



Chesapeake Bay Program

REVISED SHAD ABUNDANCE INDICATOR

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Sustainable Fisheries full GIT Meeting
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SHAD INDICATOR BACKGROUND

- Chesapeake Bay Program indicator to track shad abundance in tributaries and Baywide
- Management Board requested that the indicator be updated last year to better represent Baywide shad abundance
- Fisheries GIT/Scientific, Technical Assessment and Reporting teams convene American Shad Indicator Action Team to revise indicator
- Co-chairs: Eric Brittle (VDGIF) and Jim Cummins (ICPRB)

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|-----------|----------|---------|---------|
| • ICPRB | • VMRC | • NOAA | • CRC |
| • PRFC | • MD DNR | • USFWS | • UMCES |
| • VA DGIF | • PA FBC | • USGS | |
| • VIMS | • ASMFC | • EPA | |

OLD INDICATOR

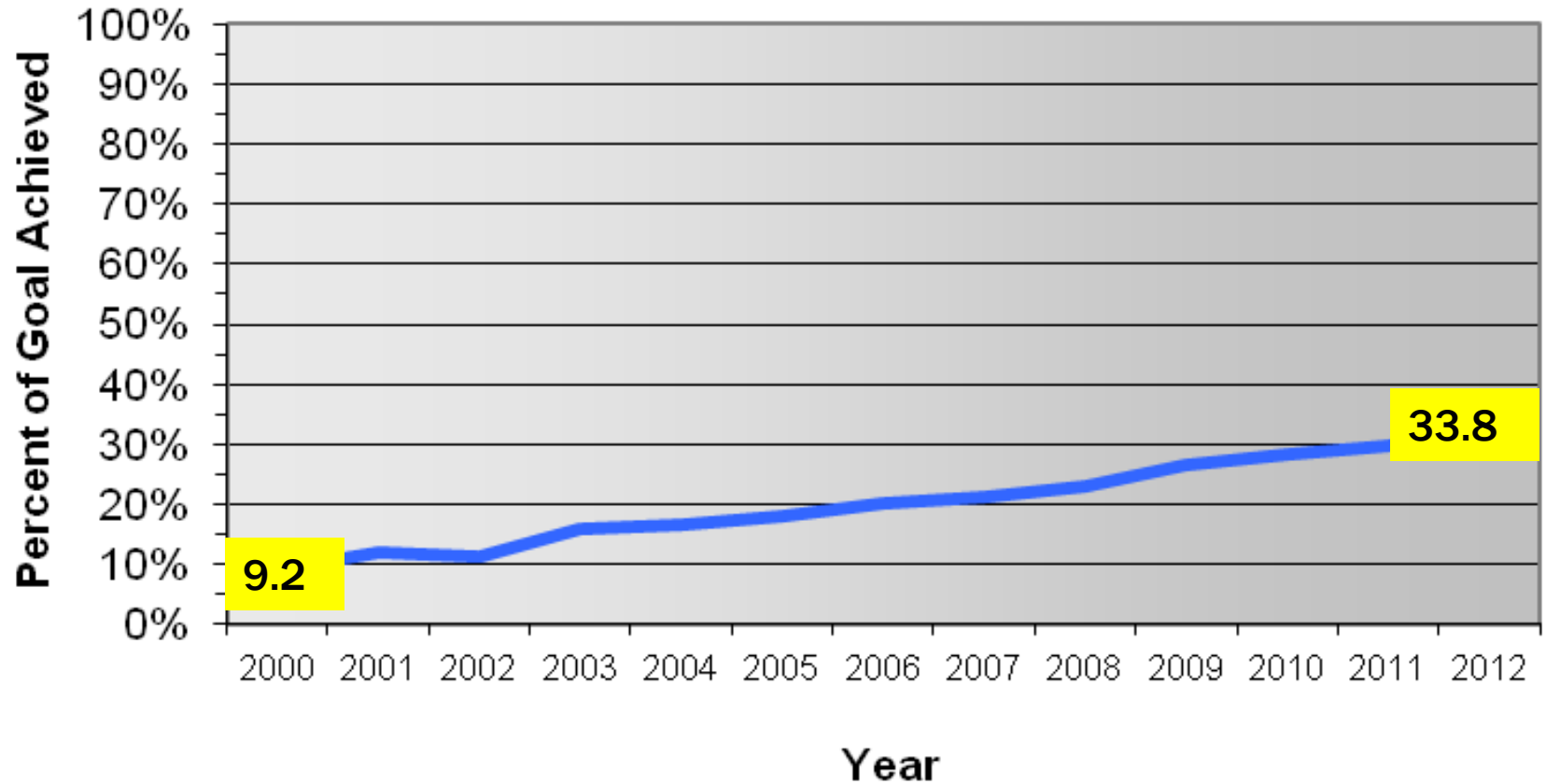
- Previous version of the indicator included the following tributaries, each with own goal:

