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Effects of Conowingo Reservoir Sedimentation on Loads to the Bay

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Based on a report by:
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Report

- TS Lee
- Loads
- Influence of reservoirs
- Susquehanna

Photo credit:
NASA MODIS,
Sept. 13, 2011

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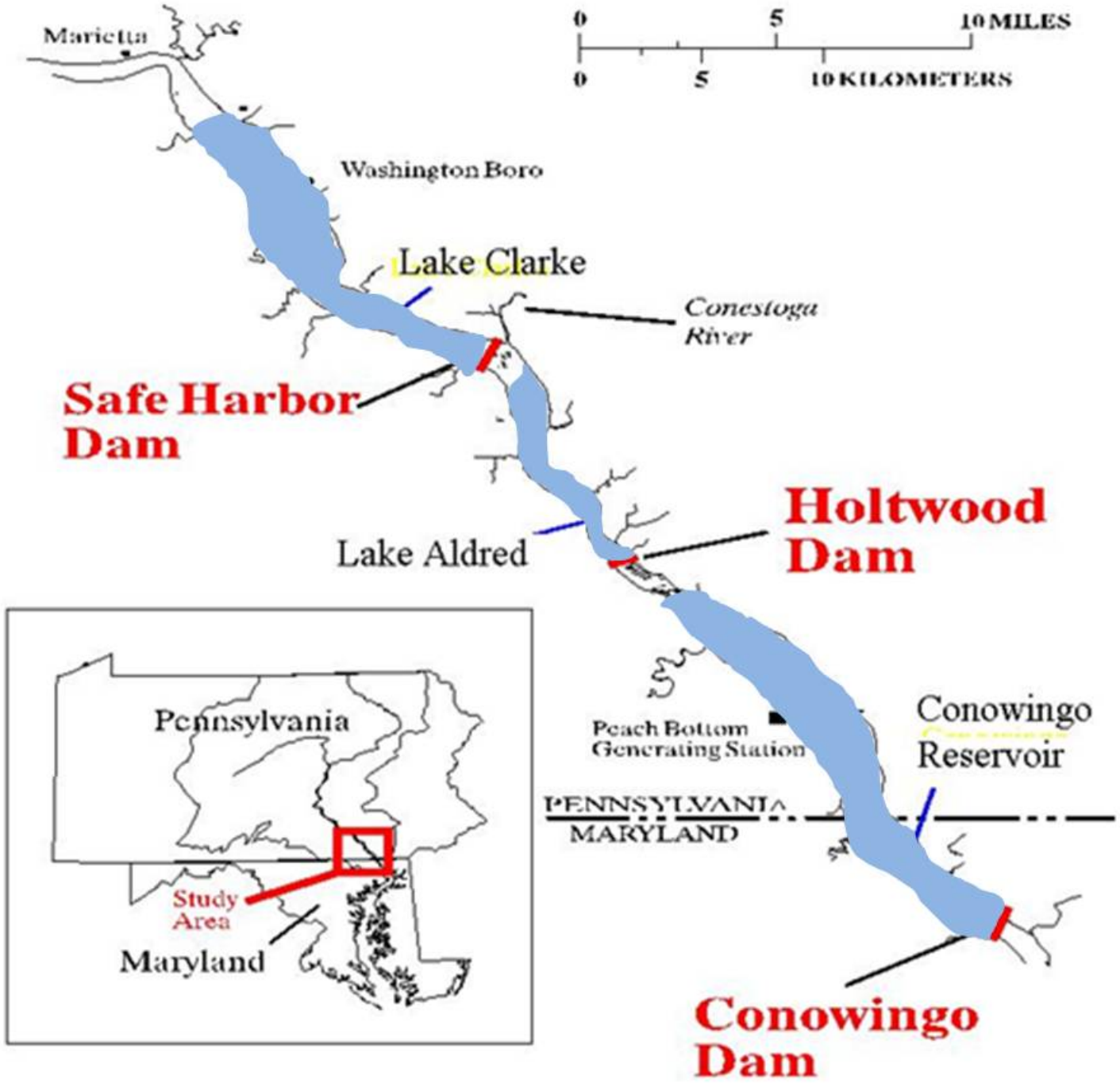
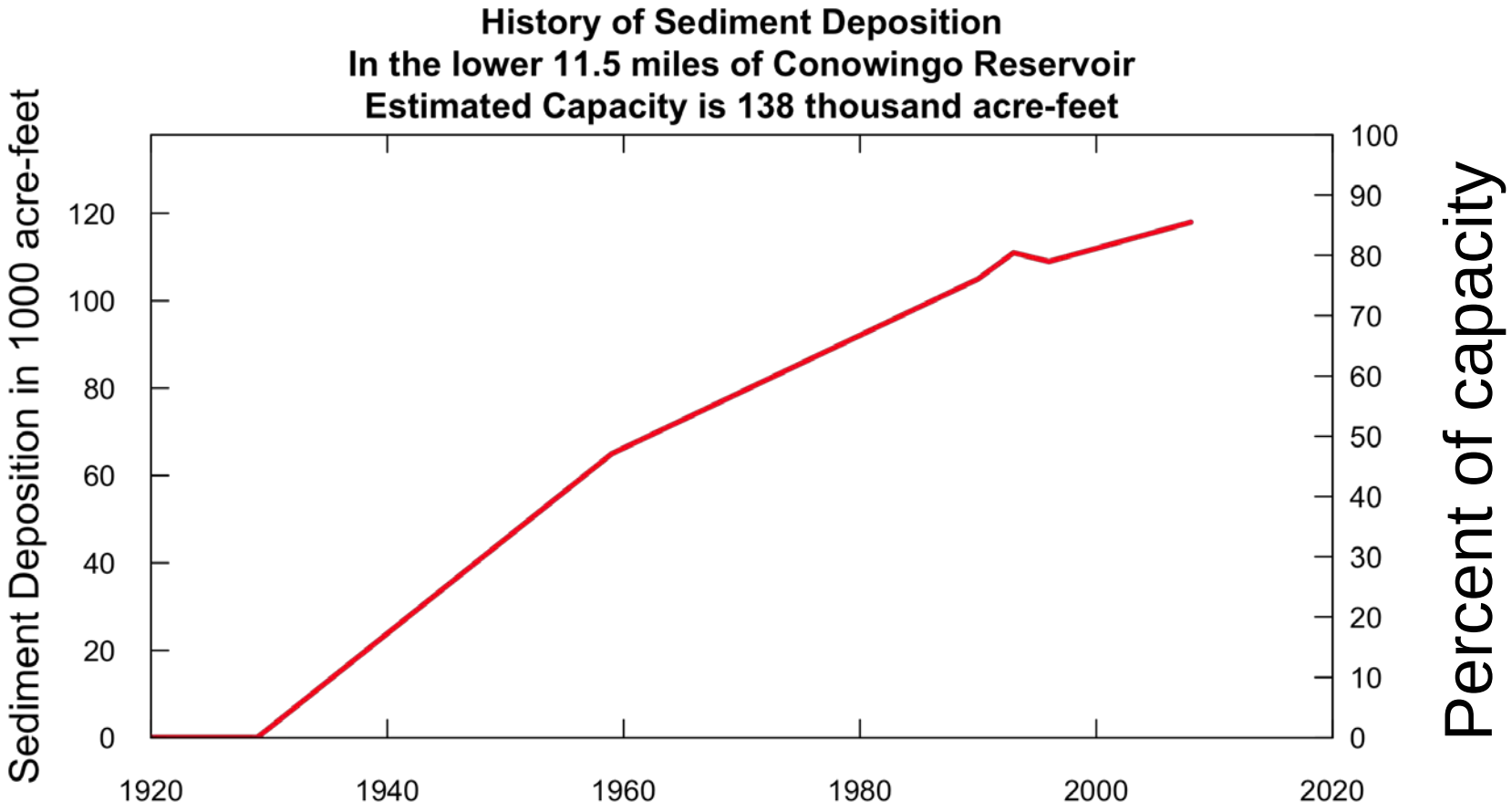

