

# Smallmouth Bass Y-O-Y and Adult Trends in Pennsylvania Rivers

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and

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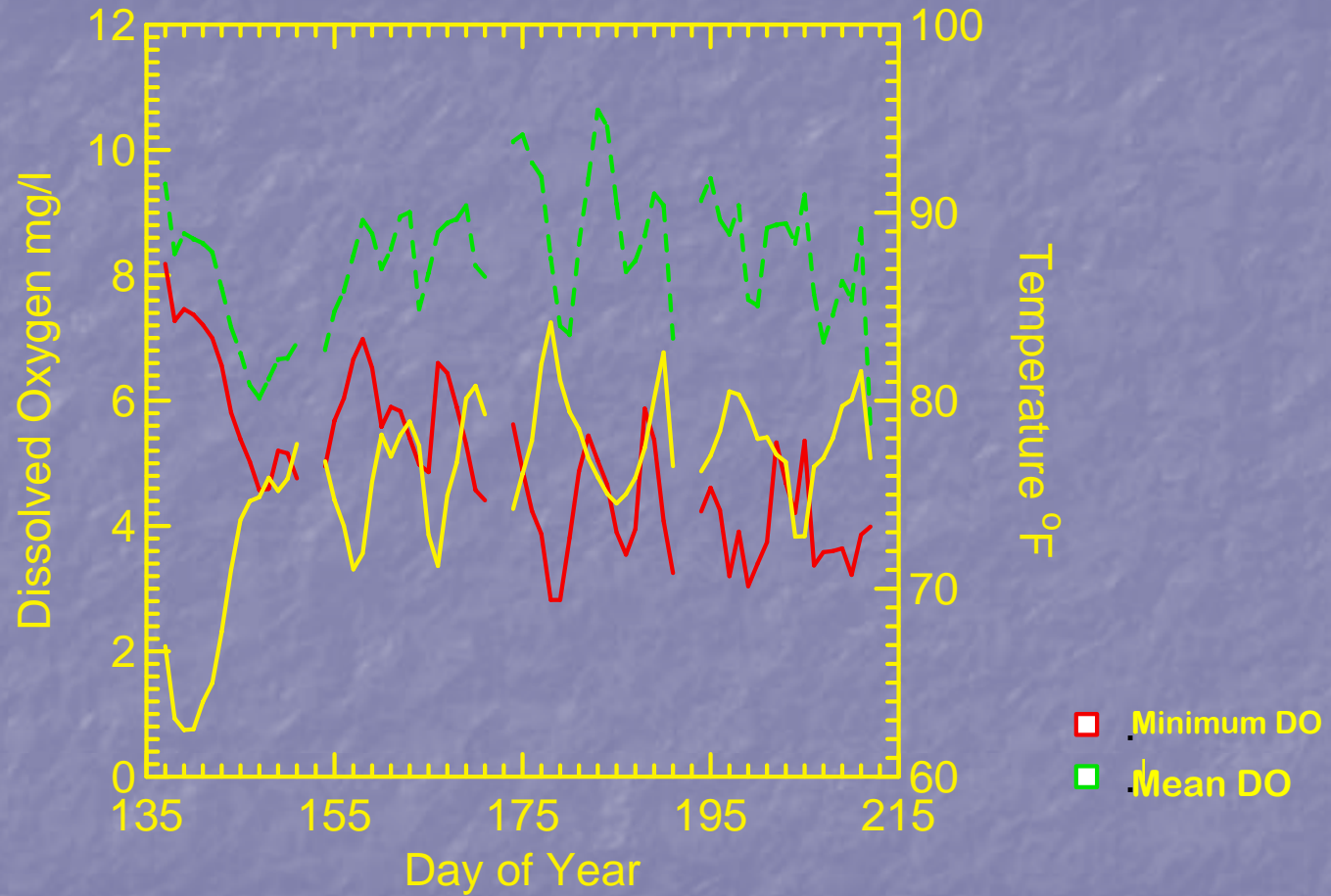


# Today

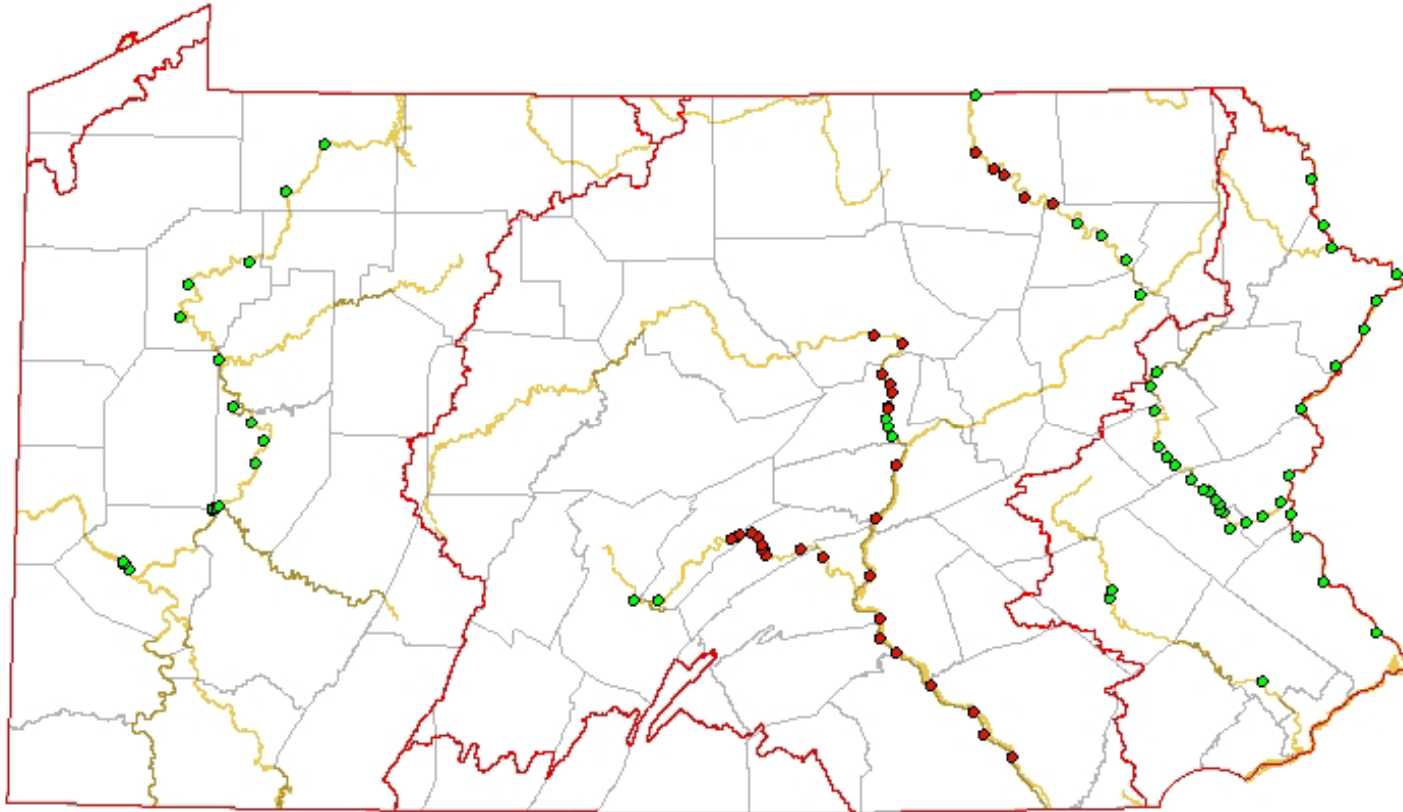
- Juniata River water quality (24hr)
- Smallmouth bass young-of-year (YOY) density
  - Field observable disease/anomalies
- Smallmouth bass density (selected ages)
- Density changes in young fish other than SMB
- Creel survey / Exploitation
- Tasks before us