Tributary	Data	Goal Basis
Susquehanna	Fish passage count	2,000,000 shad passing York Haven Dam annually
Potomac	CPUE from PRFC pound net data	1950s CPUE
Bosher's Dam	Fish passage count	500,000 shad passing Bosher's Dam annually
York	CPUE from VIMS gill-net survey	1950s CPUE

Tributaries were combined and weighted by landings data to calculate overall Baywide index...

OLD INDICATOR

Shad Returning to the Chesapeake Bay



Tributaries were weighted by landings data

WHAT CHANGED IN REVISED INDICATOR?

- Added Rappahannock River data
- Added Lower James River data to complement the Boshers' Dam count
- Updated York River data
- Developed higher abundance targets for the James and Rappahannock based on higher 1950s population levels vs. low 1980s levels
- Revised weighting scheme for Baywide index

WHAT IS INCLUDED IN THE REVISED INDICATOR?

- 2000-2012 data
- shows percent of goal achieved for each tributary

Tributary	Data	Goal Basis
Susquehanna	Fish passage count	2,000,000 shad passing York Haven Dam annually
Potomac	CPUE from PRFC pound net data	1950s CPUE
Lower James	CPUE from VIMS gill-net survey	Estimated 1950s CPUE*
Bosher's Dam	Fish passage count	500,000 shad passing Bosher's Dam annually
York	CPUE from VIMS gill-net survey	1950s CPUE
Rappahannock	CPUE from VIMS gill-net survey	Estimated 1950s CPUE*

*calculated using the ratio of York 1980s CPUE : 1950s CPUE
(This assumes the same trend in shad abundance in other VA tribs as seen in the York)

