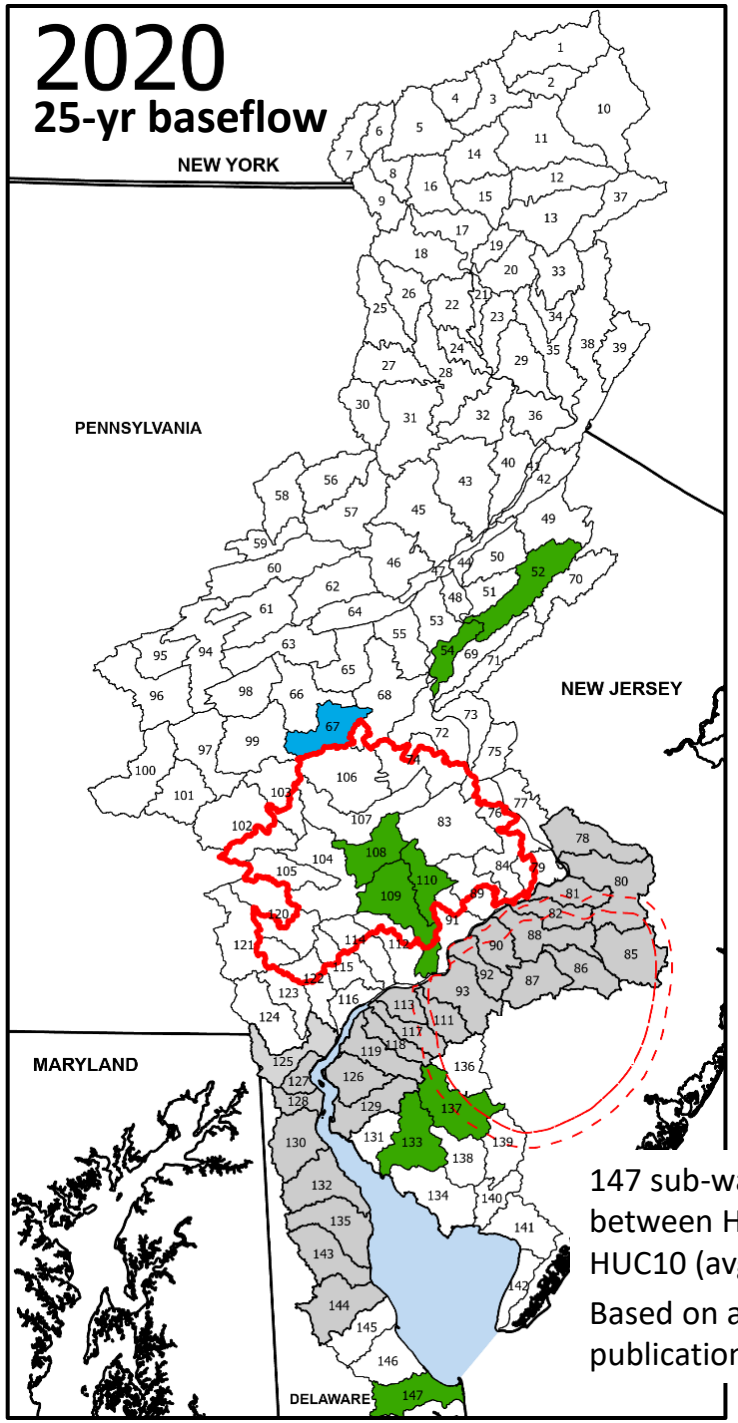


Consumptive use: **water that is not ultimately returned**

Largest source of consumptive use is **out-of-basin diversions**

Consumptive use is **projected to remain constant** (~900 MGD)

