

# Assessing Coastal Risks from the perspective of the Economy of Climate Adaptation

## A case for the Gulf Coast



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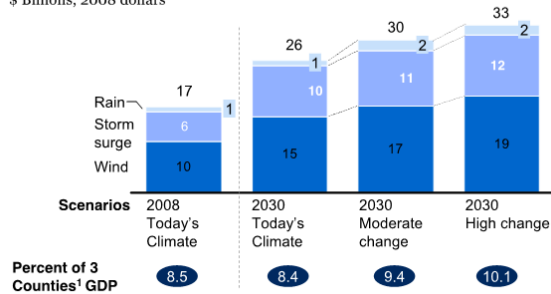
The Nature  
Conservancy  
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# A little background



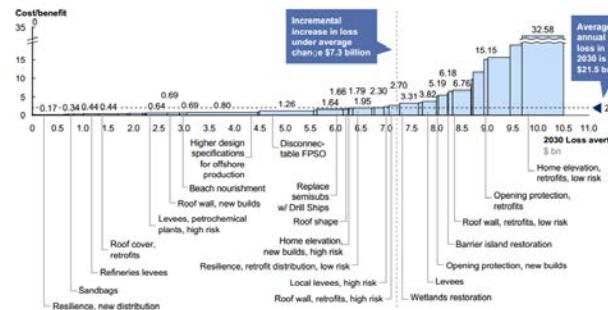
## Loss calculation – Florida case study

Annual expected loss in 2008 and 2030  
\$ Billions, 2008 dollars



Source: Moody's, Swiss Re, eca workgroup analysis

## 5 A range of attractive measures can address the increase in annual loss between today and 2030 and keep the risk profile of the region constant



## Building a Resilient Energy Gulf Coast: Executive Report



Swiss Re



MOODY'S

Hazard

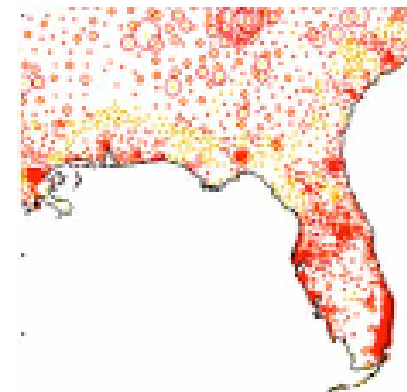
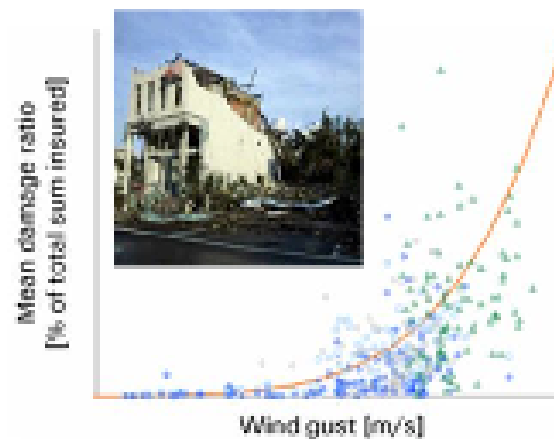
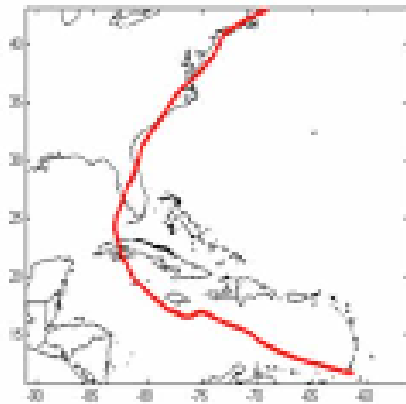
Damage function

Assets

How strong?  
How frequent?

How well built?

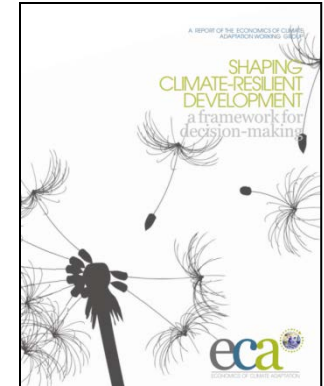
Where?  
What?



