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Campus Sustainability Performance: Introducing Ecological Regional Analysis to Advance Meaningful Impact

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Campus Sustainability Performance: *Introducing Ecological Regional Analysis to Advance Meaningful Impact*

(In press, PlosOne)

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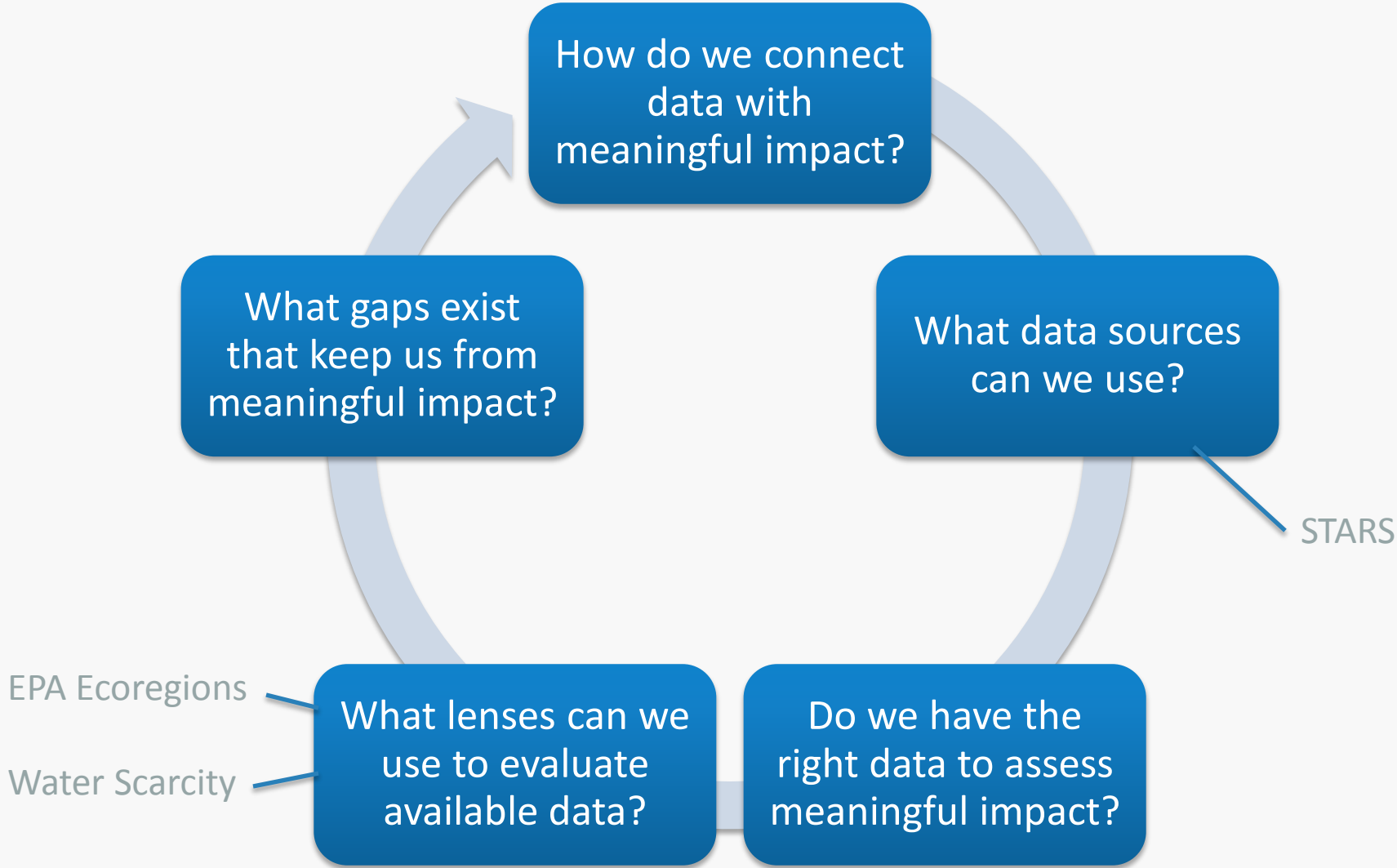