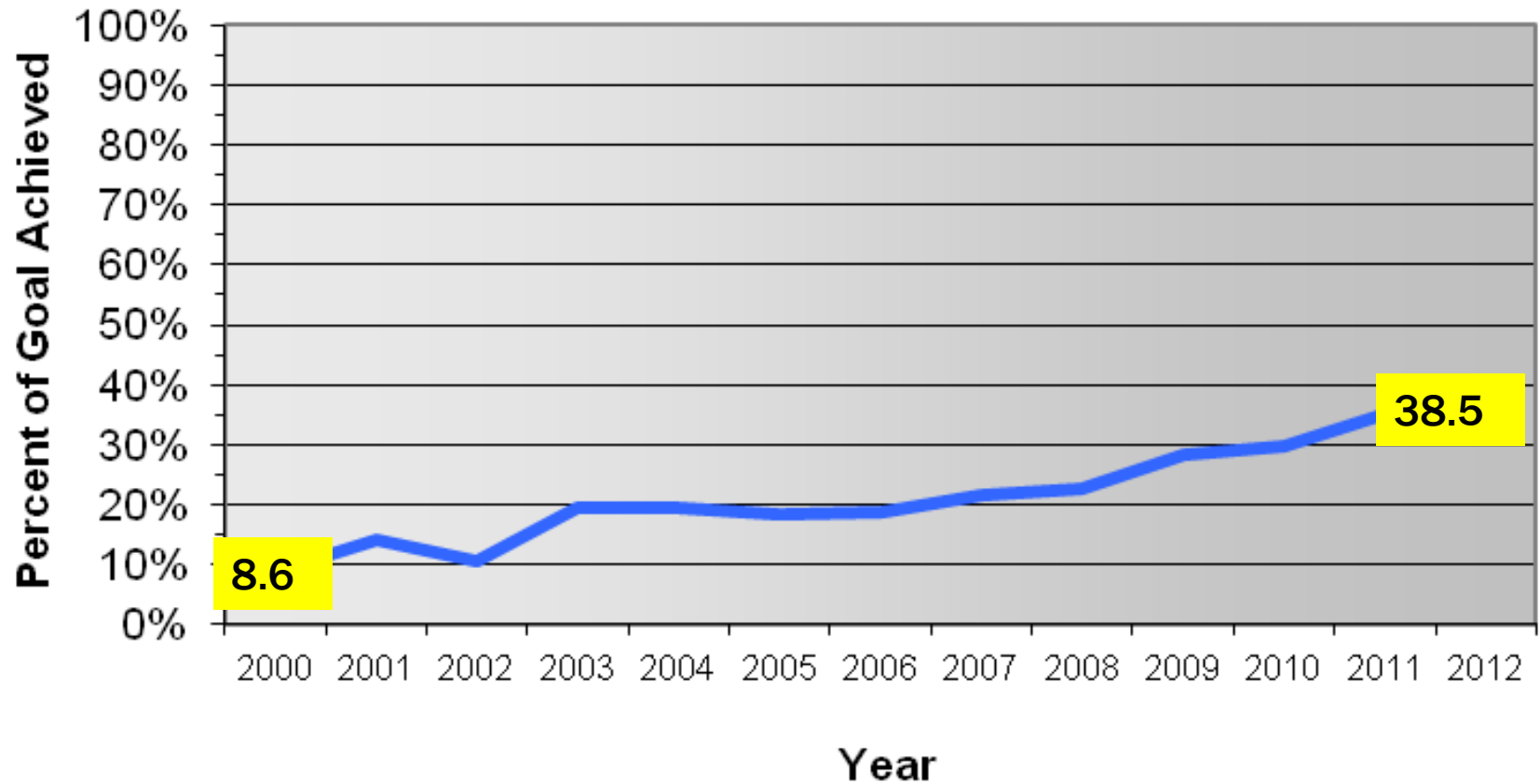
WHAT IS INCLUDED IN THE REVISED INDICATOR?

- Tributaries are combined and weighted to calculate overall baywide index

Tributary	Old Weighting Scheme: Landings Data	New Weighting Scheme: Watershed Size (available habitat)
Susquehanna	37%	45%
Potomac	26%	26%
James	21%	19% <i>[weighted combination of lower James (55%) and Boshers's Dam data (45%)]</i>
York	16%	5%
Rappahannock	N/A	5%
Total	100%	100%