(1) DEM (2) Population (3) Value of Assets

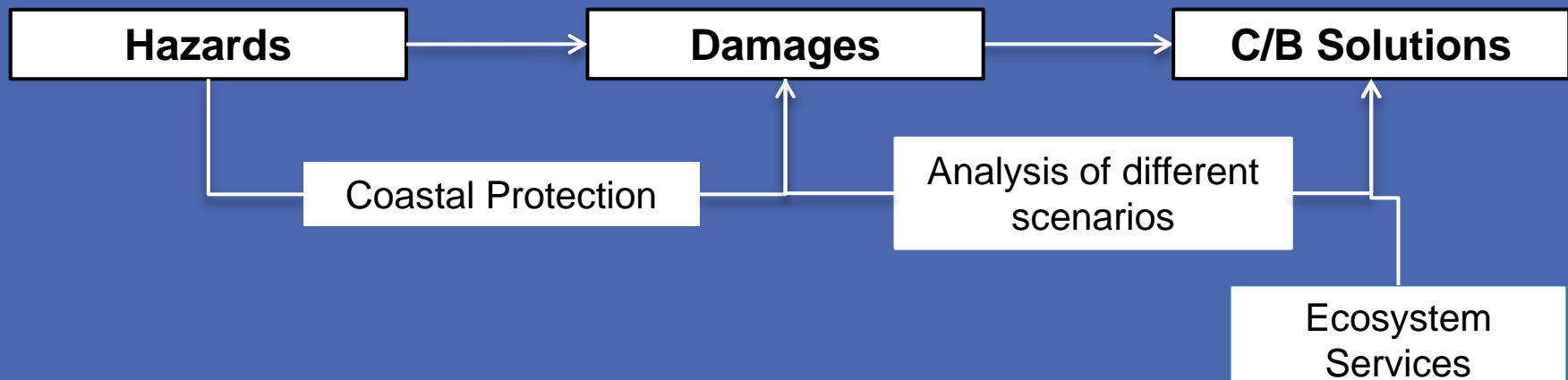
# The FRAMEWORK

1. Applying and developing the Swiss Re **CLIMADA** model - methods & approach -
2. to coastal areas
3. from “open” knowledge and capabilities



*Economics for Climate Adaptation*

Collaborating with **Swiss Re** in **valuing the ecosystem protection service** as part of the existing/future coastal infrastructure



# The FRAMEWORK

**Hazards**

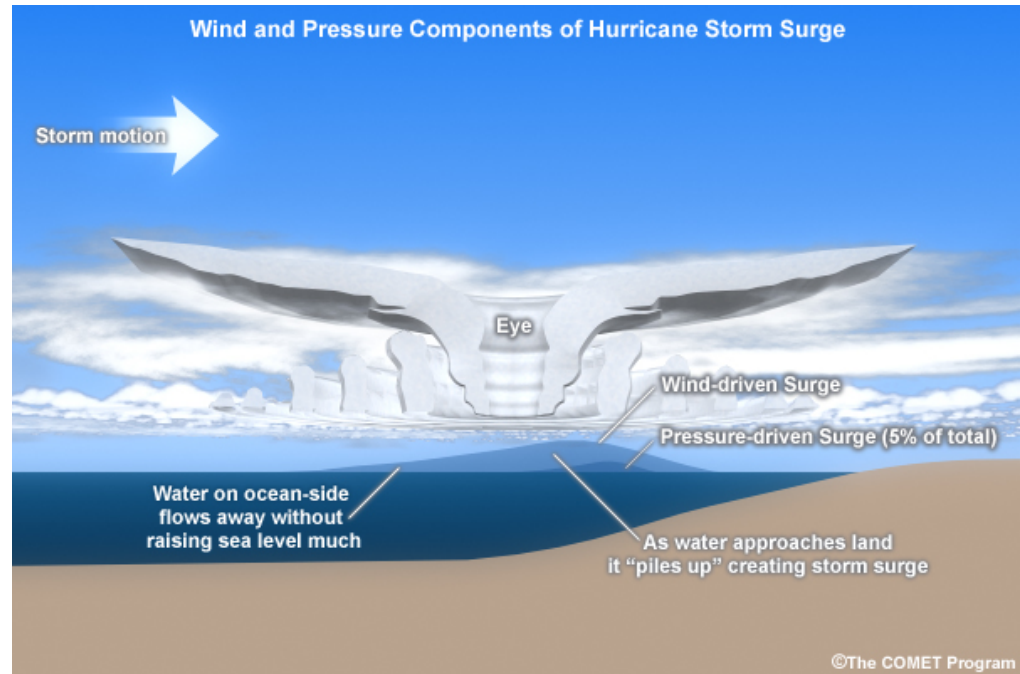
**Damages**

**C/B Solutions**

Wind

Rainfall

Storm Surge & Waves  
(Flooding Height)



# The FRAMEWORK

**Hazards**

**Damages**

**C/B Solutions**

Wind

Rainfall

Storm Surge & Waves  
(Flooding Height)

Assets

Population

...



# The FRAMEWORK

**Hazards**

**Damages**

**C/B Solutions**

Wind

Rainfall

Storm Surge & Waves  
(Flooding Height)

Assets

Population

...

Seawalls

Beach  
Nourishment

Wetland  
Restoration

Elevation

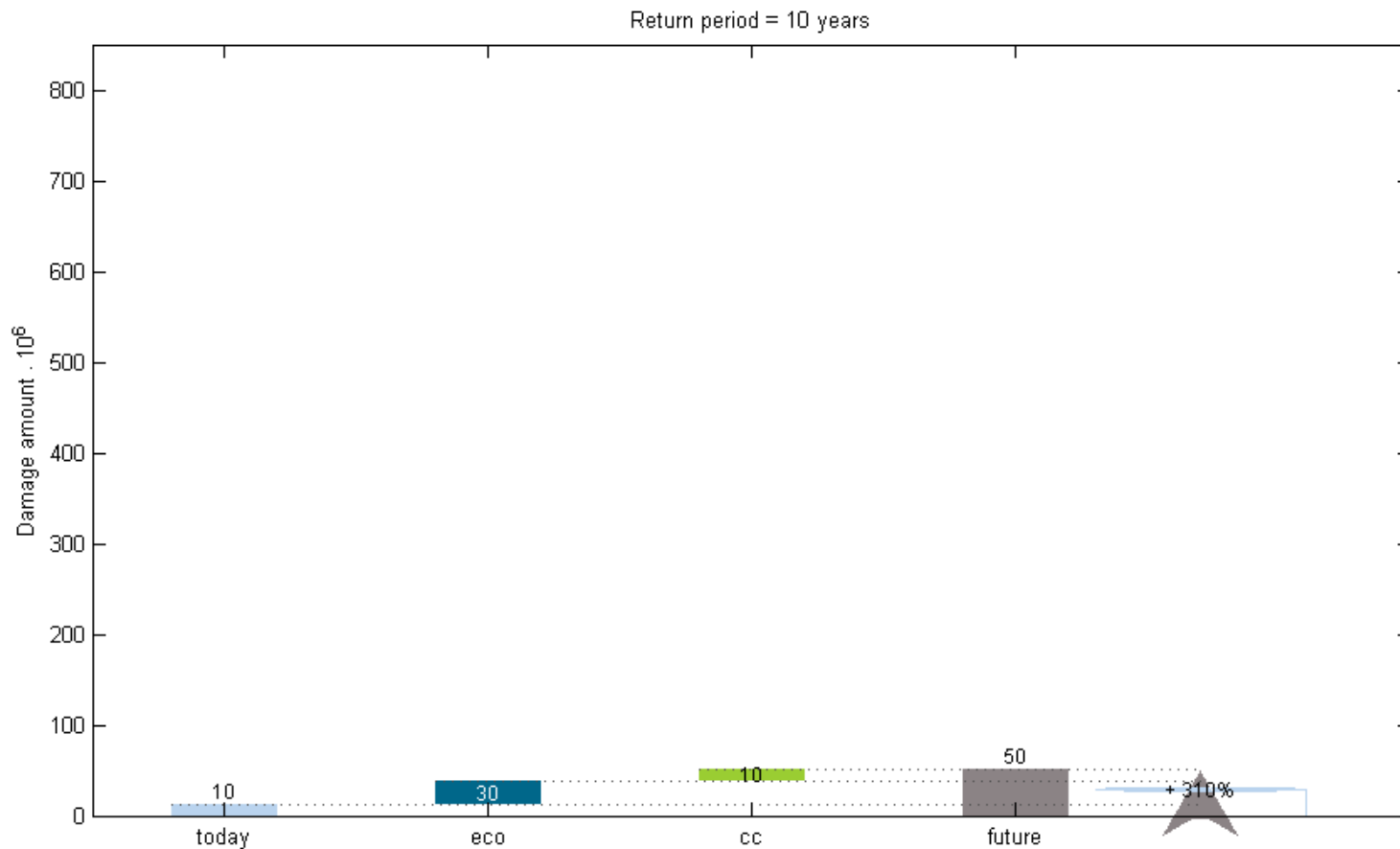
Risk Transfer

...



# Comparing risks for different scenarios...

0. Today's expected losses
1. Economic growth (no CC)
2. CC

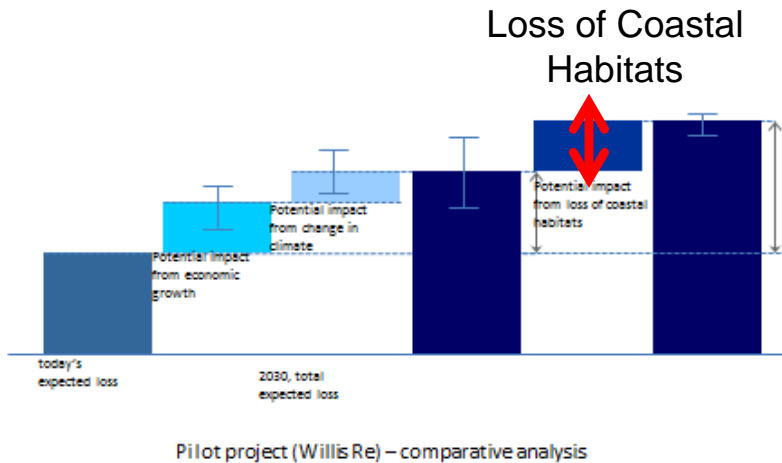




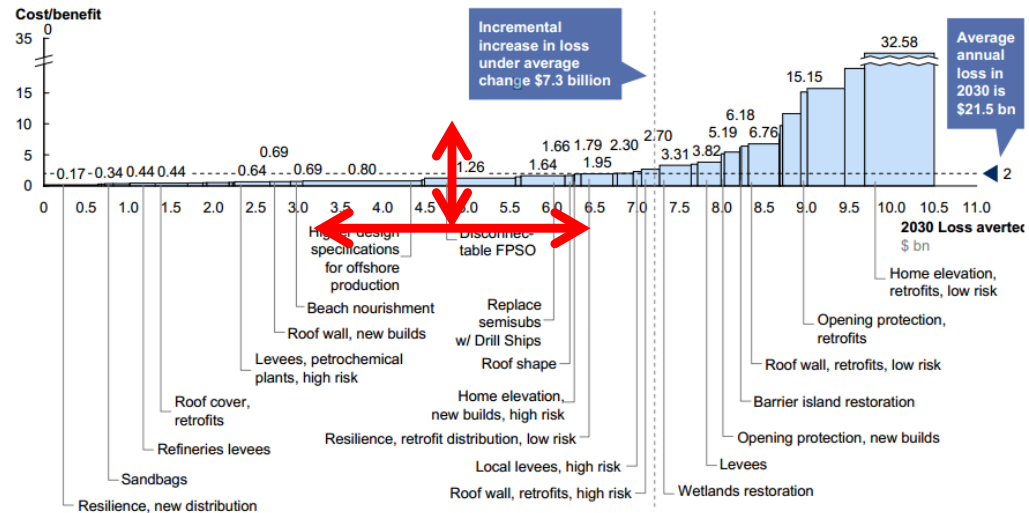
# The role of ecosystem in the Framework

1. Additional Benefits
2. Future scenarios of rehabilitation / degradation

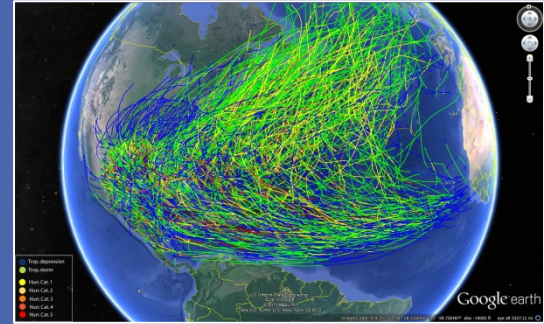
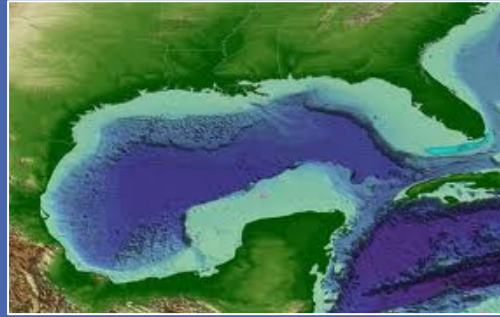
Ex. How to account for the risk of ecosystem loss?



**5** A range of attractive measures can address the increase in annual loss between today and 2030 and keep the risk profile of the region constant



At different scales...



# Thank you

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**Mike Beck**

**Juliano Calil**

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TNC-CoastalResilience.org



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