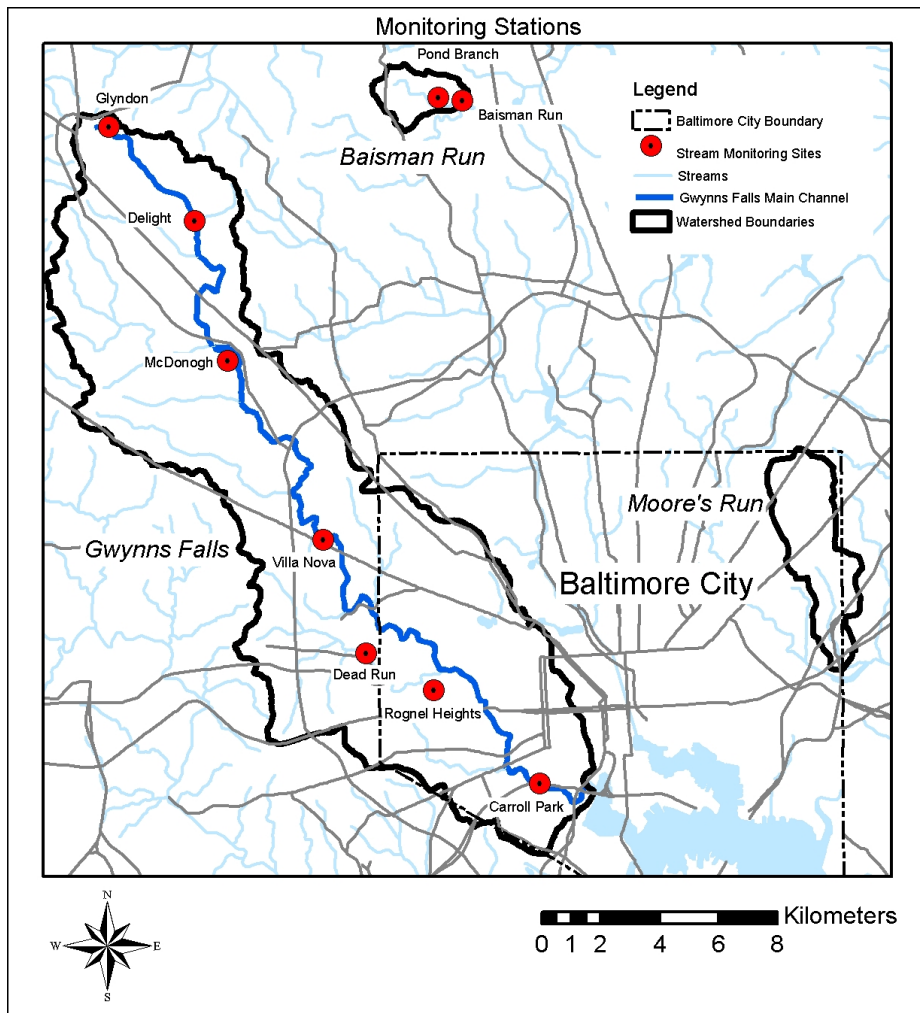

Baltimore Ecosystem Study (BES)

A SOCIAL ECOLOGICAL APPROACH TO WATERSHEDS





Sources: Mike McGuire, UMBC (above) and Guy Hager, Parks & People Foundation (right).

A dialog in urban ecology:

Morgan Grove: This is not Hubbard Brook.