# Juniata River DO Temperature

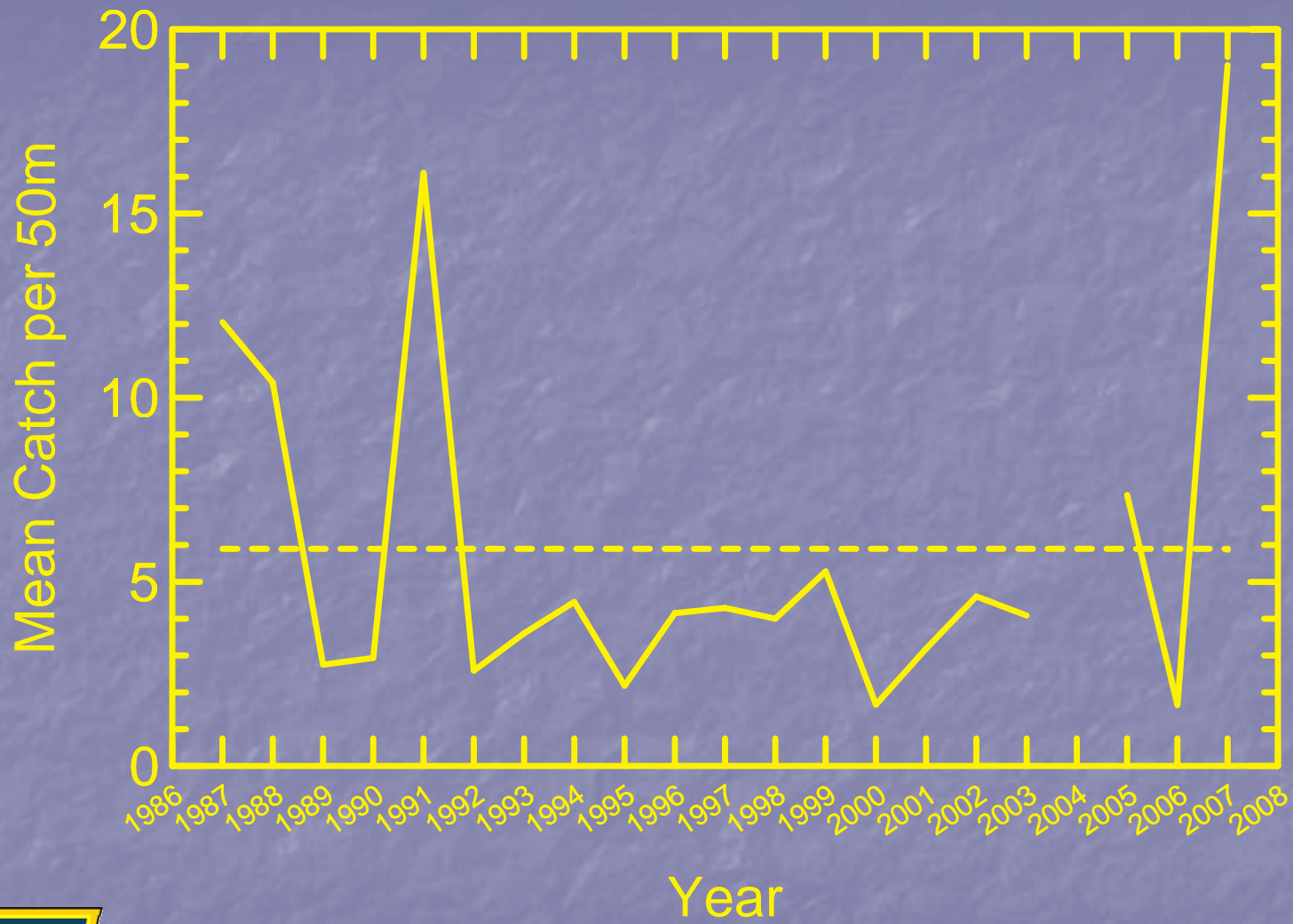


# Young of Year Sample Locations

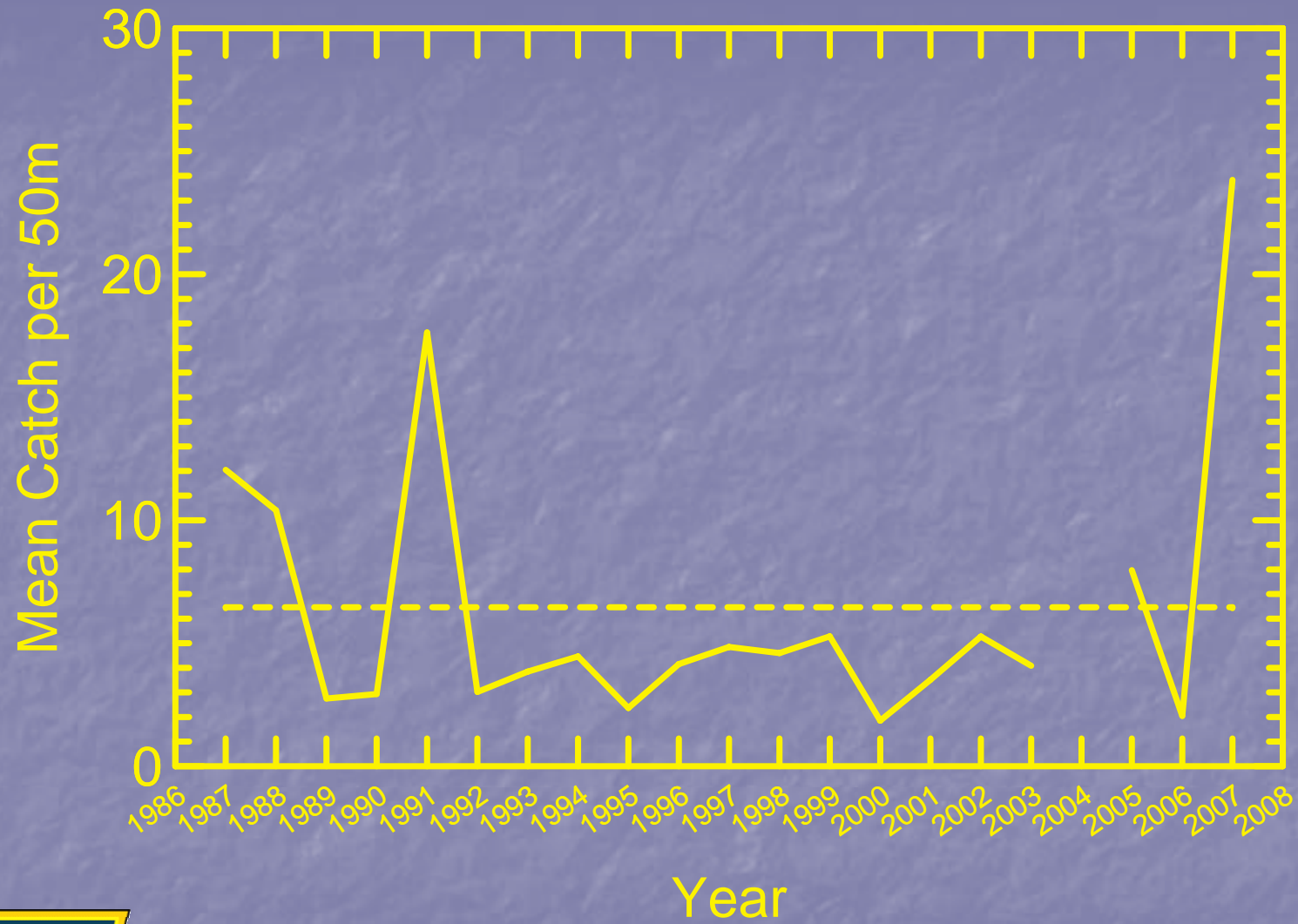


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