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



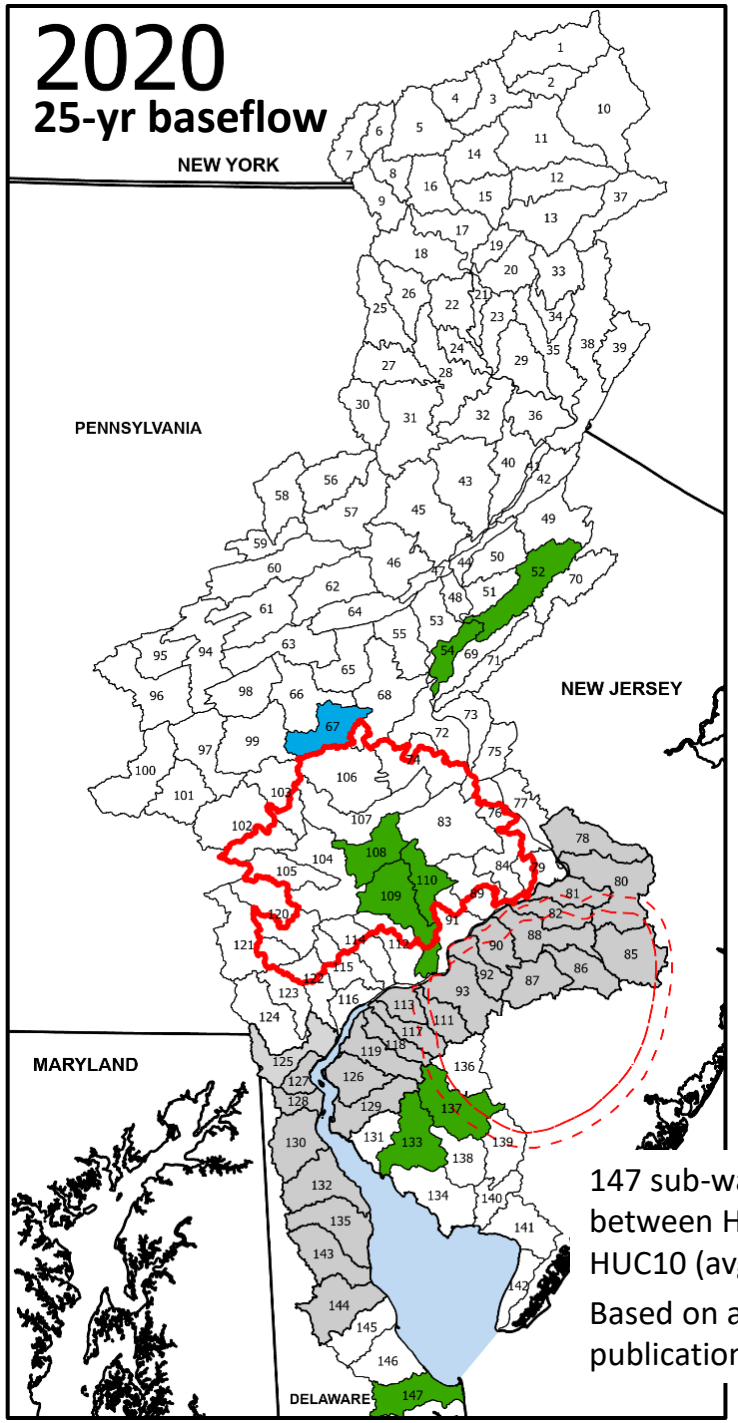
Percent of Available Groundwater Withdrawn

- 0–25%
- 25–50%
- 50–75%
- 75–100%
- >100%

147 sub-watersheds (avg 87.4 mi^2), between HUC12 (avg 40mi^2) and HUC10 (avg 227 mi^2)

Based on a 2006 USGS/DRBC publication.

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Percent of Available Groundwater Withdrawn

