



## Danielle Boudreau

*Coastal Management  
Specialist, Tijuana River NERR*

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# Overcoming Uncertainty through Climate Scenario Planning

## Notes:

Dani Boudreau is Coastal Management Specialist at Tijuana River National Estuarine Research Reserve (Imperial Beach, California).

Syverine Bentz is Coastal Training program Coordinator at Kachemak Bay National Estuarine Research Reserve (Homer, Alaska).

Our presentation shared how multiple barriers hinder effective adaptation planning in Southcentral Alaska, including the uncertainty around future climate trajectories and limited capacity for interagency collaboration, and how they used climate scenario planning to overcome these issues and also resulted in multiple unexpected outcomes for the Kenai Peninsula community.







Blooms of Harmful Algae



Forest Fire Frequency



Growing Season Length



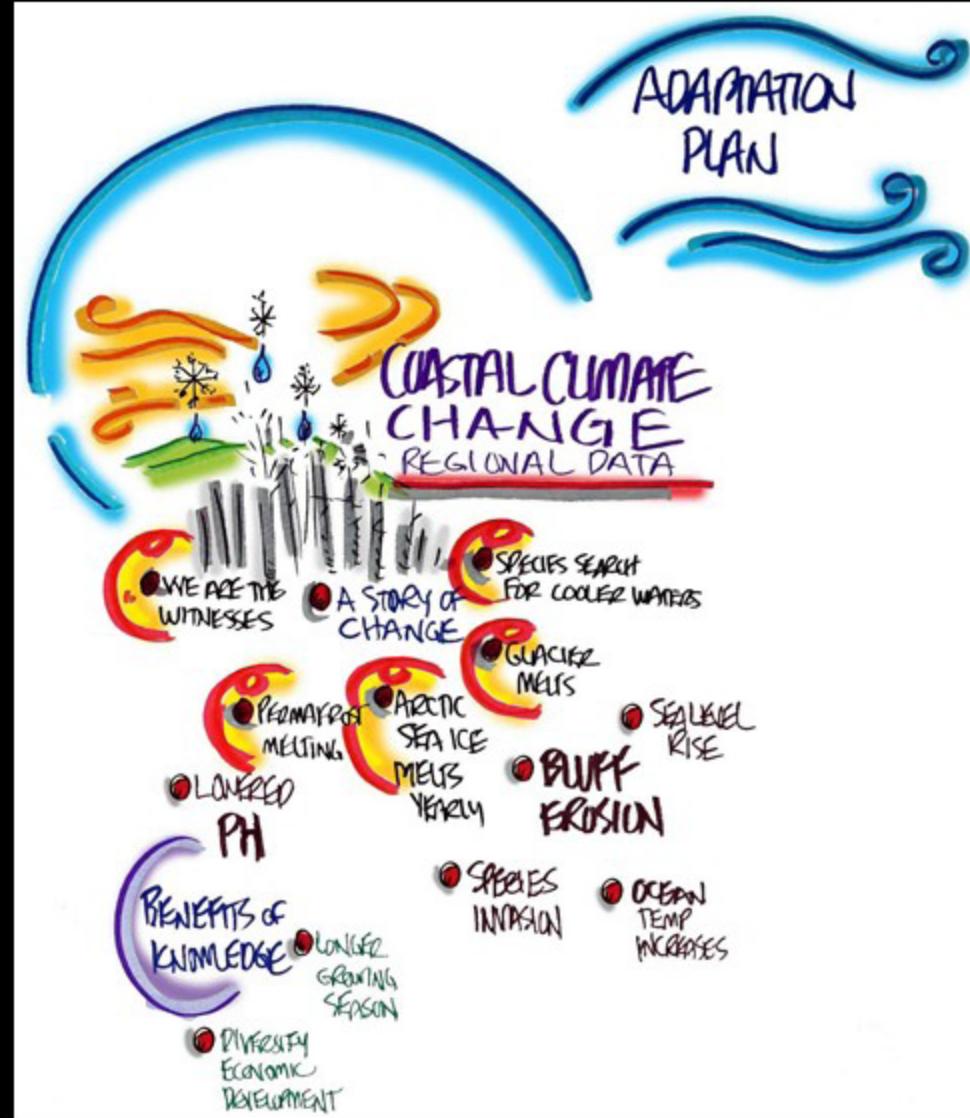
Ocean Acidification & Temperature

NOTES

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# Aligning multiple opportunities