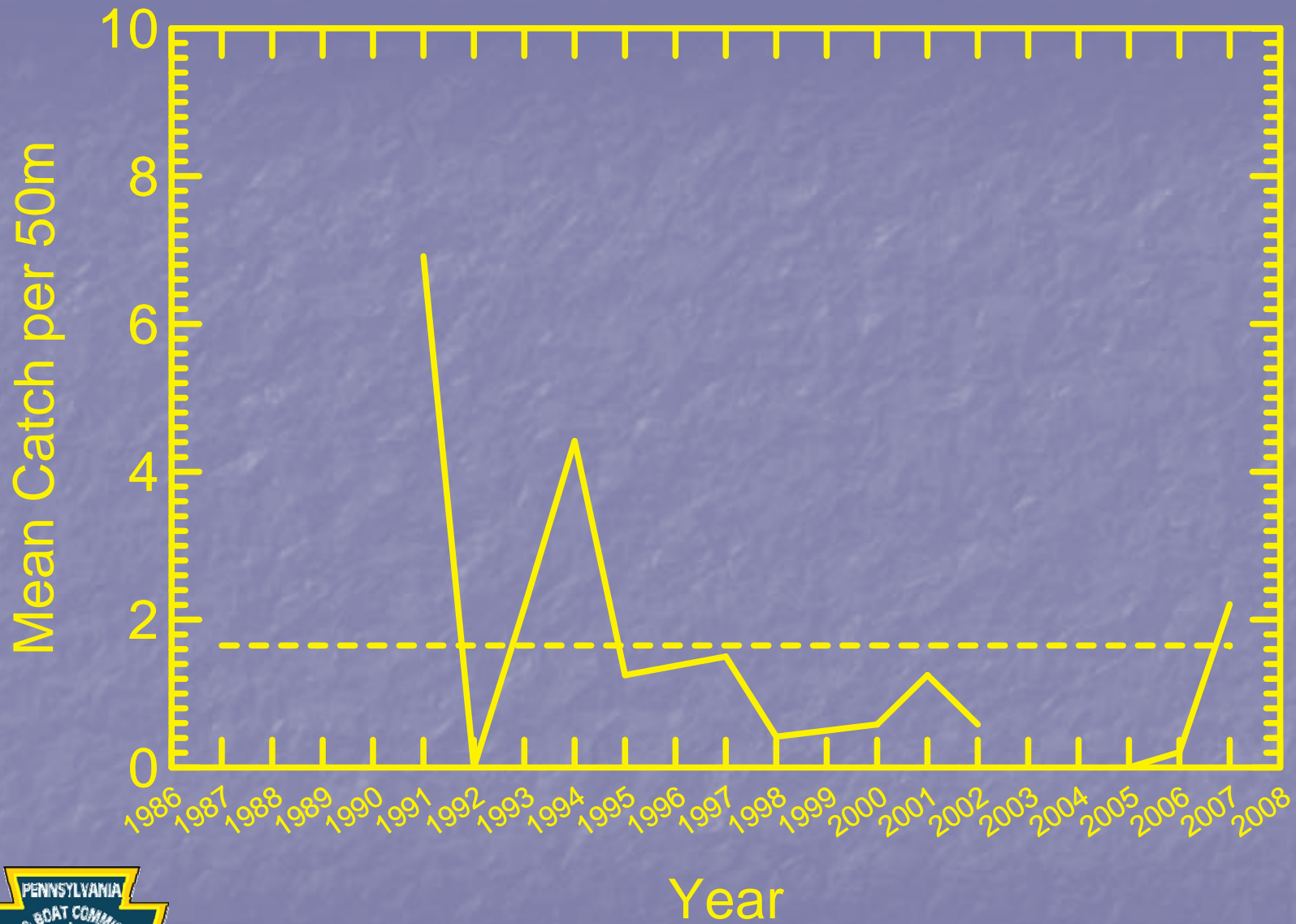
# Ohio Basin (Y-0-Y)



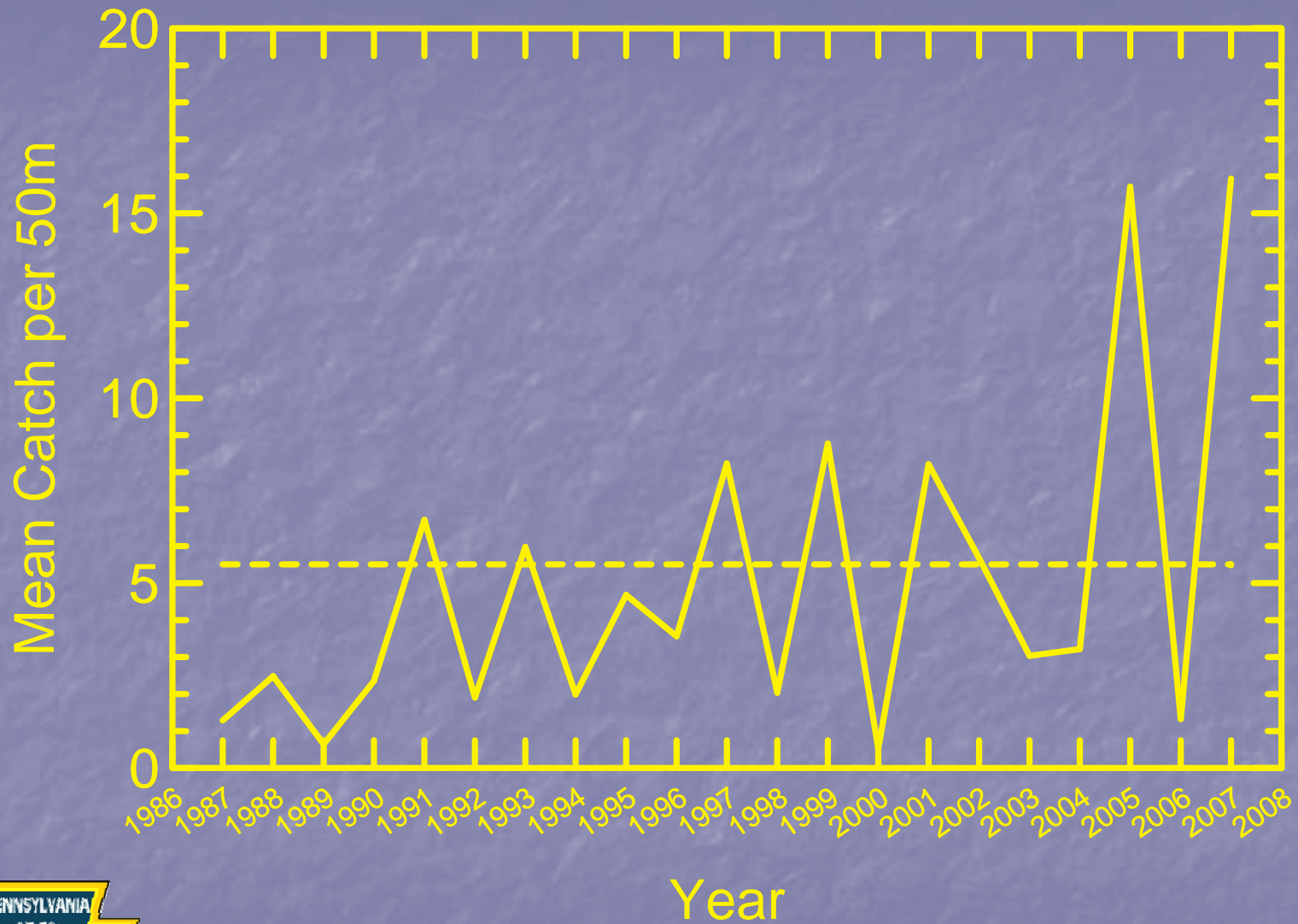
# Allegheny River (Y-0-Y)



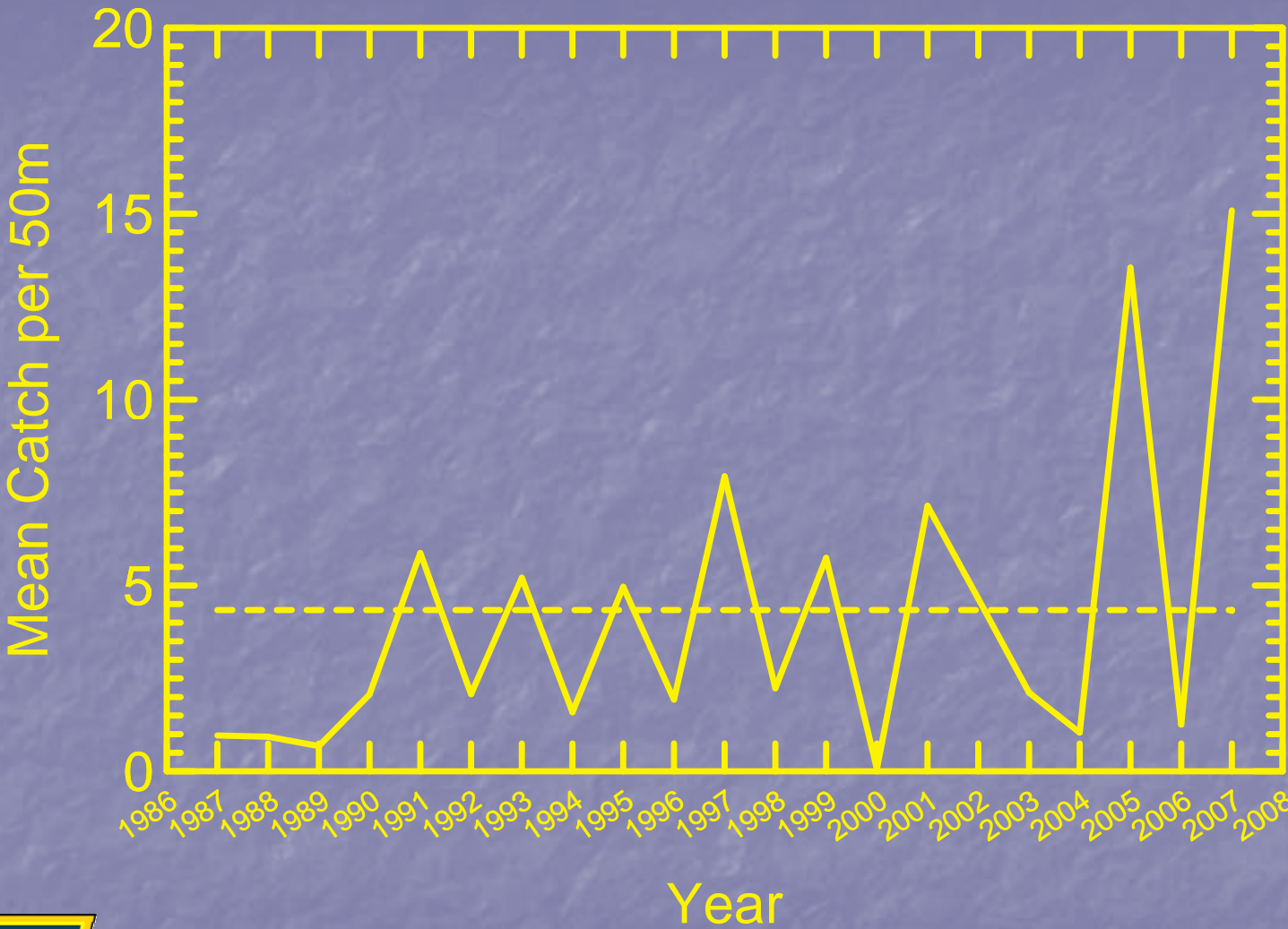
# Ohio River (Y-0-Y)