Office of
Sustainability



- The Journey
- Approach
- Results
- Recommendations

The Journey: Evolution of Observations, Questions, and Study Approach





Approach:
From
information to
impact

building on what we have
making meaning of the data
ensuring meaningful actions
connecting campus to region
setting the 'right' goals

Observations/Assumptions:

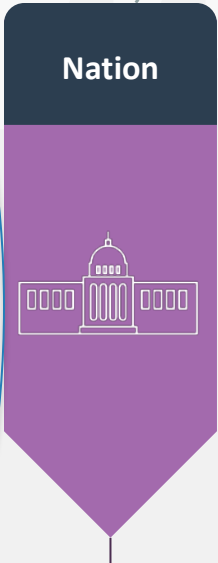
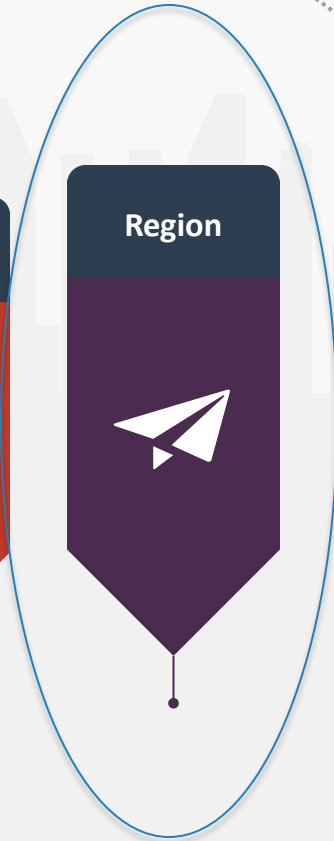
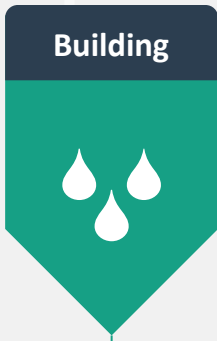
- * we assume that “impact” must include measurable improvements to local/regional environmental systems
- * current metrics do not track impact on local/regional environmental systems nor do they encourage “collective impact” thinking
- * campus sustainability goal-setting (and by extension performance) appears homogenous regardless of regional context
- * a regional approach to progress-tracking provides the ideal scale for campus sust planning (scale matters)
- * positive impacts on regional systems remain **assumed** rather than **verified**

Global Impact



Working Across Scale

Bringing local solutions to the global scale



Methods

1. Use newly abundant campus performance data from across North America
2. Use existing regional ecological mapping resources to group campuses into ecologically similar regions
3. Analyze collective campus performance at various sub-continental scales
4. Present the significant patterns that emerge at each scale
5. Determine which scale is most appropriate for campus prioritization and planning

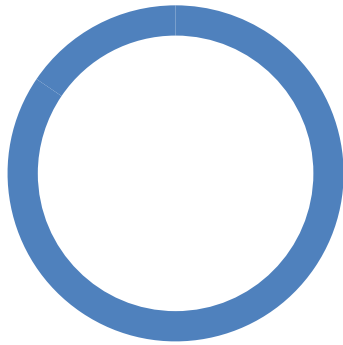


Self-reported Data Repository for North America

700+ institutions registered

300+ institutions have submitted data

STARS Categories



Academics

Research &
Curriculum



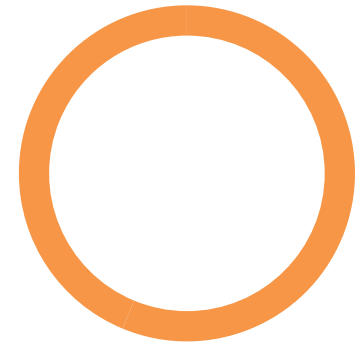
Engagement

Campus & Public



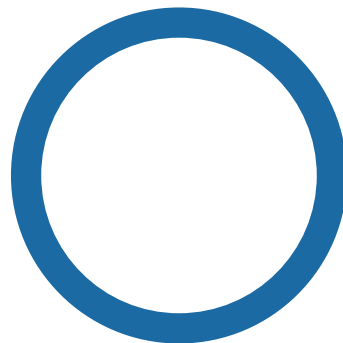
Operations

Energy, Water, Air,
Grounds, etc.