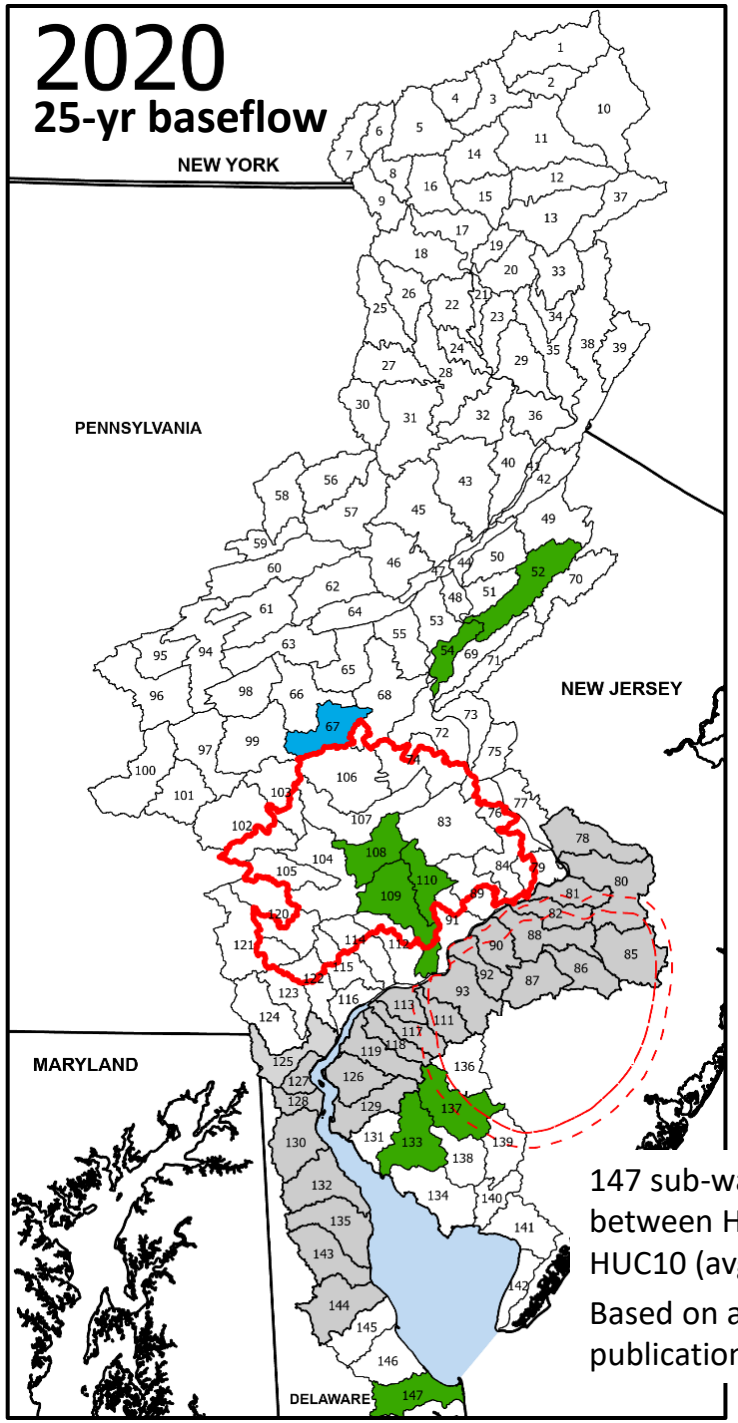
- 0–25%
- 25–50%
- 50–75%
- 75–100%
- >100%

Screening tool not applied to areas that rely heavily on confined aquifers

147 sub-watersheds (avg 87.4 mi^2), between HUC12 (avg 40mi^2) and HUC10 (avg 227 mi^2)

Based on a 2006 USGS/DRBC publication.

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Percent of Available Groundwater Withdrawn