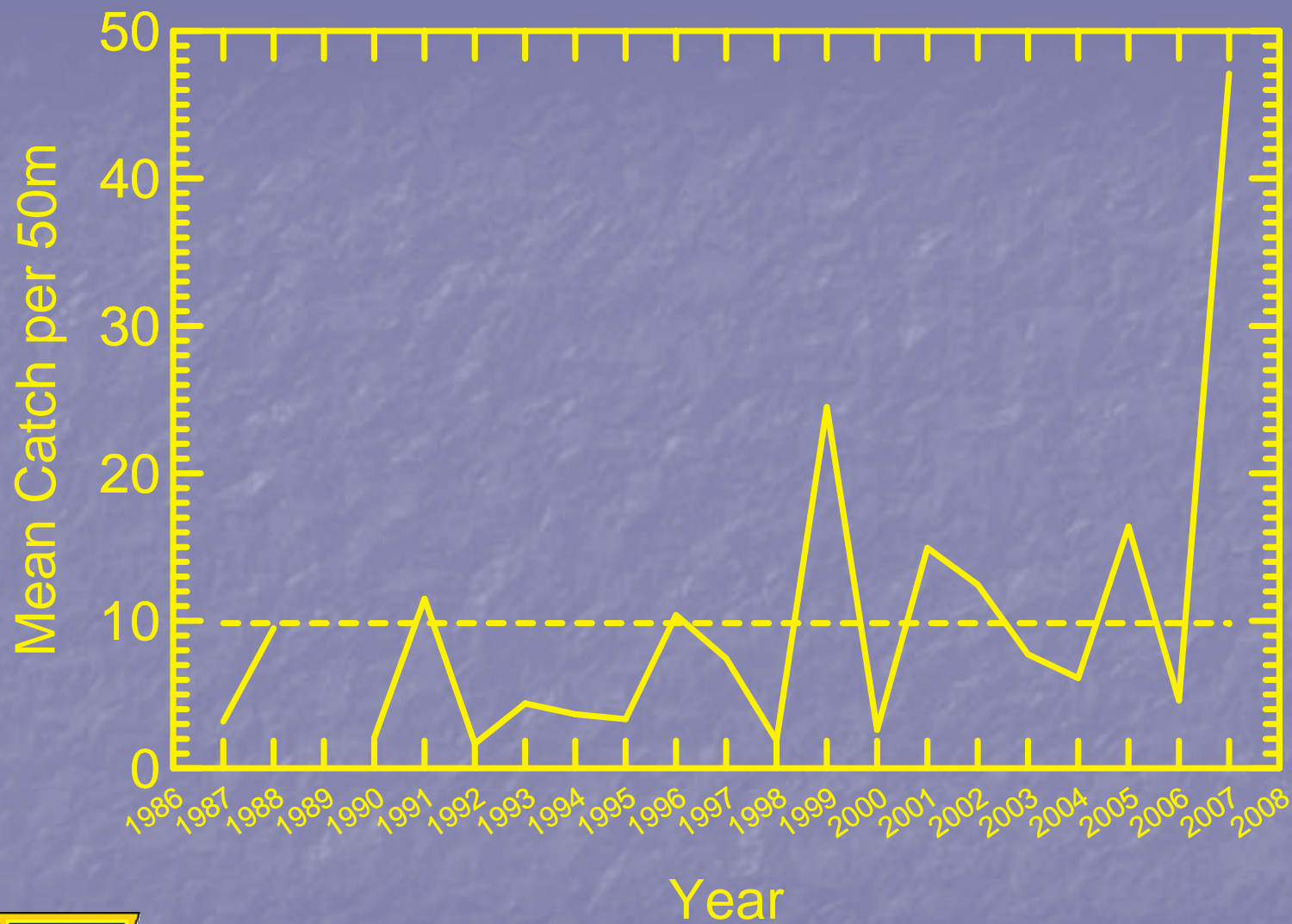
# Delaware Basin (Y-0-Y)



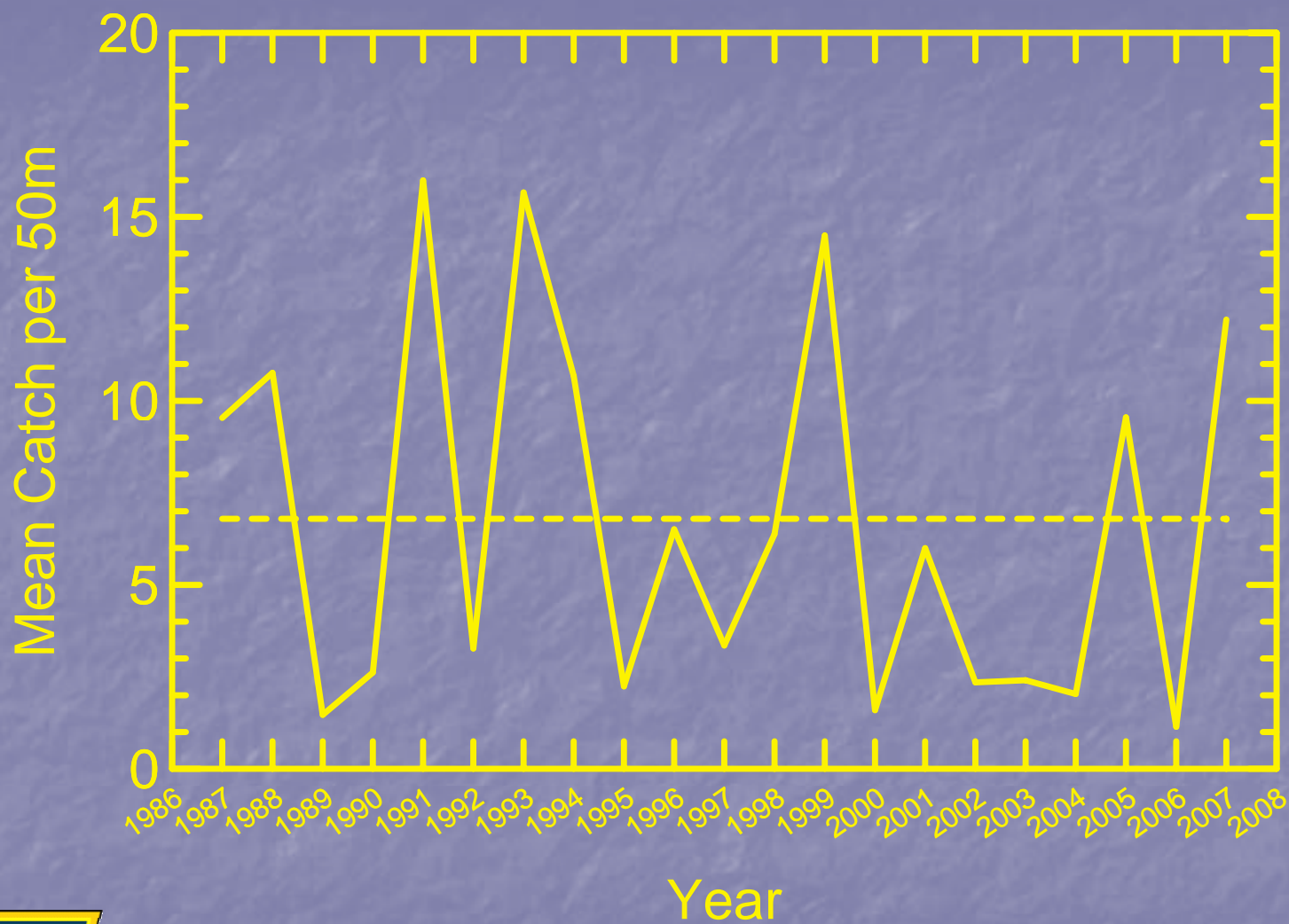
# Delaware River (Y-0-Y)