Marietta
0 5 10 MILES
0 5 10 KILOMETERS
Washington Boro
Lake Clarke
Conestoga River
Safe Harbor Dam
Holtwood Dam
Lake Aldred
Pennsylvania
Study Area
Maryland
Peach Bottom Generating Station
Conowingo Reservoir
PENNSYLVANIA
MARYLAND
Conowingo Dam

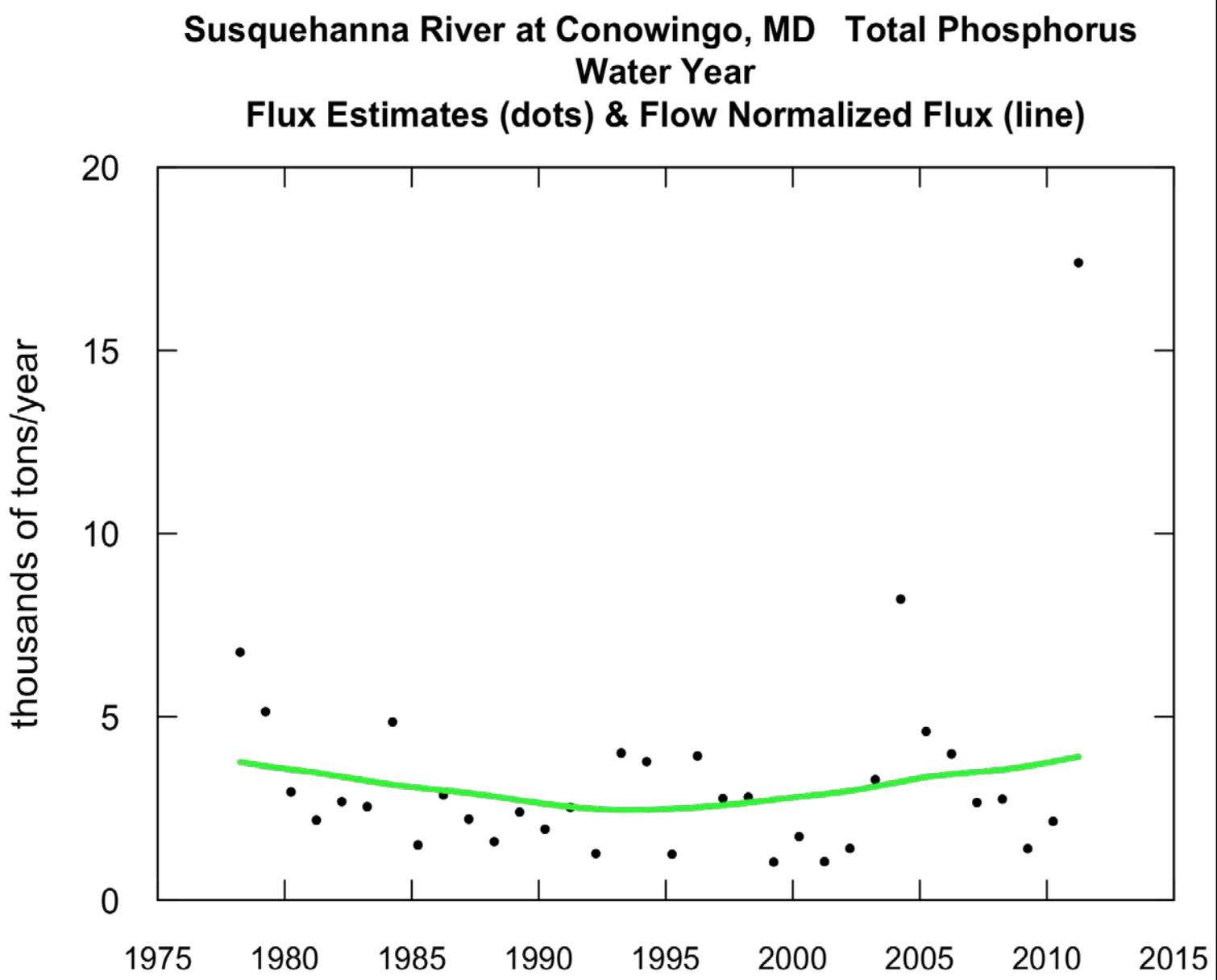


Source: Langland, 2009, USGS
http://pubs.usgs.gov/sir/2009/5110/

Annual Load of Phosphorus

(In 10^3 tons/yr)

Flow Normalized Load Up 55% Since 1996



Susquehanna loads to the Bay

	Change since 1996	Predicted change when reservoirs "filled"
TN	-3%	+2%
TP	+55%	+70%
SS	+97%	+250%

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Implications:

- As the reservoirs fill:
  - This leads to more frequent scour of sediment/TP
  - Less trapping of sediment and TP
- Increase in sediment and phosphorous loads
  - Nitrogen less effected
- Upstream practices to reduce P and sediment may be counter balanced by reservoir effects
- More difficult to achieve standards in upper Bay
  - Water clarity most impacted; less for DO

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Management Opportunities and Next Steps

- USACE-partner study on watershed options
- FERC relicensing
- 2017 Mid-Point Assessment of TMDL
- Upcoming USGS report on load trends
- More information on report: chesapeake.usgs.gov

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