- 0–25%
- 25–50%
- 50–75%
- 75–100%
- >100%

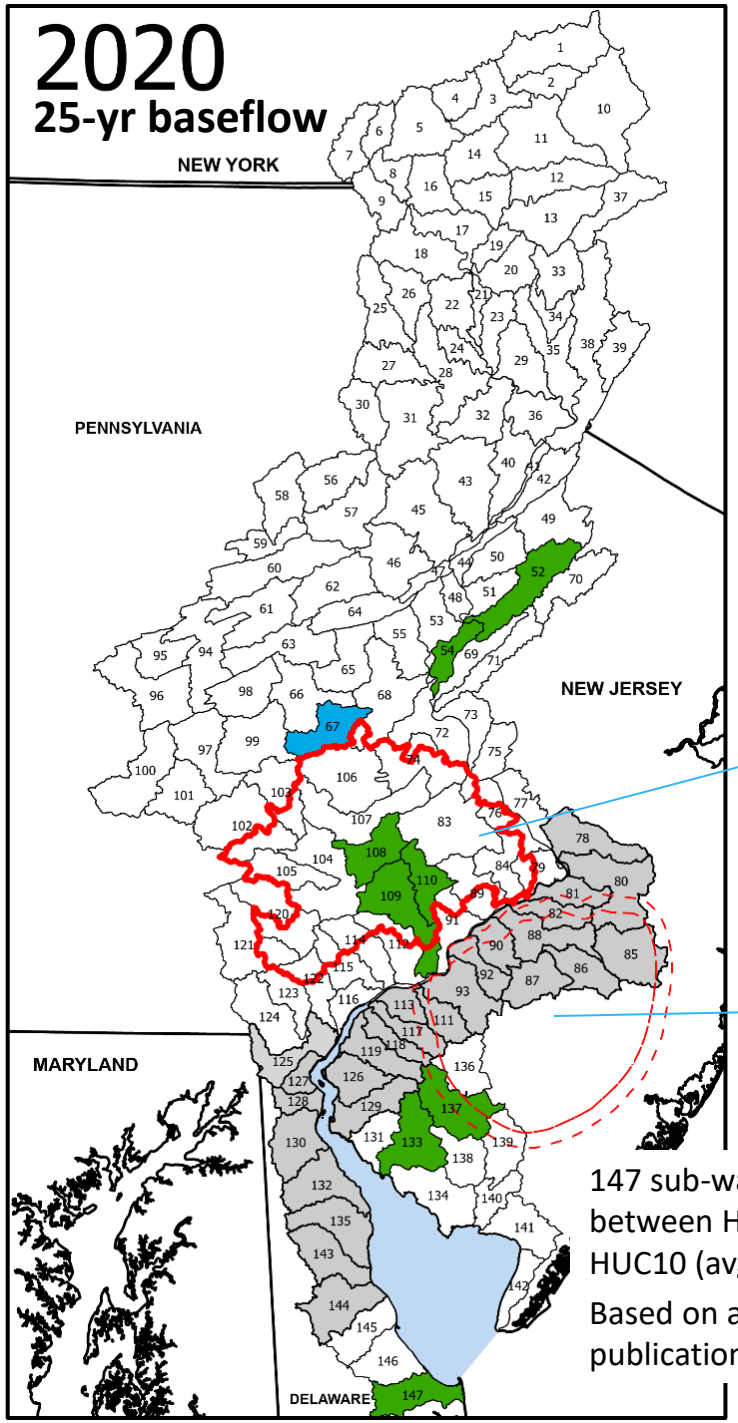
Screening tool not applied to areas that rely heavily on confined aquifers

147 sub-watersheds (avg 87.4 mi^2), between HUC12 (avg 40mi^2) and HUC10 (avg 227 mi^2)

Based on a 2006 USGS/DRBC publication.

Groundwater use across most of the basin **is sustainable and is projected to remain sustainable** through 2060.

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Percent of Available Groundwater Withdrawn

- 0–25%
- 25–50%
- 50–75%
- 75–100%
- >100%

Screening tool not applied to areas that rely heavily on confined aquifers

Southeastern Pennsylvania Groundwater Protected Area

New Jersey Critical Area No. 2

147 sub-watersheds (avg 87.4 mi^2), between HUC12 (avg 40mi^2) and HUC10 (avg 227 mi^2)

Based on a 2006 USGS/DRBC publication.

Groundwater use across most of the basin **is sustainable and is projected to remain sustainable** through 2060.

Net groundwater withdrawals have decreased over the past two decades.