Planning & Administration

Coordination,
Planning, Diversity,
Wellbeing, Invest



Innovation

Institutions Included in this Study

306 STARS reporting
colleges &
universities

2005 baseline data
2013/14 reporting
year data

Analyzed through
two regional
frameworks

STARS data analyzed through two robust regional lenses

- Center for Environmental Cooperation/EPA designated Ecoregions
- WaterStat geographic water scarcity data (waterfootprint.org)



Results

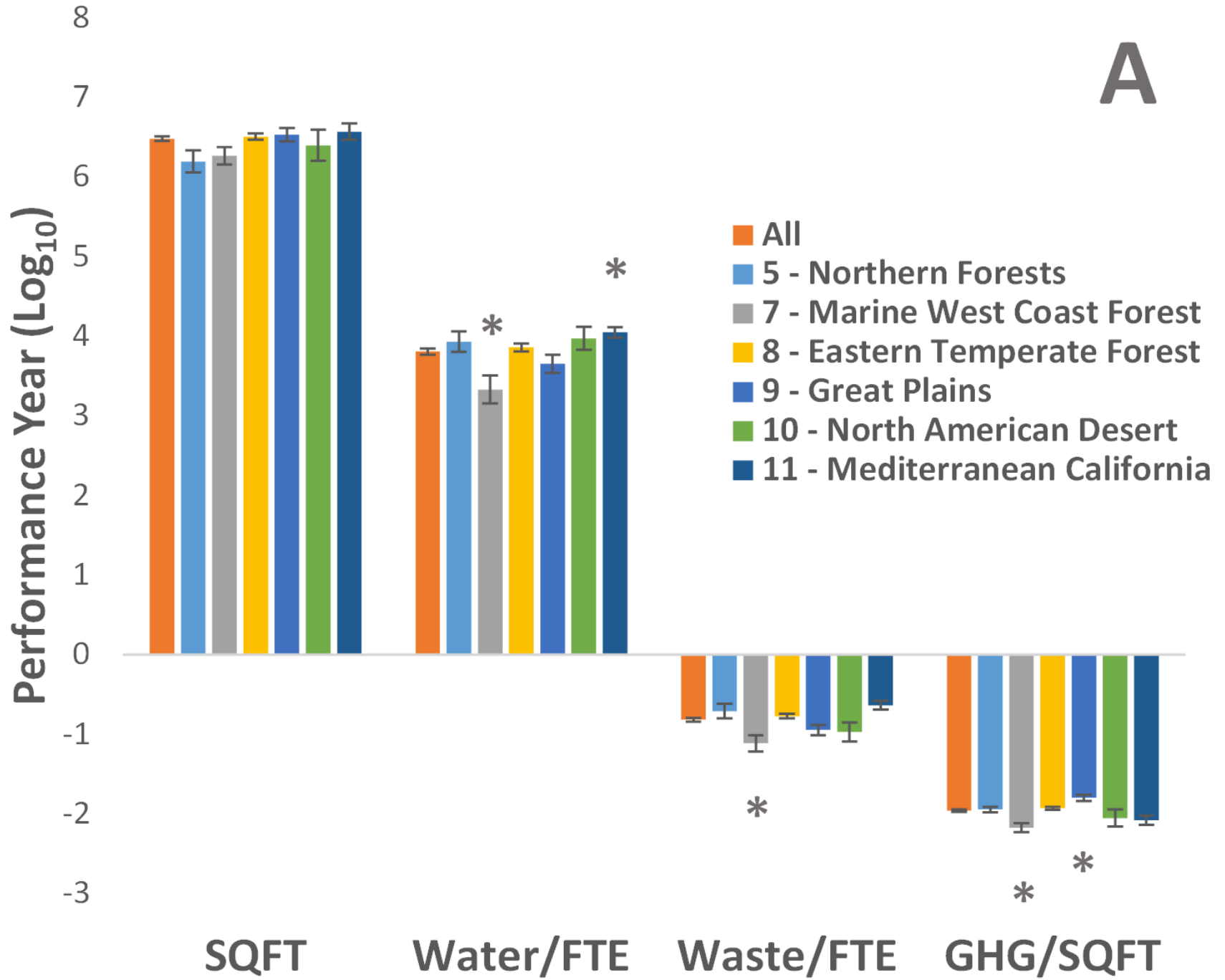
STARS Reporting Institutions: Continental Scale