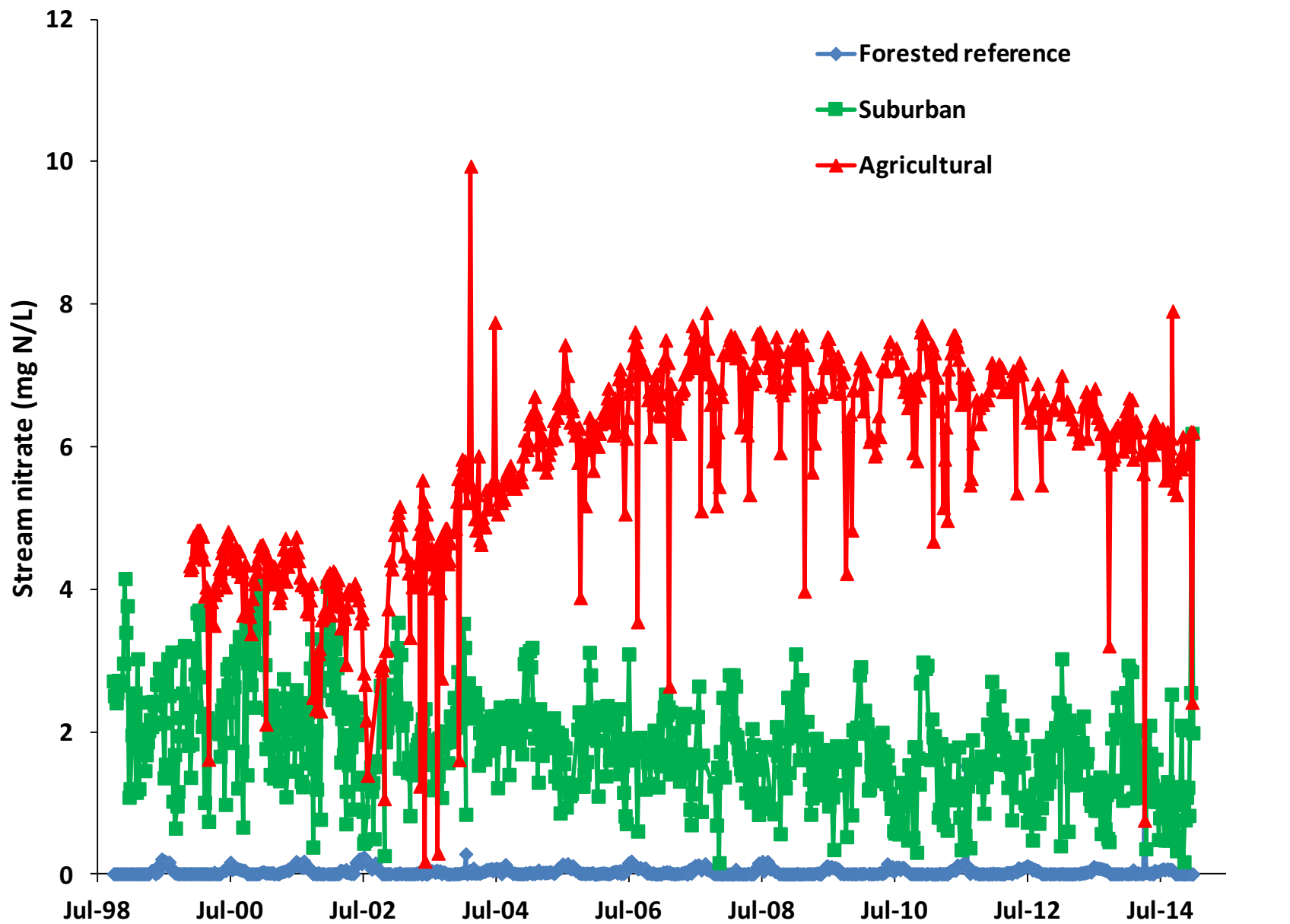
Peter Groffman: This IS Hubbard Brook.

Morgan Grove: Is not! . . .

Peter Groffman: Is too!