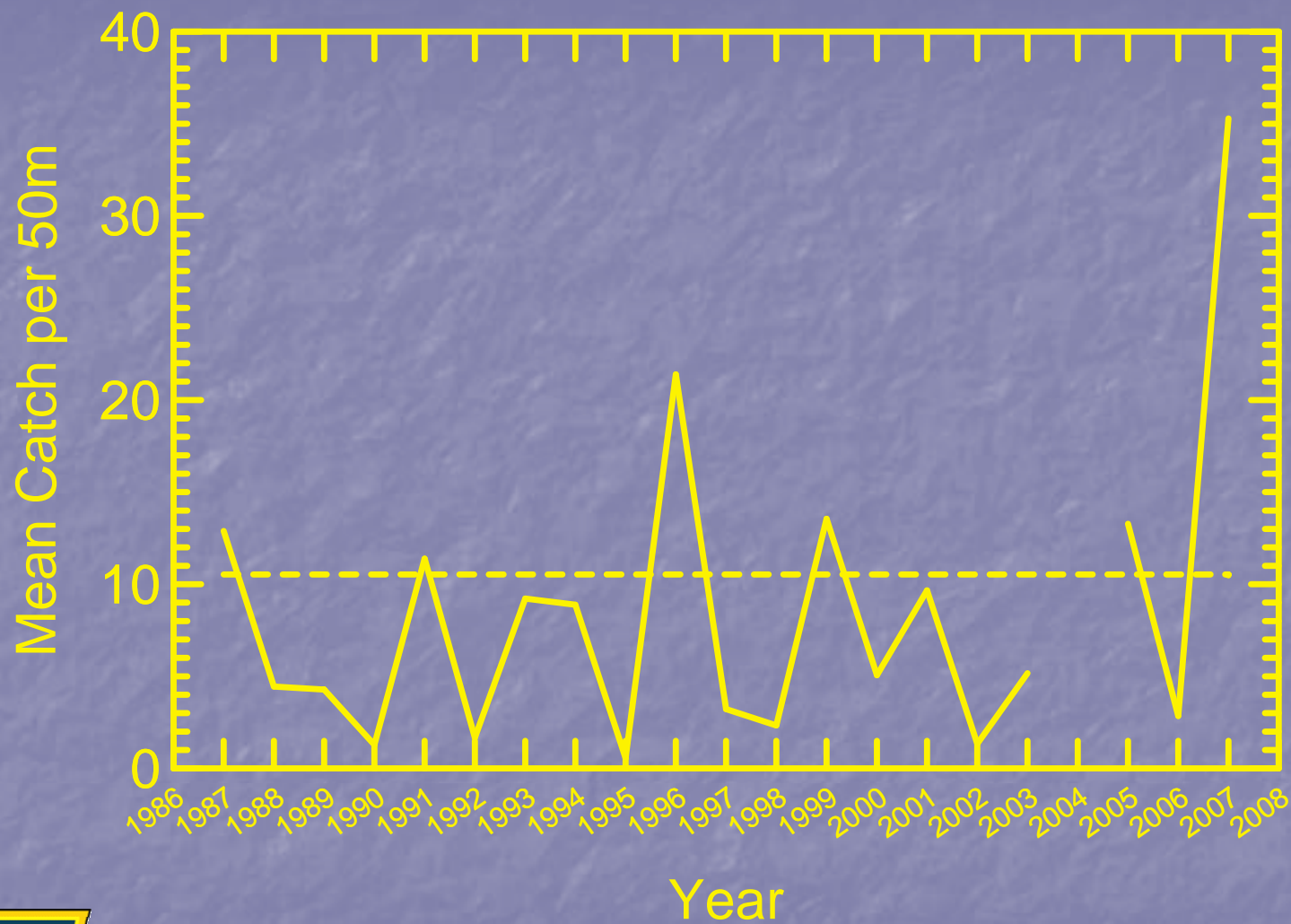
# Schuylkill River (Y-0-Y)



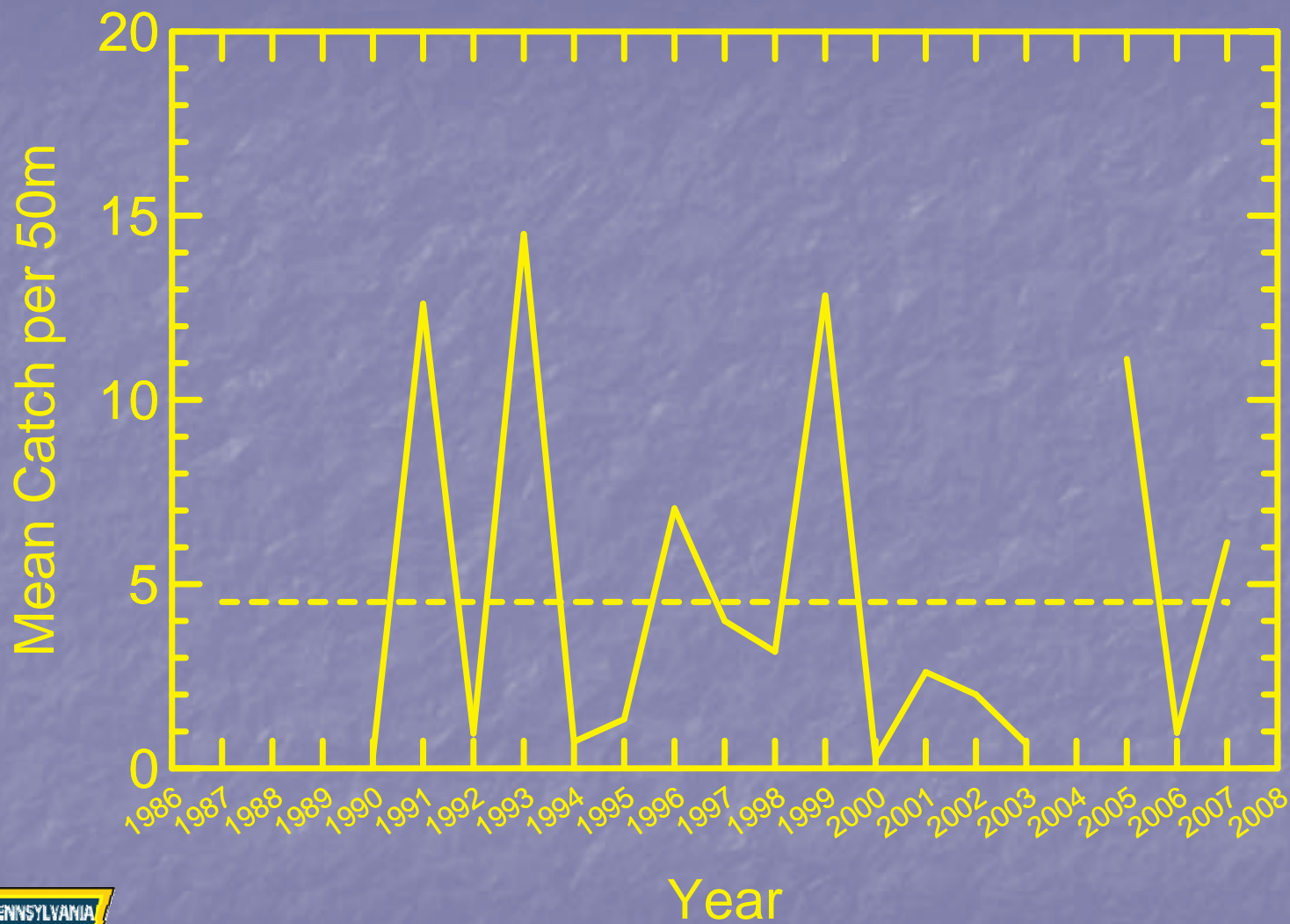
# Susquehanna Basin (Y-0-Y)