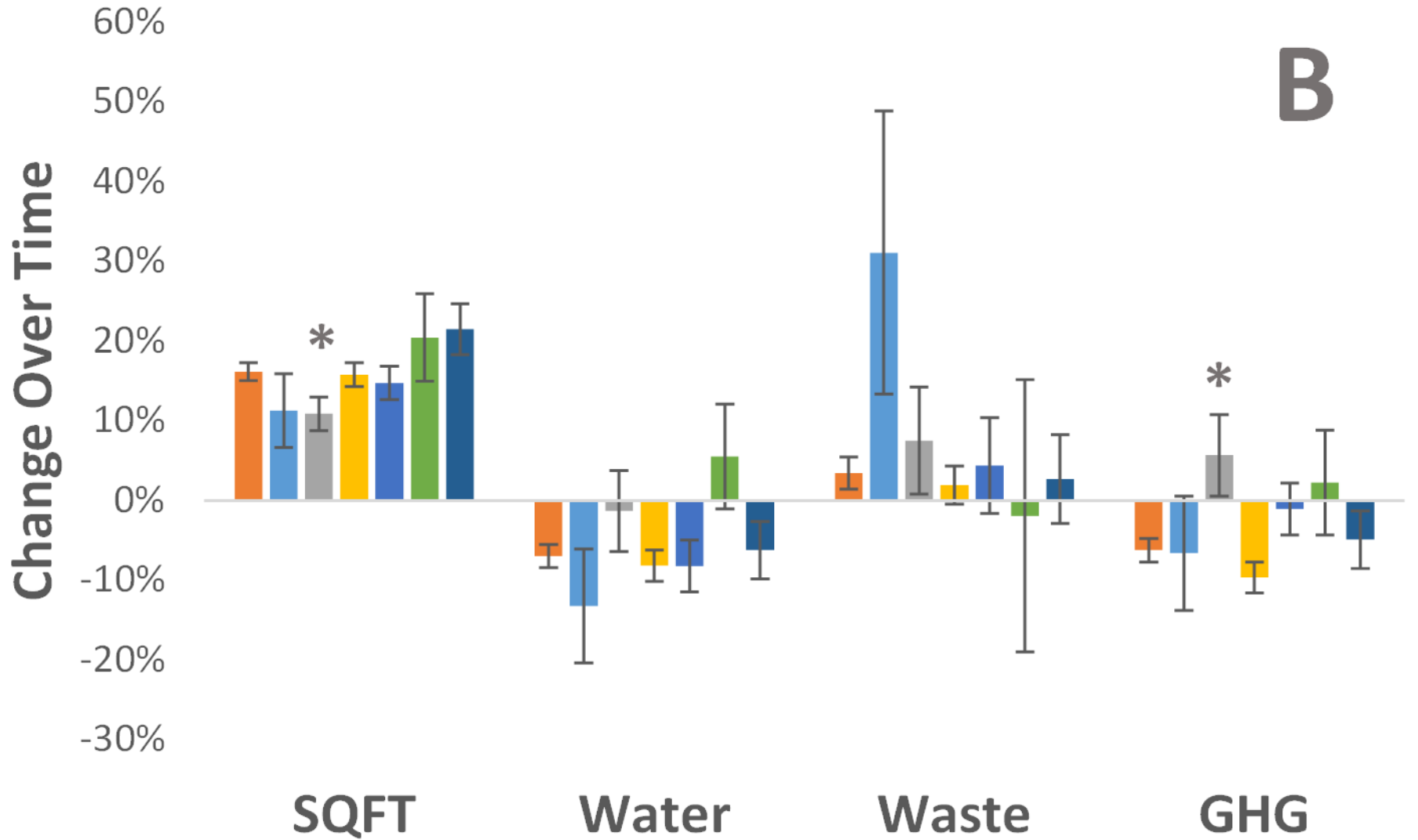
Large Regional Scale

Local Regional Scale

STARS Reporting Institutions: Continental Scale

A





Findings: Level 1

Ecoregion*			N	Performance Year				Change Over Time			
				SQFT	GHG/SQFT	Water/FTE	Waste/FTE	SQFT	GHG/SQFT	Water/FTE	Waste/FTE
Level I	5	Northern Forest	7								
	7	Marine West Coast Forest	22		-	-	-	-	+		
	8	E. Temperate Forest	194								
	9	Great Plains	38		+						
	10	N. American Deserts	12								
	11	Mediterranean California	22			+					