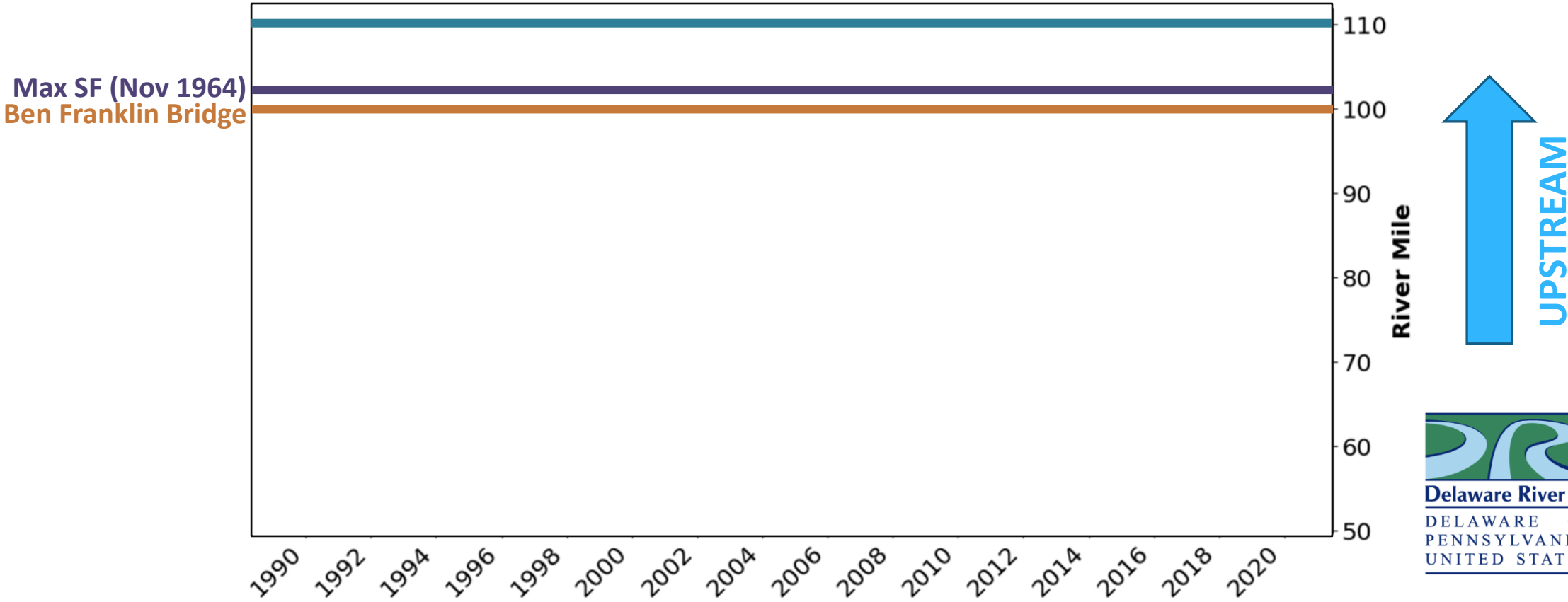
Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

The Salt Front (SF) location represents the **transition from salt water to fresh water**.

3.4 Salt Front Location

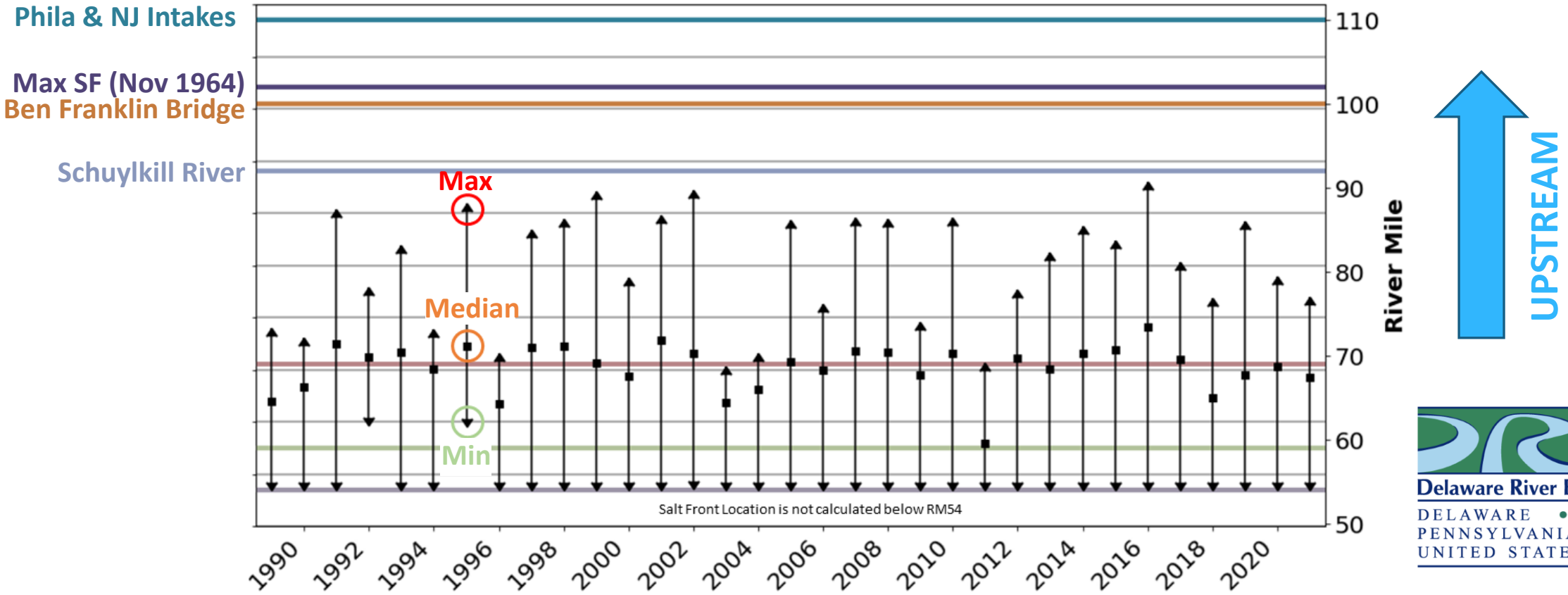
The Salt Front (SF) location represents the **transition from salt water to fresh water**.