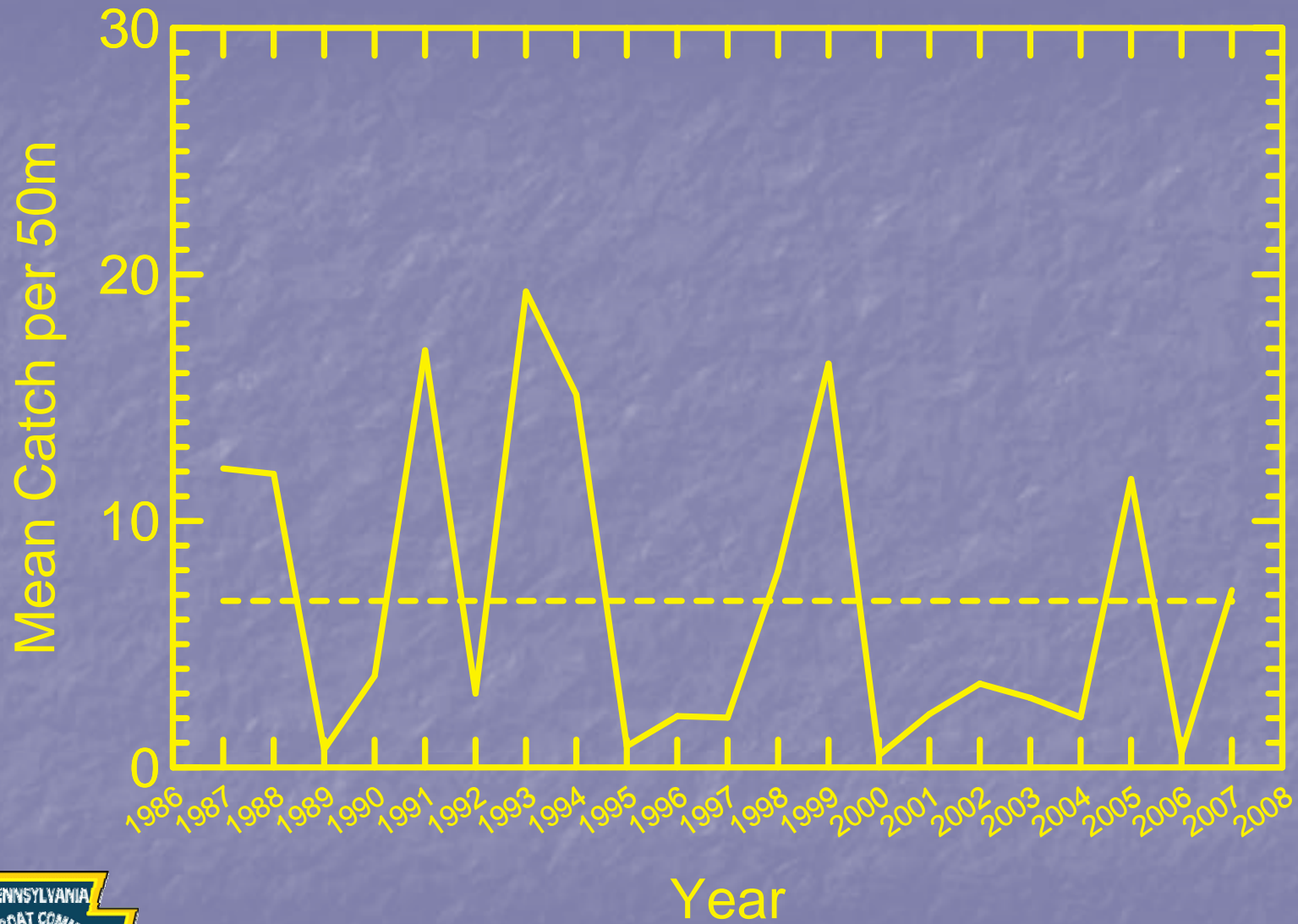
# North Br Susquehanna River (Y-0-Y)



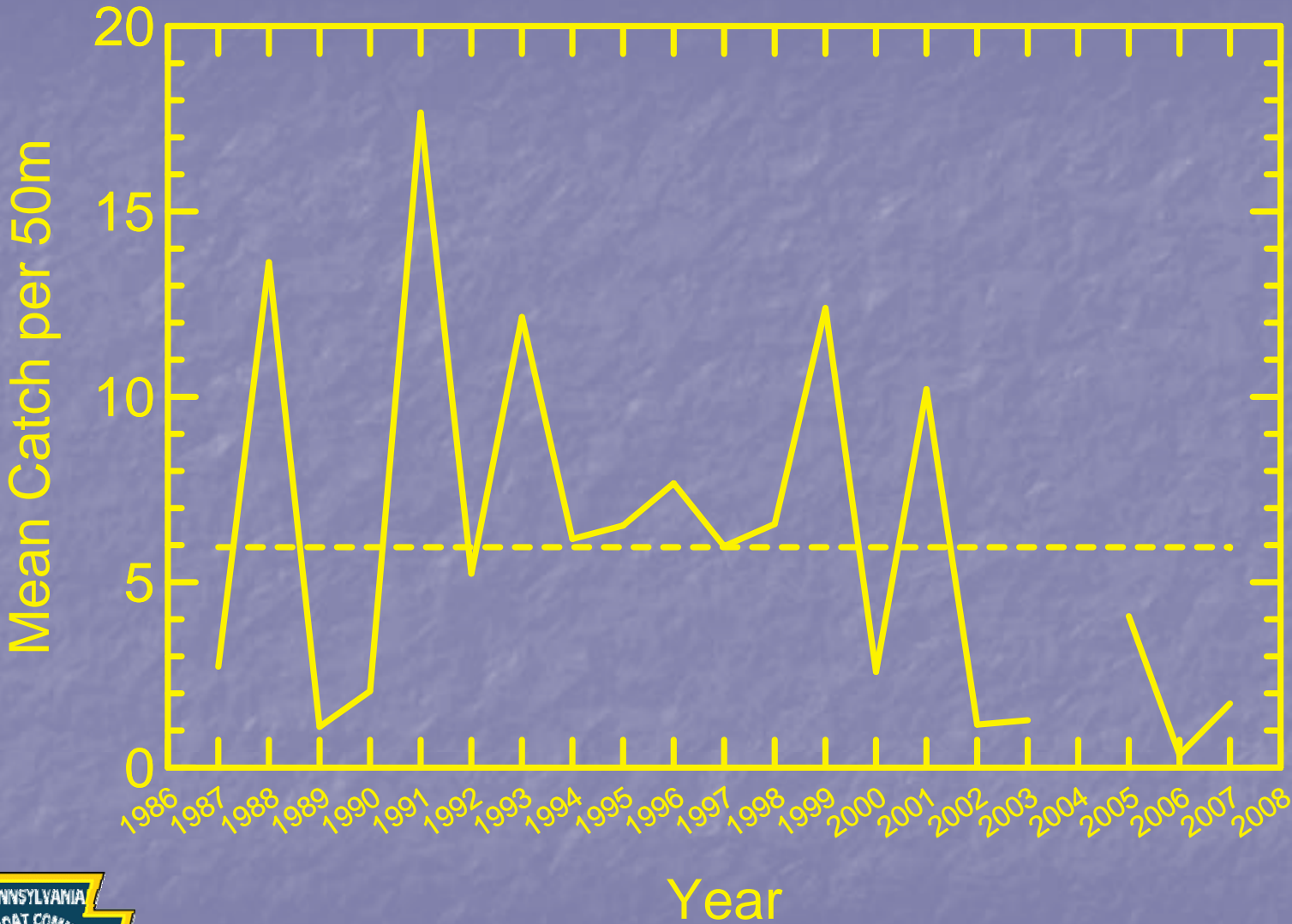
# West Br Susquehanna River (Y-0-Y)