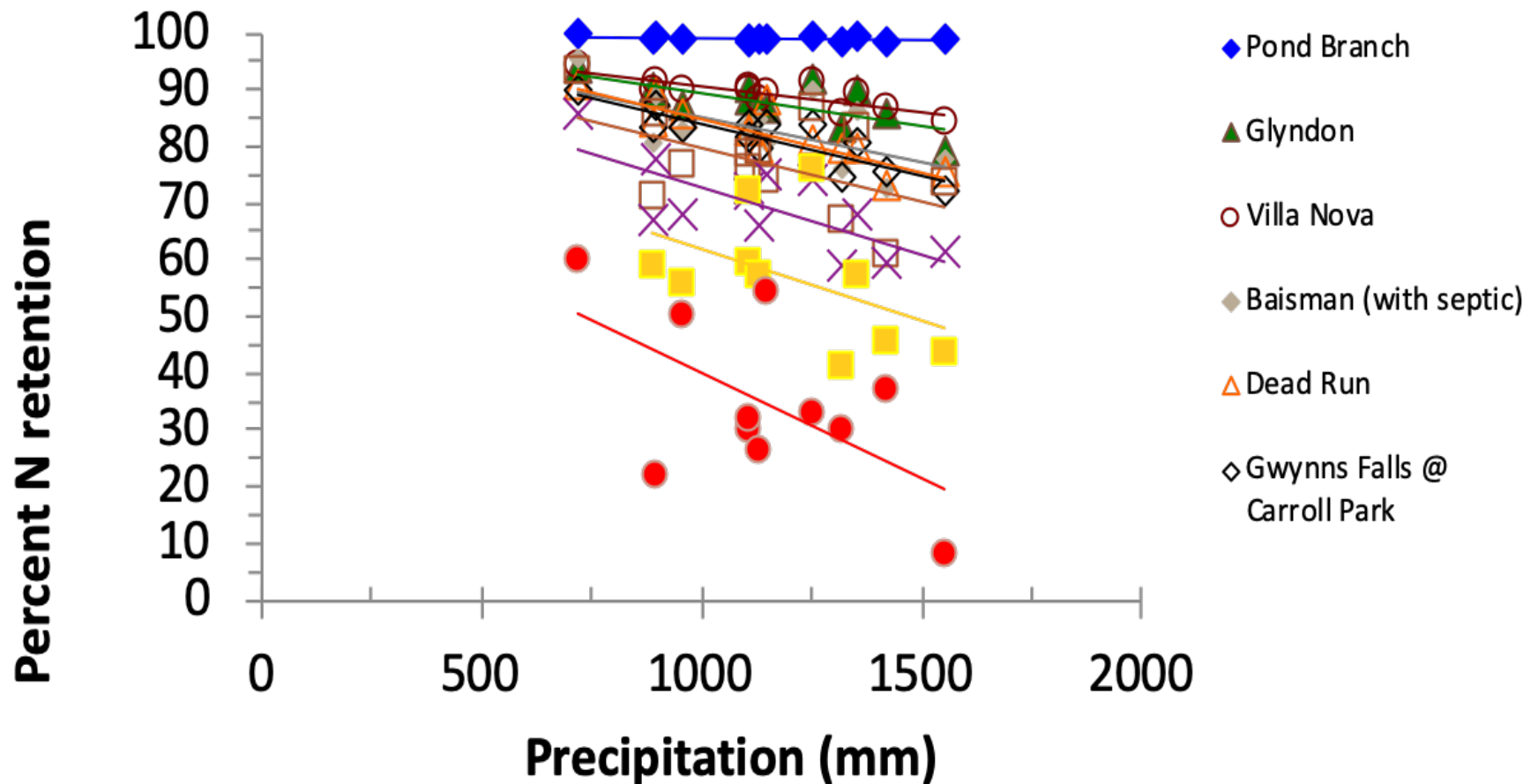
Morgan Grove: Not. . .

Peter Groffman: Too . . .



Groffman et al. (2004)

Climate, land use, nitrogen retention and total maximum daily loads (TMDL):

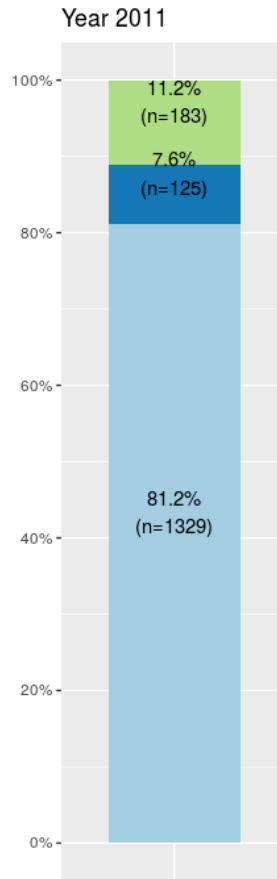


Bettez et al. (2015)