Phila & NJ Drinking Water Intakes at RM 110



Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

The Salt Front (SF) location represents the **transition from salt water to fresh water**.

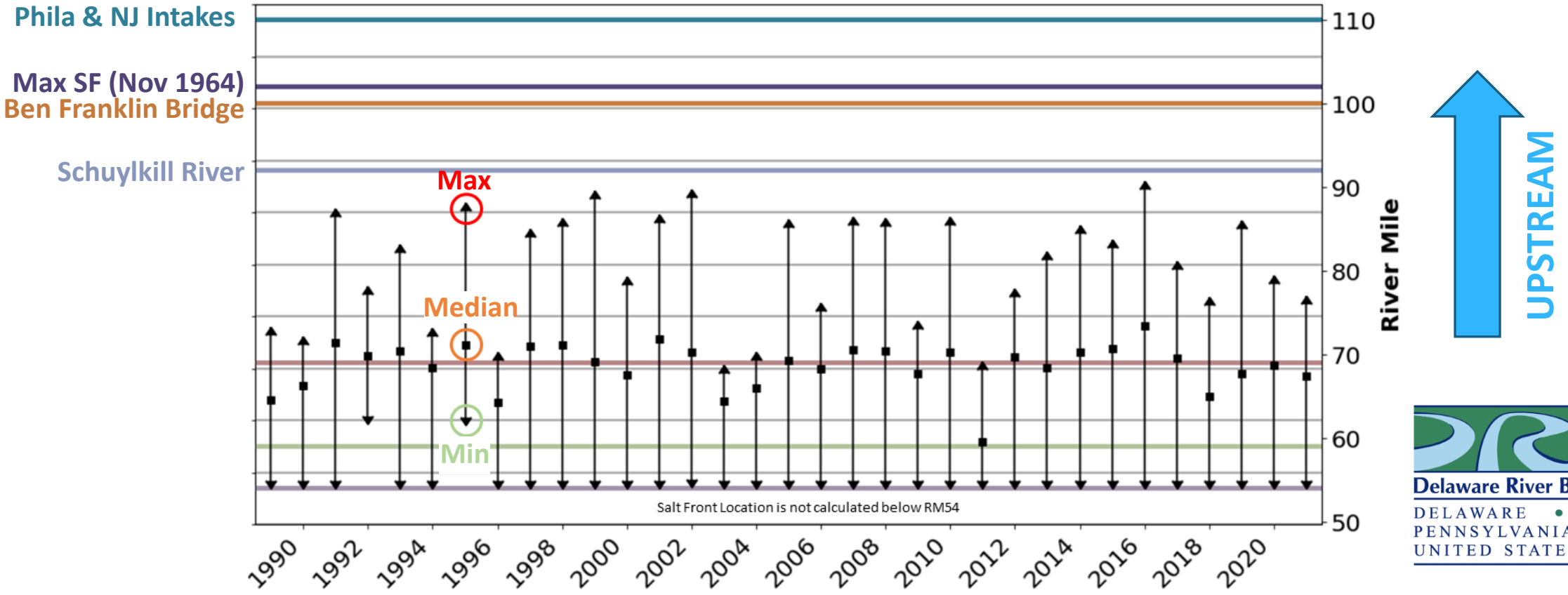


Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA

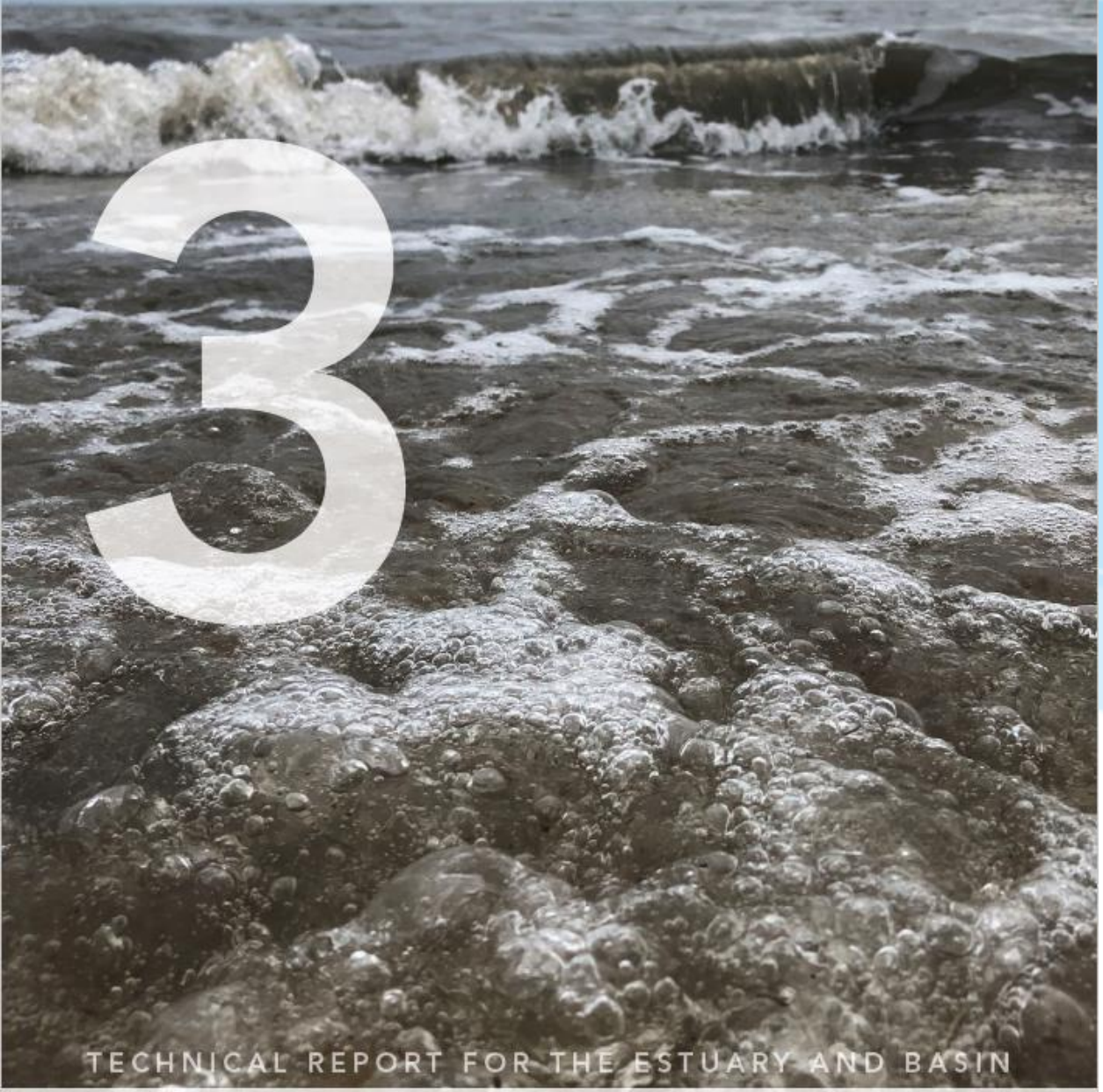
3.4 Salt Front Location

The Salt Front (SF) location represents the **transition from salt water to fresh water**.

Flow management strategies **have successfully protected drinking water intakes** from salinity intrusion.



Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Several billion gallons are withdrawn each day from the Delaware River Basin for a variety of uses.

It is essential that we continue monitoring and planning to ensure that **future demand can be met sustainably**.

Delaware River Basin Commission
DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA