

Freshwater Quantity and Demand



Outline

Freshwater quantity (flow):

Gage data

Extreme low flows – frequency and duration

Large floods – frequency and duration

The other side of the equation...

Water demand data

RI Water Resources Board 2012 Strategic Plan

Freshwater Quantity and Demand



Potential Indicators of freshwater quantity (flow):

Gage data

Extreme low flows – frequency and duration

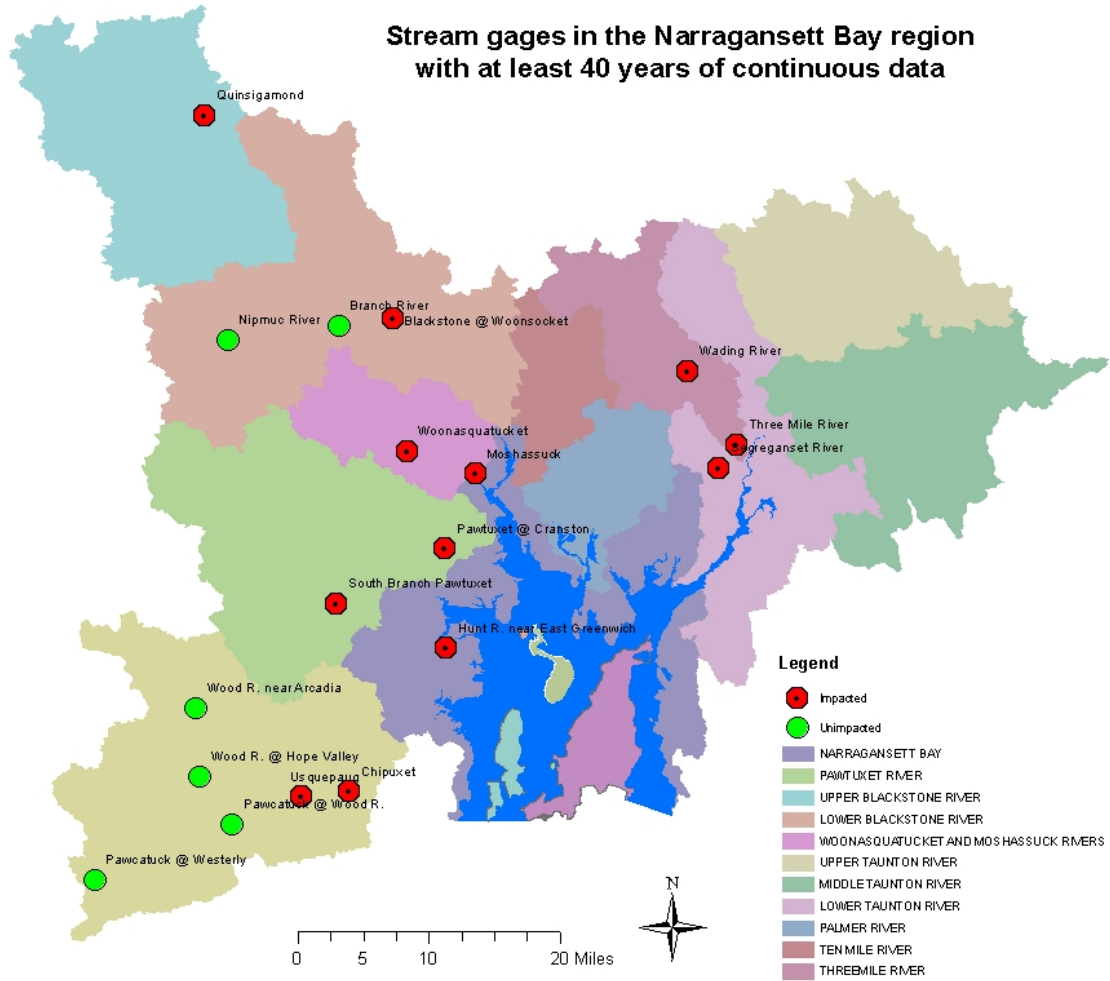
Large floods – frequency and duration

Only use gages that have 40+ years of continuous data

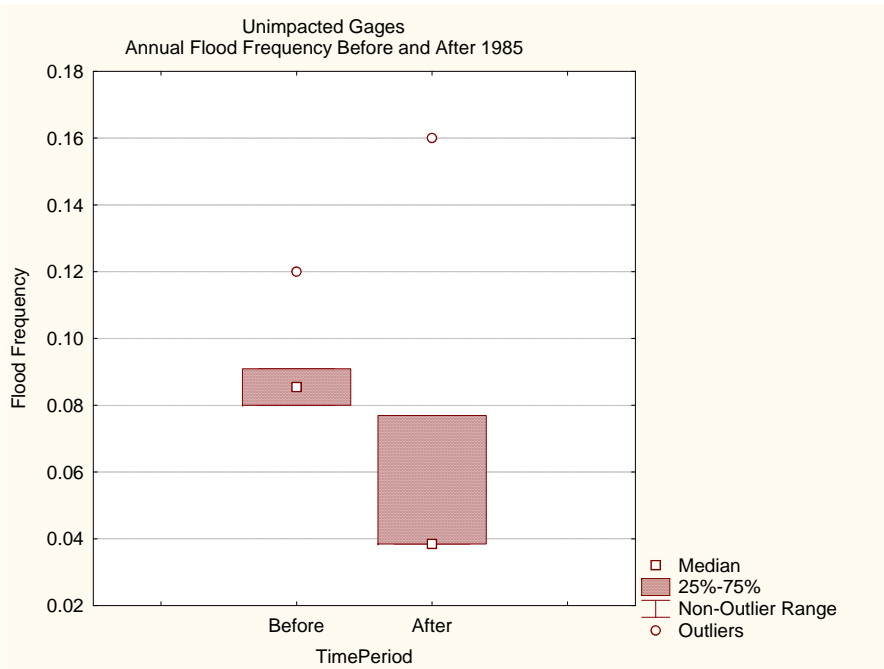
- 6 gages are considered by USGS to be “unimpacted” and therefore useful for tracking effects of climate change

- 12 gages are “impacted” in some way by withdrawals, dams, intensive land use in watershed

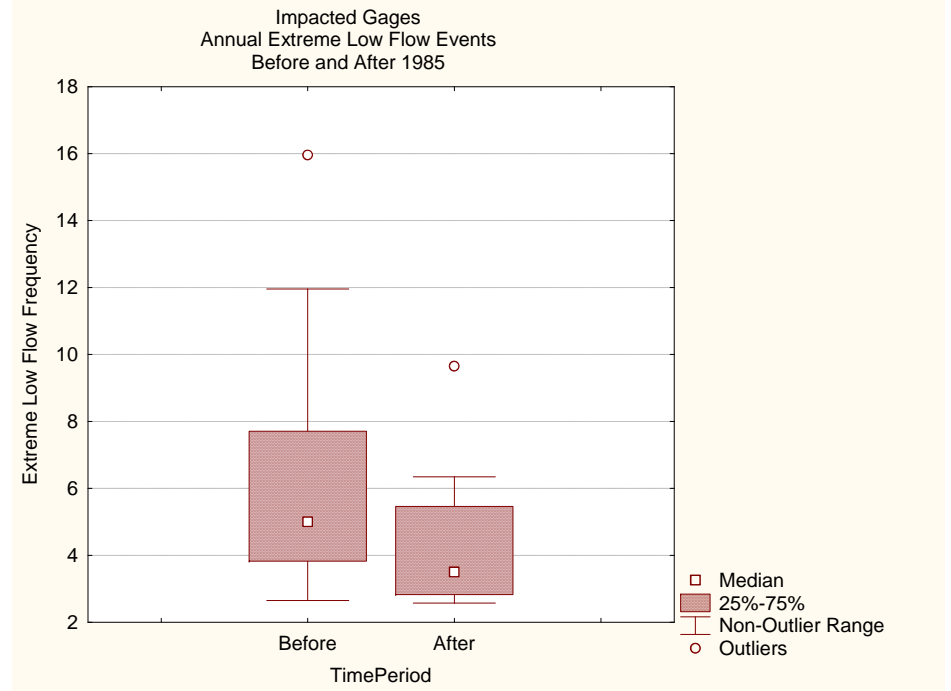
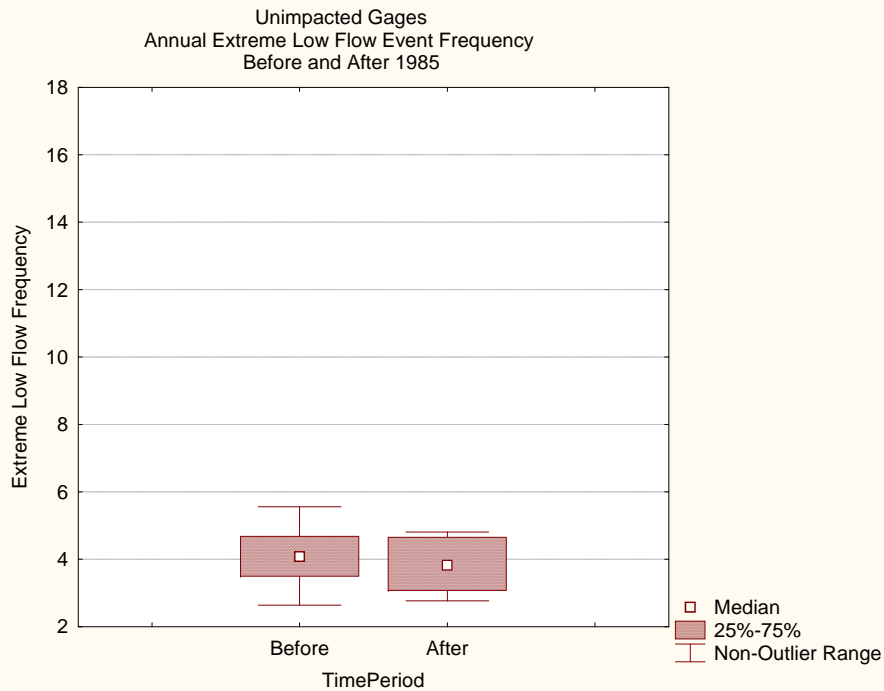
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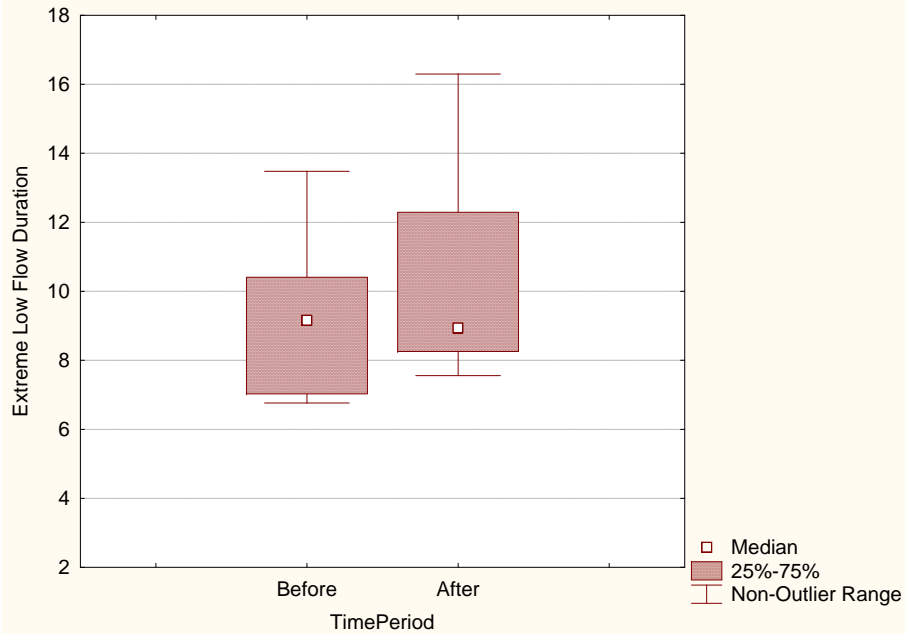
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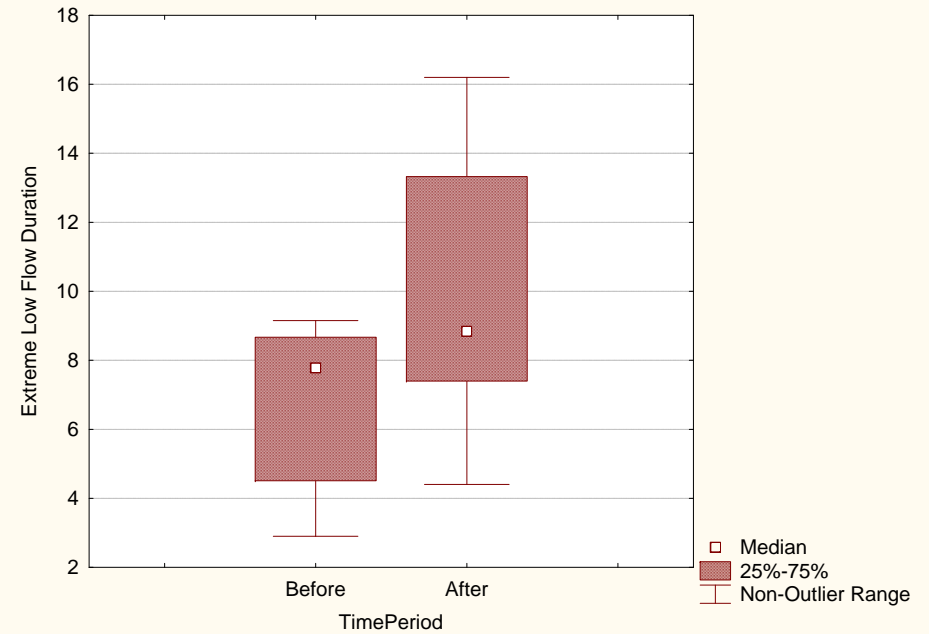
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Unimpacted Gages
 Mean Extreme Low Flow Event Duration (days)
 Before and After 1985



Impacted Gages
 Mean Extreme Low Flow Event Duration (days)
 Before and After 1985



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Primary considerations:

- Theoretically sound

- Relevant to management concerns

- Responds predictably and is sufficiently sensitive to changes in resource or management action/pressure

- Linkable to scientifically defined points and/or progress targets

Managers know where most of the problems are. Does the metric reflect what is known anecdotally? Chicken and egg dilemma...

Gage data are very noisy; need further study

Can a workgroup help?



Water use or “demand”

Theoretically sound

Relevant to management concerns

Responds predictably and is sufficiently sensitive to changes in resource or management action/pressure

Linkable to scientifically defined points and/or progress targets



Water Resources Board 2012 Strategic Plan

Considerations:

Currently have 2005 data

Future data availability?

Management targets?