REVISED INDICATOR

Shad Returning to the Chesapeake Bay



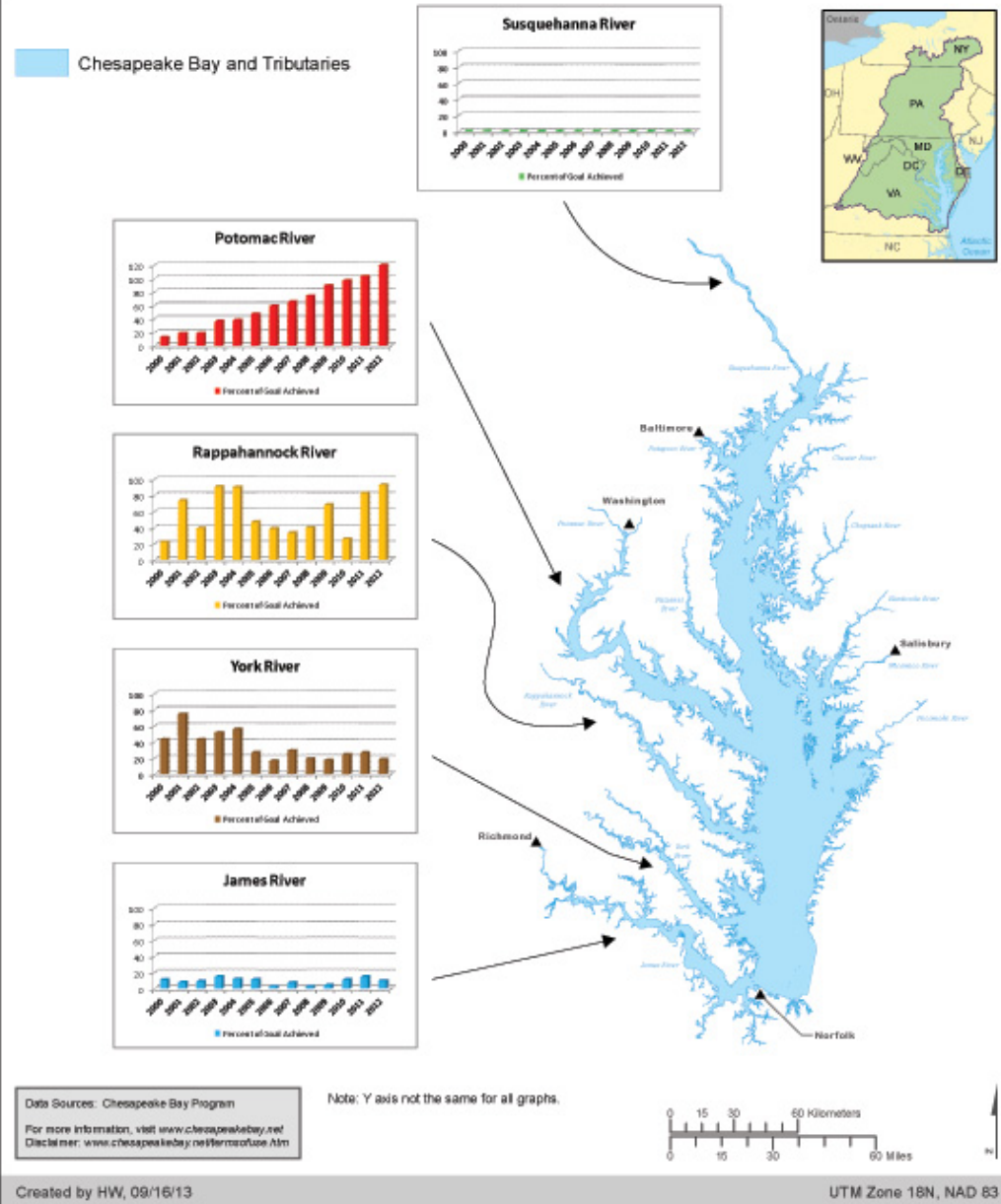
Old Indicator: 9.2% in 2000 - 33.8% in 2012

NEW INDICATOR

- Percent of Goal Achieved vs. Year
- Varying trends by tributary
- Potomac and Susquehanna have strong trends that influence overall Baywide index