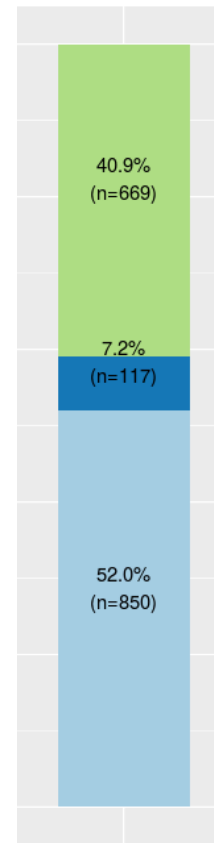
Do you live in a watershed?

Phoenix: Yes - 11.2%

Baltimore: Yes - 40.9%



CAP



BES

Yes

Don't
know

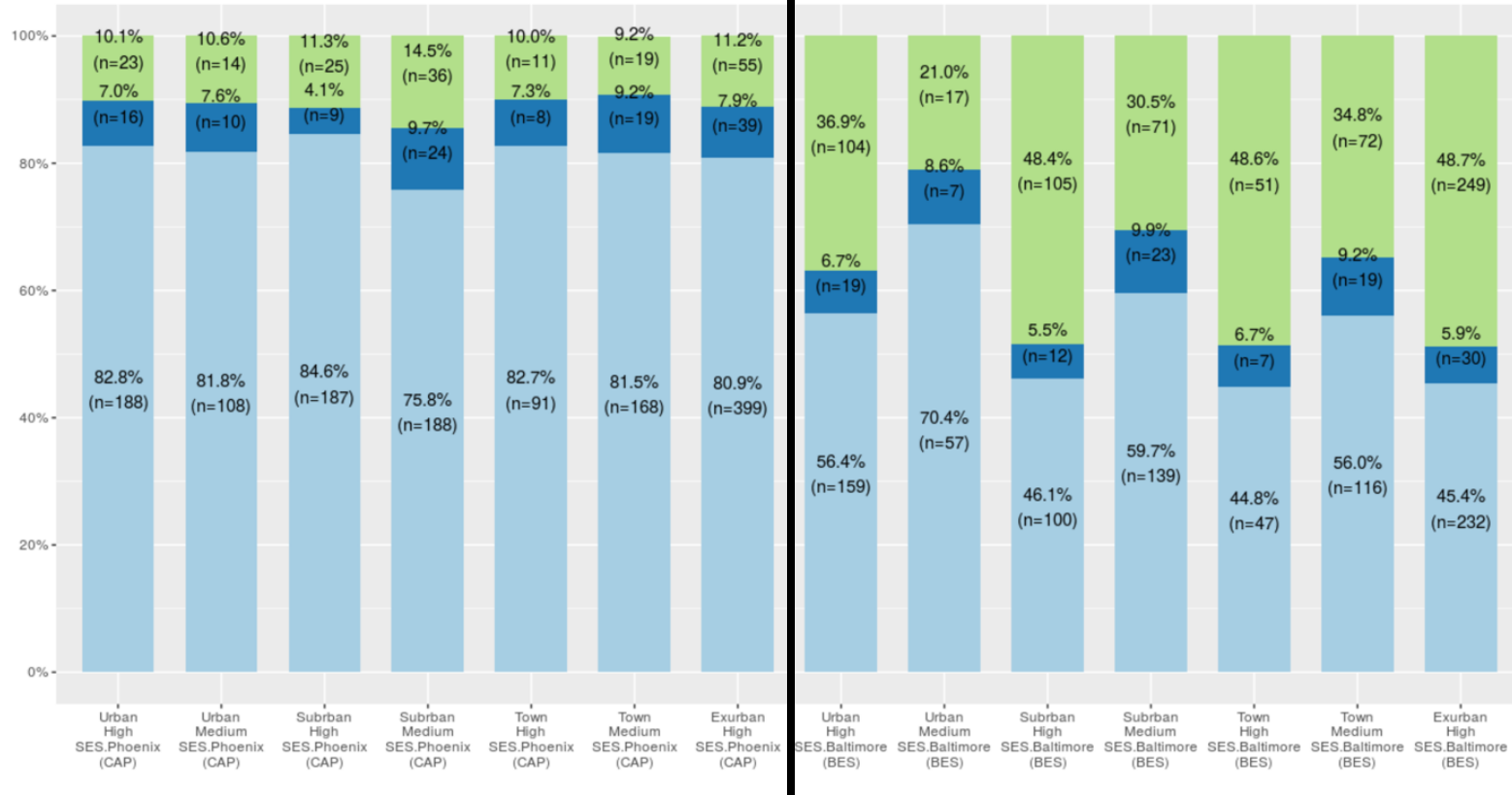
No

Now, I would like to ask you about areas called watersheds. A watershed is the drainage area to either a body of water itself or to its tributaries, such as the rivers & streams that eventually flow into it.