- NERRS Science Collaborative Transfer grant
- NOAA Office for Coastal Management CACC training
- Successful Adaptation Indicators & Metrics (SAIM) project



# Bringing it all together

March 2016

## CLIMATE ADAPTATION FOR COASTAL COMMUNITIES

Introduction to climate change science – Observed and projected changes

Basics steps of the adaptation planning process

Communicating climate change and adaptation



Framework

October 2016

## SCENARIO PLANNING AND PATHWAYS TO SUCCESSFUL ADAPTATION

Vision for Homer & Kenai Peninsula

Climate scenarios

Pathways & Trigger points



Vision & Pathways

April 2016

## SUCCESSFUL ADAPTATION PART II: STRATEGIES, PATHWAYS, AND EVALUATION

Climate-sensitive strategies to solve existing problems

Transparent adaptive decision-making

Indicators of progress and success, and building capacity for ongoing learning



Indicators & Metrics

NOTES





# High Groundwater Recharge

## Sitka (SE Alaska)



*Mud slide buries  
Two Sisters Bakery*

## Wet & Wetter



*Future for salmon uncertain*

**Steady Surface Flow**

**Extreme Surface Flow**

Current  
State

## Steady Flow & Dry Below



*Sucking Us Dry:  
Lacking groundwater  
recharge blamed for  
economic decline*

## Drier Landscape & Flashier Floods



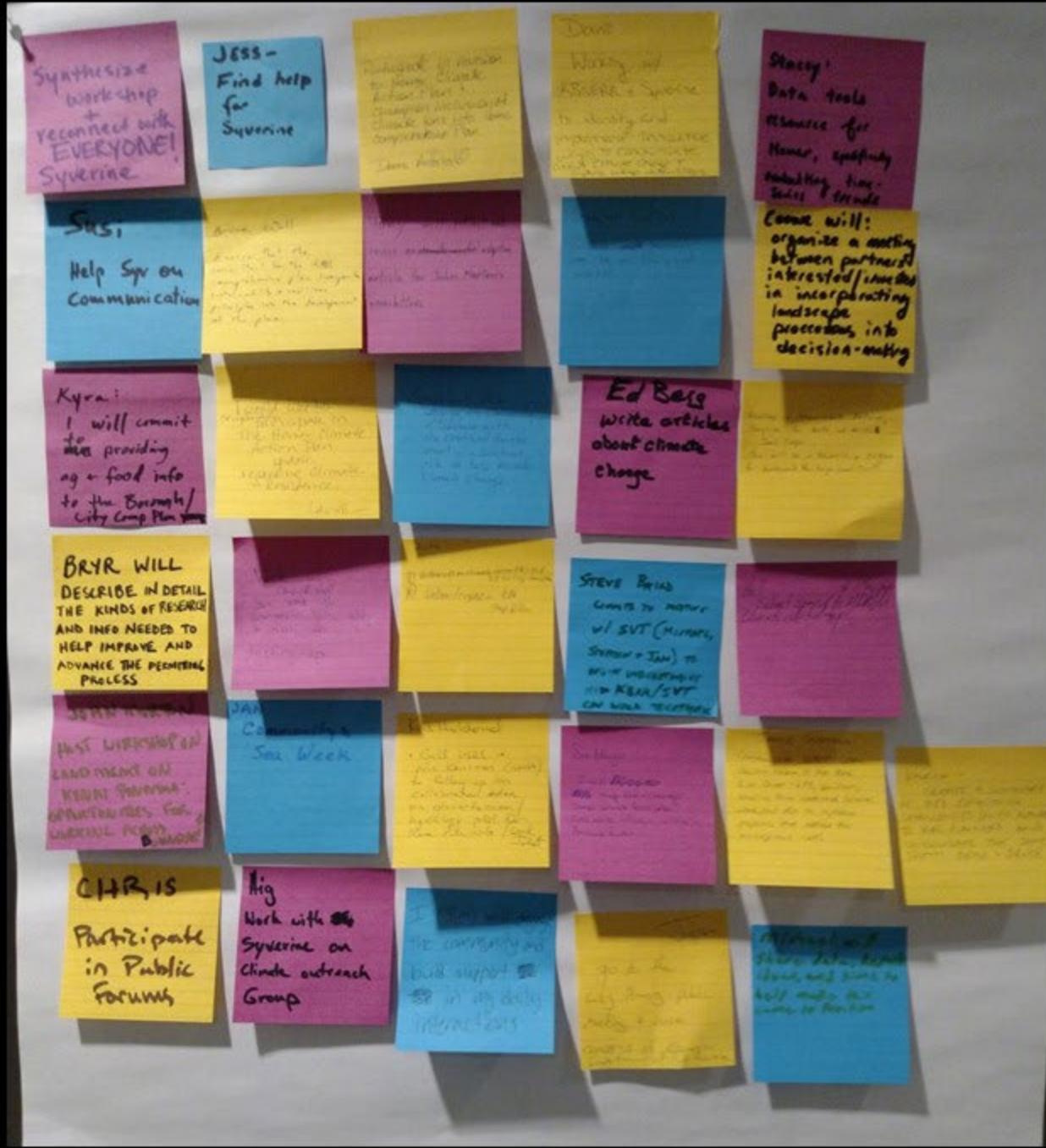
*Community stability?  
Change is the new norm*