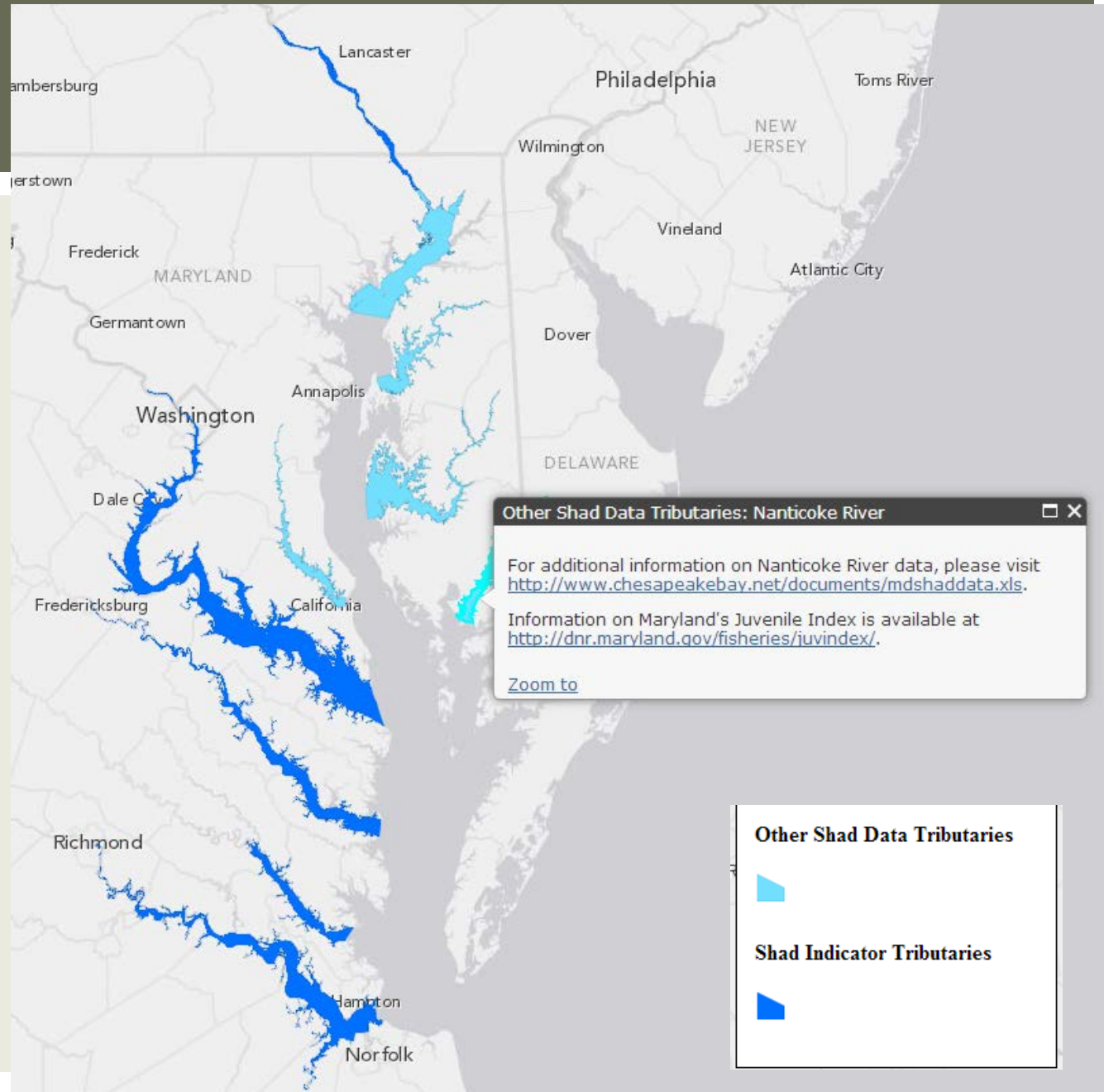
Shad Abundance (2012)

Ecosystem Health Assessment



NEW MAP

- Dynamic map with links to additional data
- Includes links for MD tributary juvenile index data and information on current/past stocking and surveys



SUMMARY

- The American Shad Indicator Action Team revised the indicator to:
 - Incorporate more accurate tributary recovery targets (VA)
 - Incorporate more data
 - Abundance data from additional rivers (Rappahannock)
 - Link to stocking efforts and survey data (MD)
 - Features abundance charts for each river
- Future Work
 - Develop targets for MD tribs and add to indicator

QUESTIONS?



Chesapeake Bay Program
A Watershed Partnership

ABUNDANCE TARGETS

Tributary	Old Target	New Target
Susquehanna	2,000,000 shad passing York Haven Dam annually	Same
Potomac	31.1 CPUE <i>1950s data</i>	Same
Lower James	6.4 CPUE <i>1980s data</i>	34.66 CPUE* <i>1950s data</i>
Bosher's Dam	500,000 shad passing Bosher's Dam annually	Same
York	17.44 CPUE <i>1950s data</i>	Same
Rappahannock	N/A	7.85 CPUE* <i>1950s data</i>

*1950s CPUE estimated using the ratio of York 1980s CPUE : 1950s CPUE
(This assumes the same trend in shad abundance in other VA tribs as seen in the York)