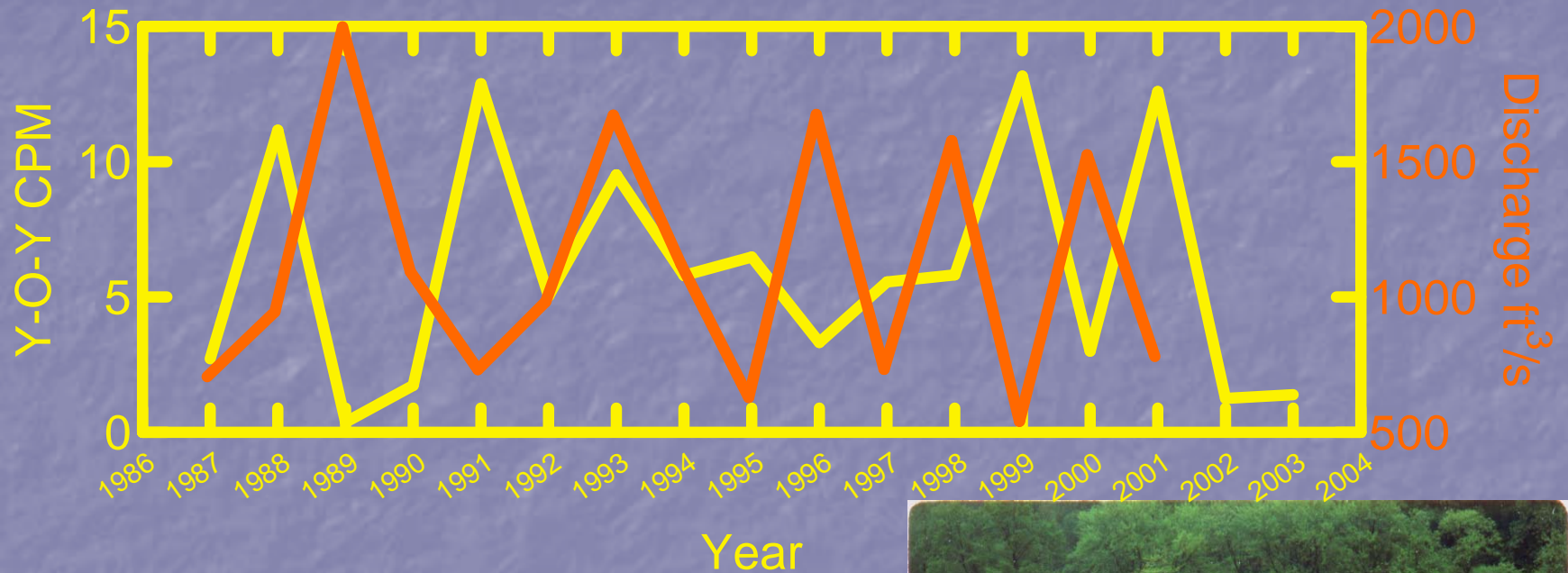
# Juniata River (Y-0-Y)



# Susquehanna River (Y-0-Y)

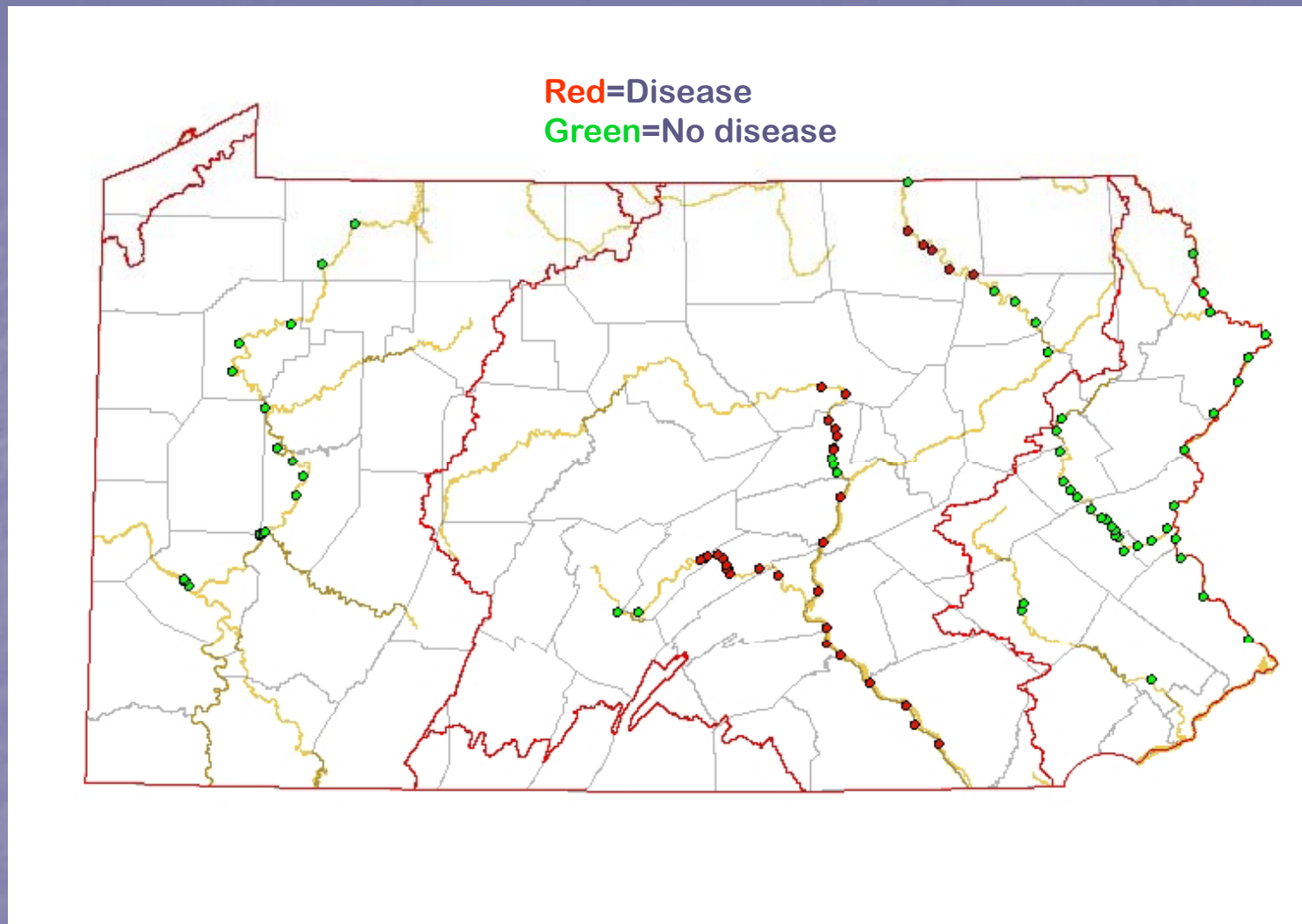


# Y-O-Y Index & River Discharge



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# Young of Year Sample Characteristics



## Smallmouth Bass NEF Catch per hour $\geq$ Age 3

Basin	1990	1991	1992	1993	1994	1995	1996	REF MEAN	2005	2006
Delaware	2.39	2.18	1.03	2.12	3.25	3.01	2.49	2.35	1.64	4.35
Ohio	24.83	9.60	5.59	0.98	2.38	3.01	4.52	7.27	2.94	2.14
Susquehanna	8.90	11.00	10.38	6.34	7.66	4.19	5.42	7.70	2.56	3.29



## Smallmouth Bass NEF Catch per hour $\geq$ Age 5

Basin	1990	1991	1992	1993	1994	1995	1996	REF MEAN	2005	2006
Delaware	0.73	0.73	0.61	0.96	0.54	0.95	0.44	0.71	0.72	1.83
Ohio	1.82	0.37	2.18	1.10	0.21	0.70	2.11	1.21	1.12	1.85
Susquehanna	3.33	2.68	5.25	2.80	1.74	1.67	1.71	2.74	2.03	2.78



## Smallmouth Bass NEF Catch per hour $\geq$ Age 3

Water	1990	1991	1992	1993	1994	1995	1996	REF MEAN	2005	2006
Sus N Br R	12.24	10.28	14.80	5.44	11.29	4.79	7.69	9.51	3.58	0.59
Sus W Br R		0.83	2.69	1.91	2.49	1.15	4.63	2.28	1.82	1.67
Juniata R	5.11	16.08	4.75	4.64	9.76	5.66	6.80	7.54	3.63	3.84
Sus R	11.39	12.34	13.93	9.24	8.25	4.66	2.84	8.95	1.72	4.33