# Low Groundwater Recharge

## NOTES

Scenario development





# NOTES

- Commitment wall







# Engagement Activity

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## Poll Results

**Poll Questions:** What methods of engagement are you interested in learning more about?





## NOTES

- Improve networks

*“A real value is that this is cross pollinating.*

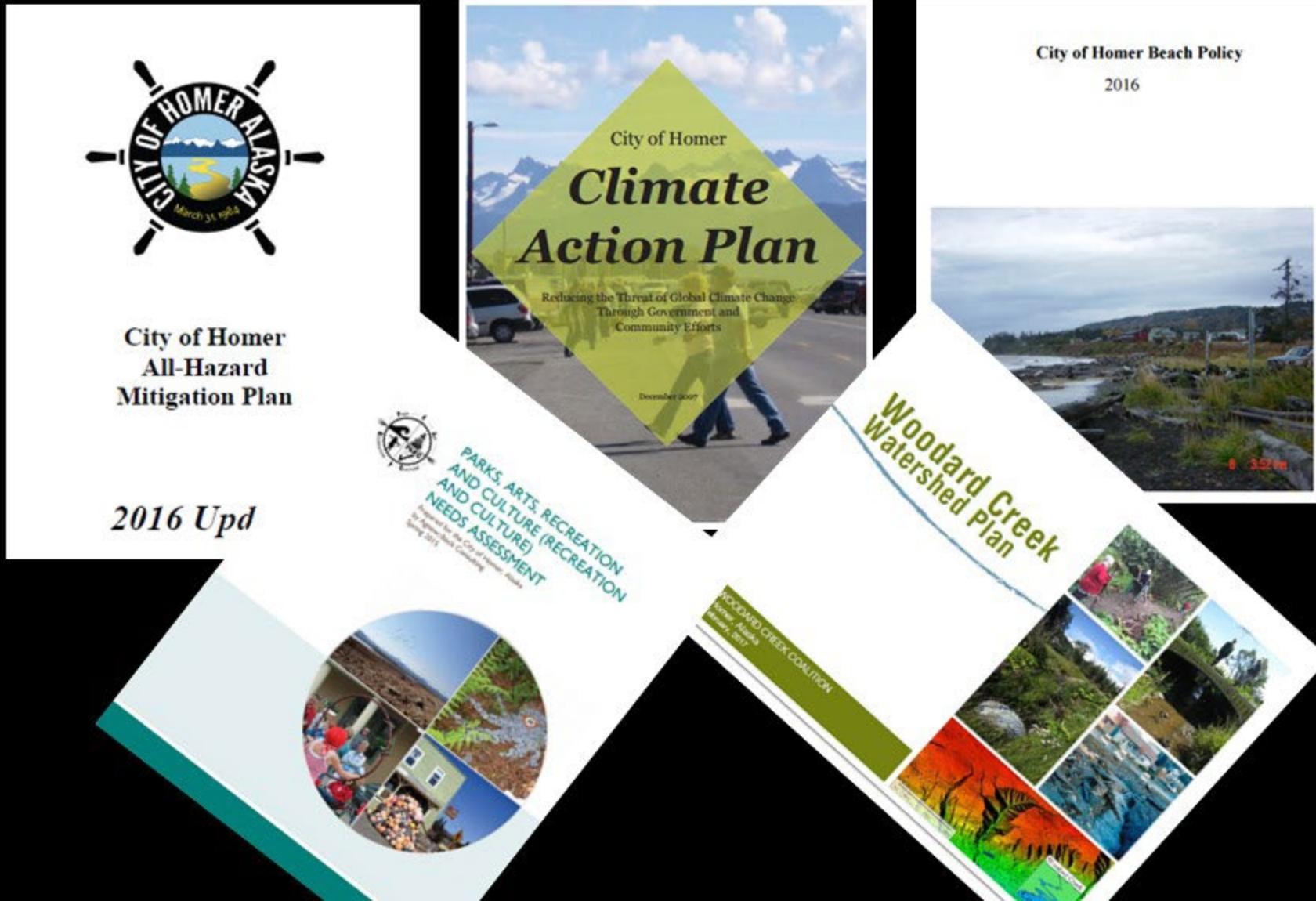
*Because we are in the same room we are aware of others”*

*-Stream Ecologist*

*“I feel 100% more empowered to talk about climate change with a wide variety of people” –Municipal Planning Staff*

## NOTES

- Support local planning



## NOTES

Connect with policymakers through Youth and Artists



Alaska Lt. Governor Byron Mallott

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I chose the artwork of Homer Student Beatrix Strobel. She illustrated on silk the "Blooms of Alexandrium Catenella", which looks like a red tide along our coast, but is actually algae. Algae which can cause paralytic shellfish poisoning or PSP. Warmer oceans and elevated sea levels can cause the amount of the algae to rise. — at [Alaska State Capitol](#).

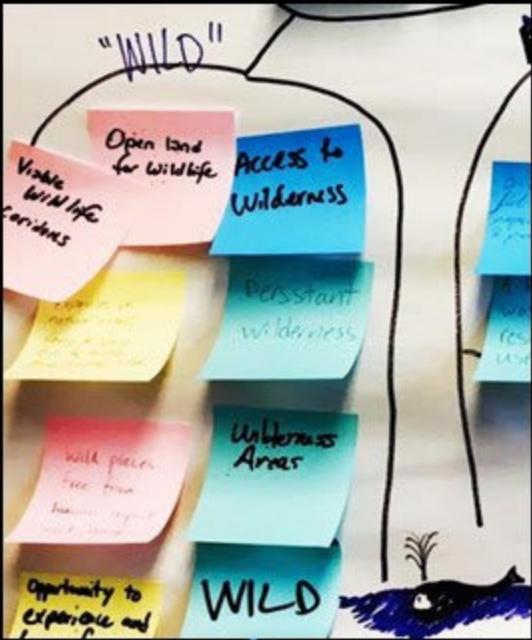


*“So empowering and beautiful to be able to create art about a challenging topic”  
—Parent of art student*