Large Regional Scale

Local Regional Scale

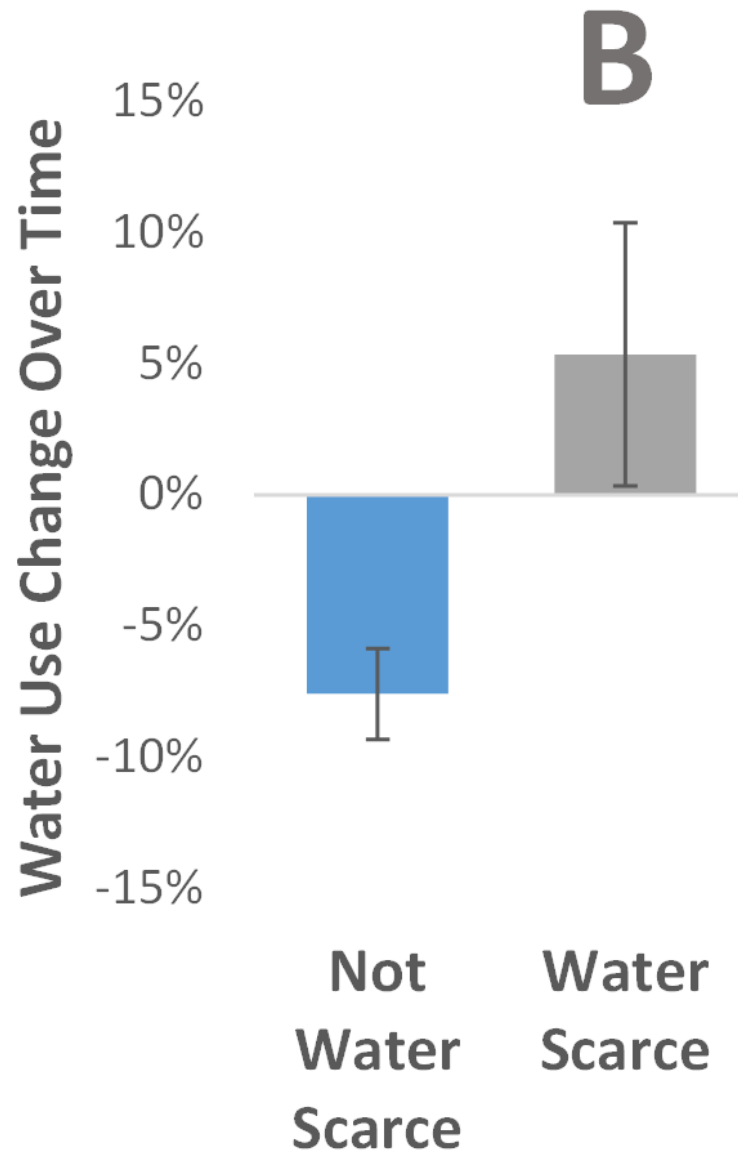
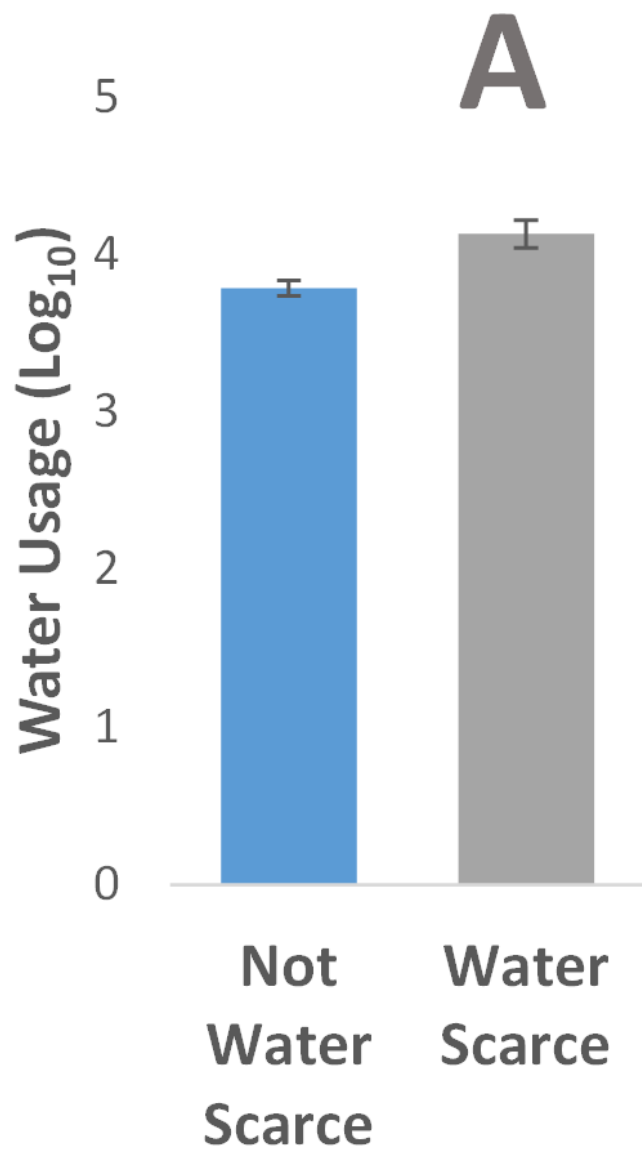
Findings: Level 3

Ecoregion*	N	Performance Year				Change Over Time			
		SQFT	GHG/SQFT	Water/FTE	Waste/FTE	SQFT	GHG/SQFT	Water/FTE	Waste/FTE

Level III	8.1.1	E Great Lakes and Hudson Lowlands	19		-				-		
	8.1.2	Lake Erie Lowland	5								
	8.1.3	N. Appalachian Plateau and Uplands	7						-		
	8.1.4	N Central Hardwood Forest	5					-			



Water Scarcity



- At the continental scale, most institutional performance appears statistically uniform
- Once institutions are grouped regionally, significant performance patterns emerge that could inform the impact of campus sustainability actions and goal-setting
- Sustainable food purchases are statistically uniform at all scales
- Campuses in water scarce regions are using more water per FTE than those in non water scarce regions, and increasing gross usage over time



Results

- STARS, even in its current format, could benefit from presenting institutional performance data grouped regionally
- Partnership with academic research endeavors is required to defensibly define regional targets, if such targets are a viable driver for collective impact
- Information from existing and reputable resources that define key regional sustainability challenges should be integrated into the campus sustainability field to help align campus goals with meaningful regional impact



Recommendations

Magnifying Impact