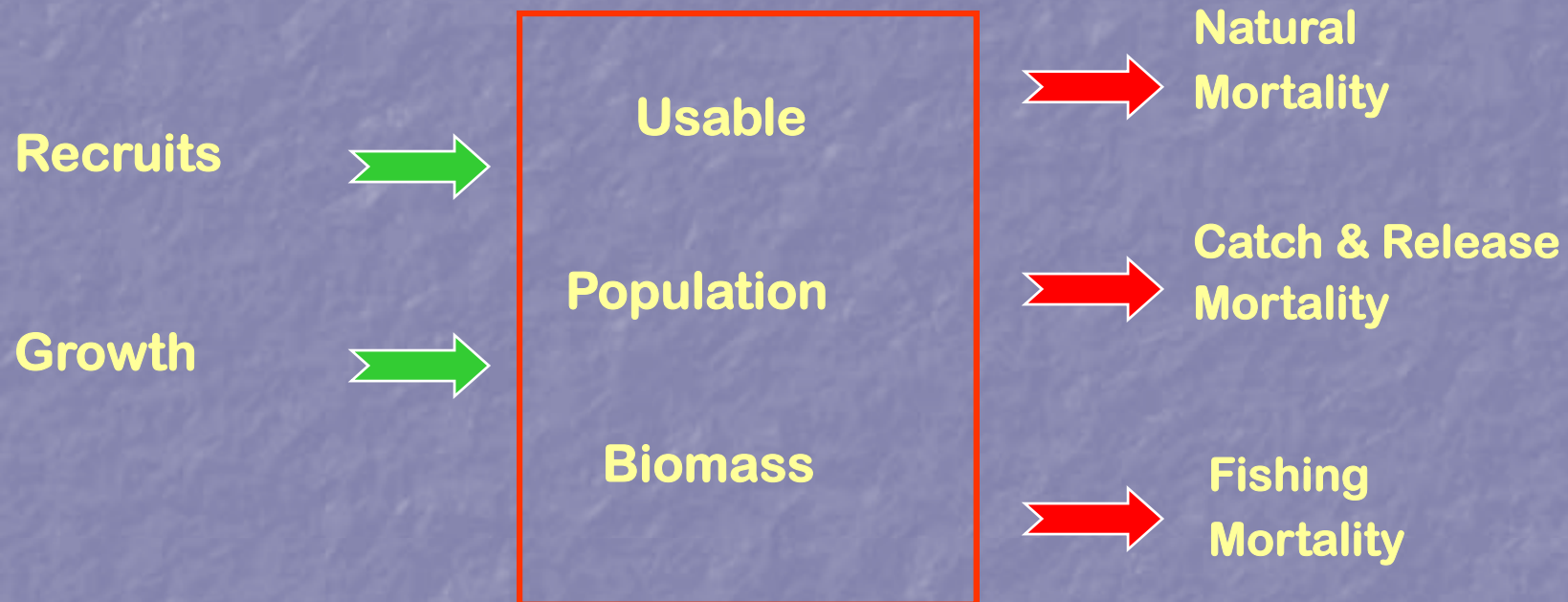


## Smallmouth Bass NEF Catch per hour $\geq$ Age 5

Water	1990	1991	1992	1993	1994	1995	1996	REF MEAN	2005	2006
Sus N Br R		1.41	0.65	1.26	2.34	1.80	0.77	1.37	2.83	0.82
Sus W Br R		0.00	0.88	1.74	0.69	0.60	2.33	1.04	1.52	1.25
Juniata R	1.01	0.99	1.96	2.53	1.52	0.86	2.03	1.56	2.54	1.99
Sus R	6.41	3.71	8.63	3.73	2.97	2.58	0.76	4.11	1.60	4.22



# Fish Population Change



# Walleye Trends

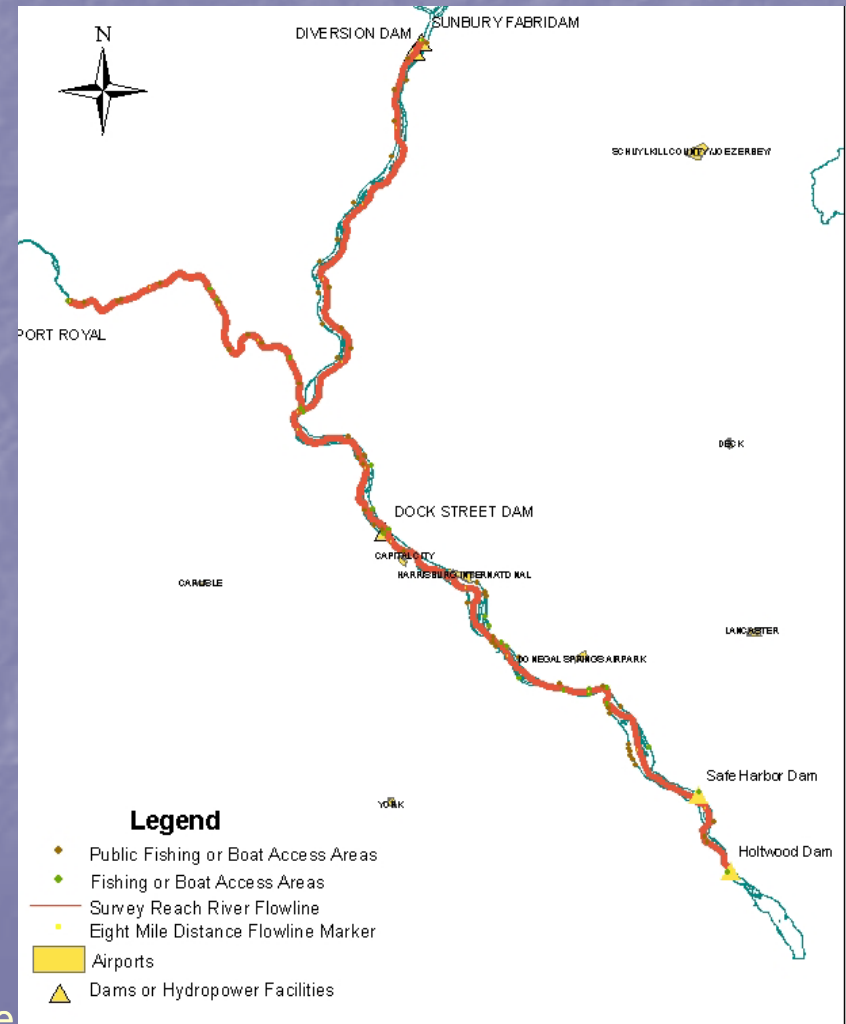
Water	Walleye	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Sus N Br R	YOY	179.9	14.0	60.5	6.0	201.5	0.5	66.3	3.4	18.9	39.0	130.1	10.6
Sus R	YOY	5.1	11.5	28.4	3.6	49.3	9.0	26.0	...	...	...	62.4	4.8



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# Susquehanna R/ Lower Juniata R Creel Survey Objectives April-Oct 2007

- Estimate angler effort, catch, harvest, catch rate, harvest rate and angler satisfaction associated with fishing (PSU-SCC).
- Estimate economic impact and economic contribution associated with river sport fishing (CSU).
- Estimate smallmouth bass exploitation trial (PSU-Coop).



# Creel Statistics

- **Roving-Instantaneous Count Design**
  - Anglers interviewed at access areas and other locales where catch, harvest and fishing time is enumerated.
  - Anglers and boats counted from airplane to estimate angler effort.



# Economic Analysis

- Angler expenditures associated with lodging and travel will be tallied from interviews and coupled with angler trip estimates to estimate:
  - Economic impact
  - Economic contribution



# Provisional Survey Data through Early August (12<sup>th</sup>)

- Flights: 49
- Interviews (angler trips) : 2,794
- Raw Catch (Harvest):
  - Smallmouth Bass...4,696 (49)
  - Channel Catfish.....1,035 (225)
  - Walleye..... 389 (36)



## Angler Rank of 2007 SMB Fishing

Rank	Percent
Excellent	6
Very Good	10
Good	19
Fair	18
Poor	17
No Opinion	30



## Smallmouth Bass Exploitation

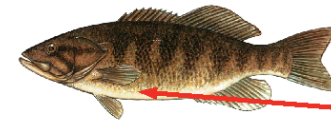
- Week of 5/21/07: 399 SMB tagged between Dock St Dam (Harrisburg) and York Haven Dam (Goldsboro)
- As of 9/4/07: nine (9) SMB have been reported as caught and one (1) found dead (10 reports total).
- Of those anglers catching tagged SMB; in follow-up telecons seven 7 anglers were contacted; all indicated that tagged SMB were released.



# REPORT TAGGED FISH

**TOLL FREE 1-877-778-3637**

The Pennsylvania Fish & Boat Commission and the Pennsylvania Cooperative Fish and Wildlife Research Unit of Penn State University are conducting a study of smallmouth bass survival on the Susquehanna River. Some smallmouth bass are marked with tags that look like a piece of plastic spaghetti trailing the pectoral fin.



### HOW TO CLIP TAG FOR CATCH-AND-RELEASE BASS

On two-part tags, clip the tag where indicated below:



On one-part tags, clip the tag near the fish's body:



### HOW TO REMOVE TAG FROM HARVESTED BASS:

When fish are filleted, look for a small anchor "button" under the skin. Remove the tag before cooking and consumption.

### HOW TO REPORT TAGS:

All tagged bass kept or released may be reported by calling **TOLL FREE 1-877-778-3637** and reporting the serial number listed on the tag.



# Control SMB Y-O-Y

- Abiotic
  - Discharge
  - Environment stress
    - DO Temp WQ
- Biotic
  - Disease (LMBv)



# Actions Taken

- **Susquehanna River & Juniata River Survey**
  - Catch - Harvest
  - Economic value
- **Pilot Exploitation Study**
  - 400 SMB tagged
  - Guide Harvest Changes as necessary
- **Abundance Monitoring Continued**
- **Disease Monitoring Continued**
- **Prevention measures instituted**



# Tasks at Hand

- Use creel survey and exploitation study to evaluate need for management change.
  - Institute Harvest Changes as necessary
- Prevention measures updated





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