Do you live in a watershed?: Socioeconomic and urban-rural gradients

CAP

BES



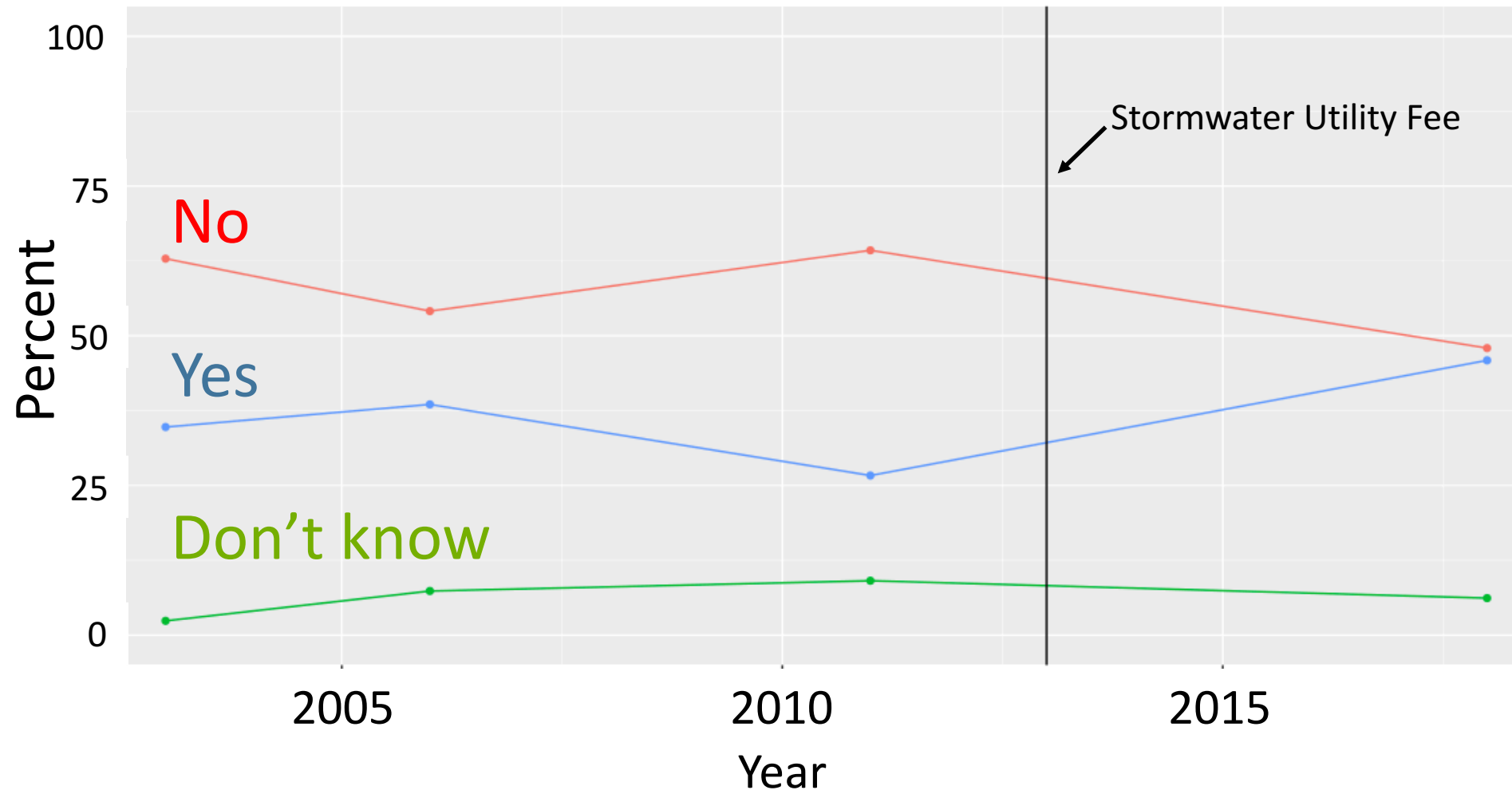
Yes

Don't know

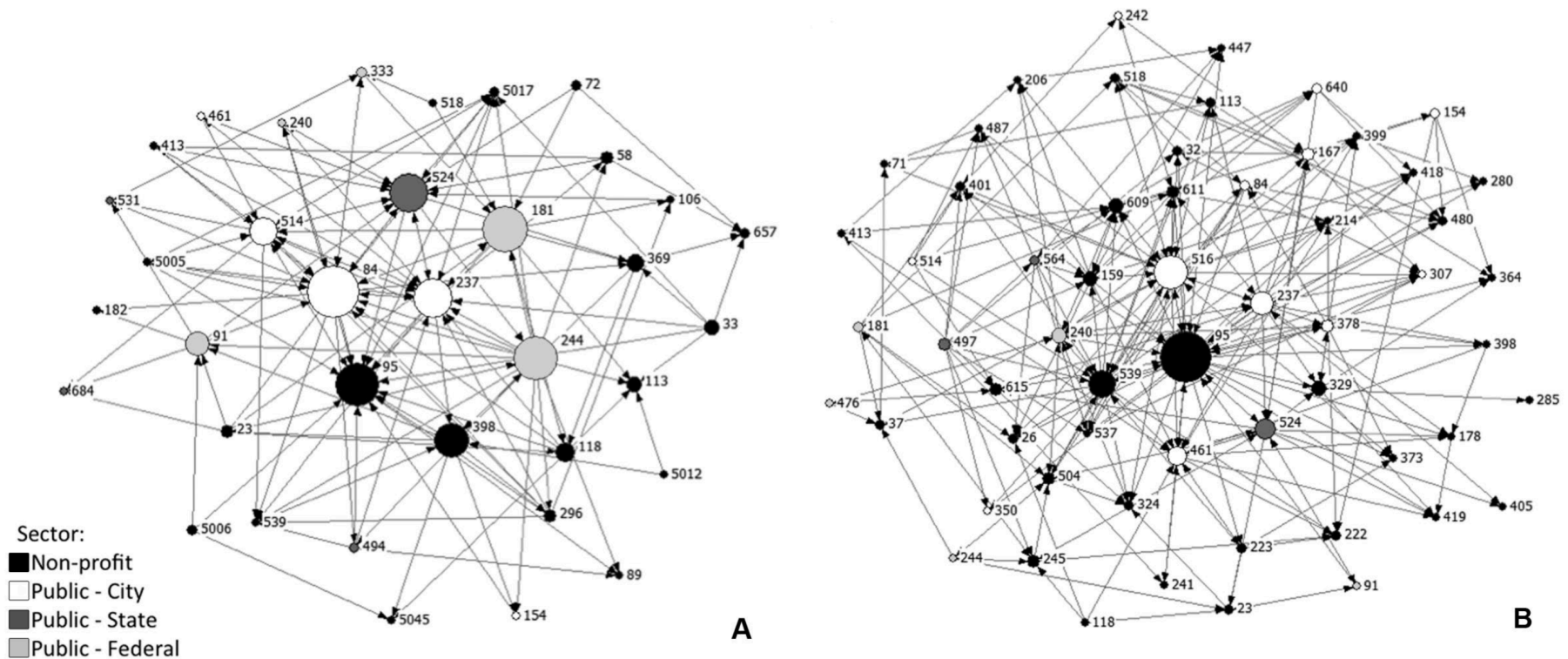
No

Baltimore

Do you live in a watershed? – 2005 - 2015



Gwynns Falls Civic Governance Network: 1990-2011

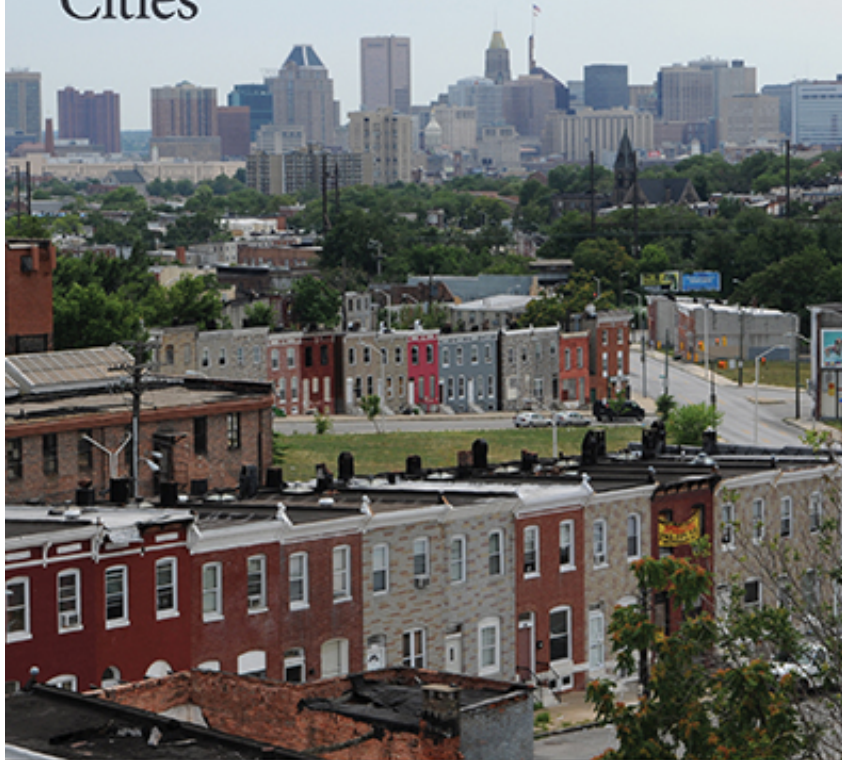


Changes in the GFW organizational network from 1999 to 2011

MEASURE	1999 RESULTS	2011 RESULTS	CHANGE
Population	36 organizations	59 organizations	+ 23 organizations (+ 64%)
Nonprofit	22 (61%)	40 (68%)	+ 7%
Public	14 (39%)	19 (32%)	– 7%
City agency	5 (14%)	11 (19%)	+ 5%
State agency	4 (11%)	3 (5%)	– 6%
Federal agency	5 (14%)	5 (8%)	– 6%
Network Density	12%	8.5%	– 3.5%
Network Centralization	36%	21.5%	– 14.5%

The Baltimore School of Urban Ecology Space, Scale, and Time for the Study of Cities

J. Morgan Grove,
Mary Cadenasso,
Steward Pickett,
Gary Machlis, and
William R. Burch Jr.



Science for the Sustainable City Empirical Insights from the Baltimore School of Urban Ecology

Steward T.A. Pickett
Mary L. Cadenasso
J. Morgan Grove
Elena G. Irwin
Emma J. Rosi
Christopher M. Swan
editors