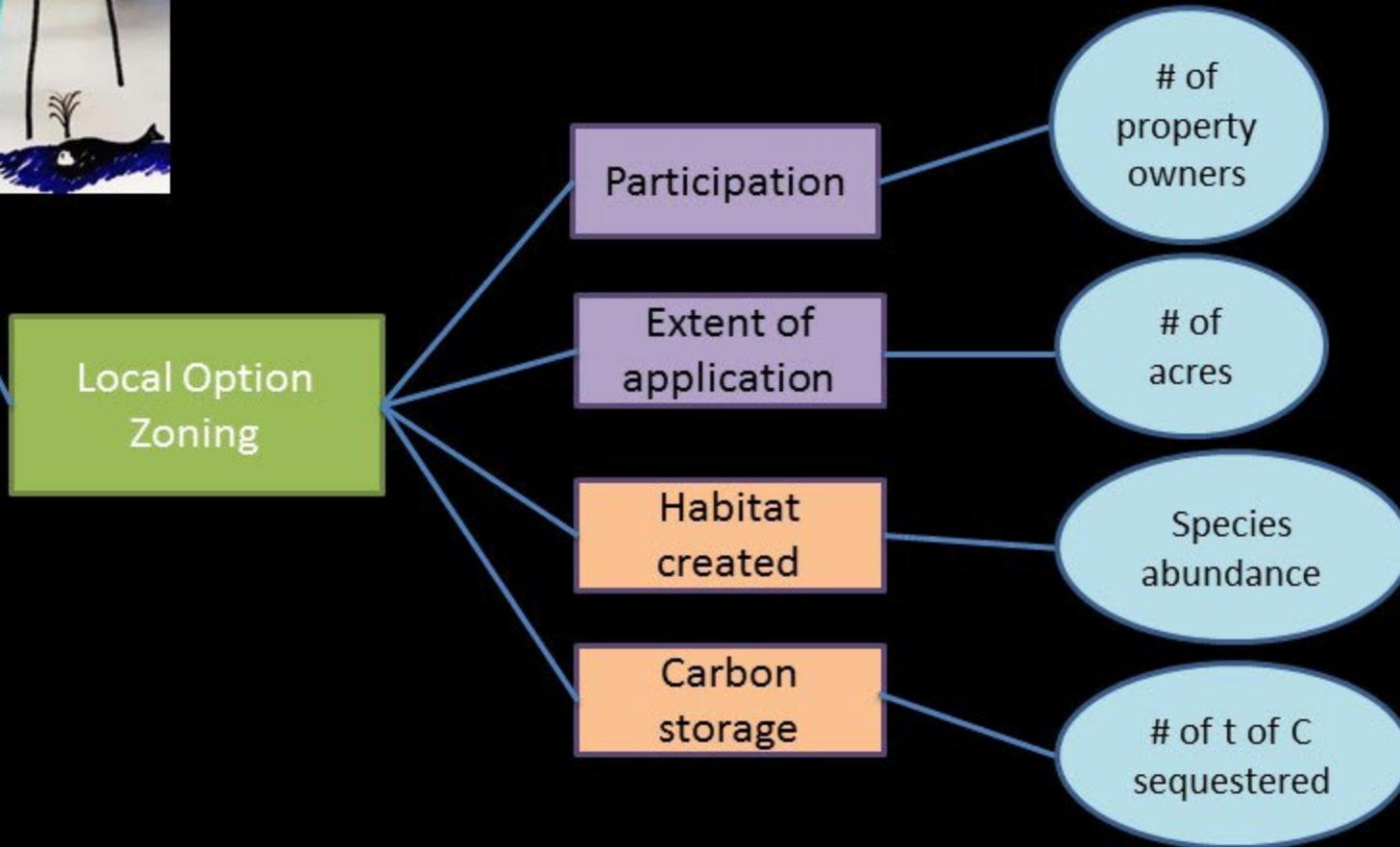








# Tracking Adaptation Strategies



## NOTES

- Inform indicators and metrics we should
- be tracking in light of future potential
- scenarios
- Vision element- Strategy-progress and
- outcome indicators- metrics

# Thank you!

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James Arnott, University of Michigan  
Gwen Shaughnessy, NOAA Office for Coastal Mgmt

## For more information

- [accs.uaa.alaska.edu/kbnerr/climate-resilience](https://accs.uaa.alaska.edu/kbnerr/climate-resilience)
- [trnerr.org/climate-scenario-planning-alaska/](https://trnerr.org/climate-scenario-planning-alaska/)

*Thank you to our funder the  
NERRS Science Collaborative!*



## NOTES

- Please contact us if you have any follow-up questions or comments. We'd love to hear from you.