

A hybrid efficient tool to assess the effect of climate change adaptation measures in estuarine environments

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EIDEIC
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**Geomatics and Ocean
Engineering Group**
UNIVERSIDAD DE CANTABRIA

Background

Academic Background

Bachelor's degree in Civil Engineering – UC (Spain)

Master's degree in Civil Engineering – UC (Spain)

Engineering diploma – ENPC (France)

Previous Research Experience

AguaClara Cornell (US)

GeoOcean - (Spain)

EDF R&D – Laboratoire de Saint-Venant (France)



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Motivation

**Development of
Soft-skills**

**Career
opportunities**

**Further education
in Areas of interest**

Thesis

FPI funding

Thesis associated with R&D project : A hybrid efficient tool to assess the effect of climate change adaptation measures in estuarine environments

Thesis topics

Compound events

Climate Change

Hybrid Downscaling

Climate Change

Sea Level Rise (SLR)

Flood risk

Saline Intrusion

Ocean Acidification

Habitat loss



Source: US Environmental protection Agency

Compound Events

Risk as a single variable

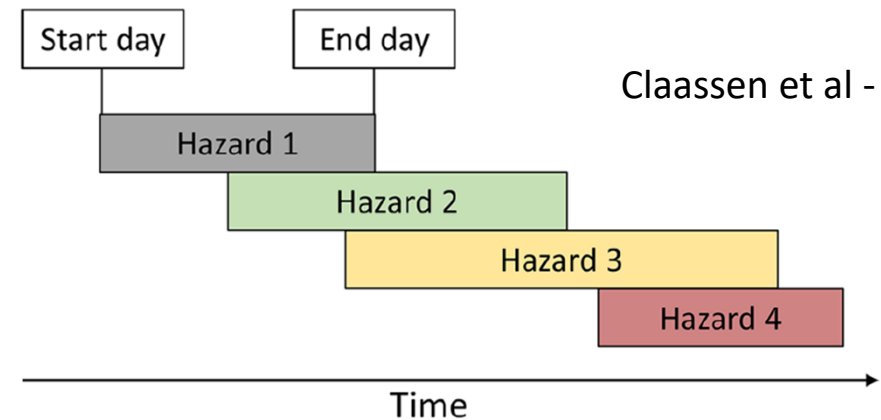
Flood Events due to high river discharge

Flood Events due to high sea levels

Droughts

Habitat loss

Risk as multiple variables that interact



Claassen et al - 2023

Hybrid Downscaling

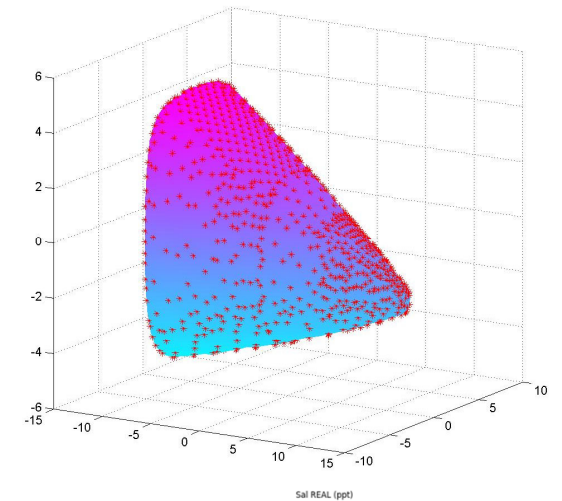
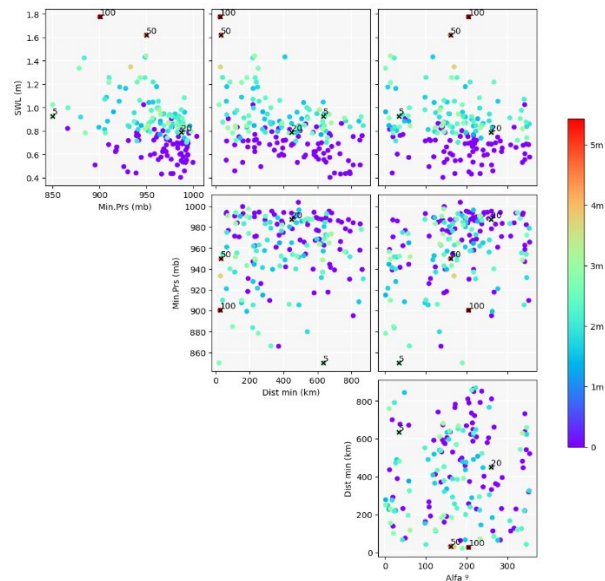
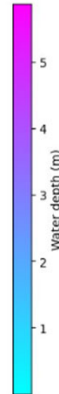
Dynamic
Downscaling

+

Statistical Tools

→

Hybrid
Downscaling



Expectations

**Develop tools that
can be used by
stakeholders to
improve natural
resources
management**

**Work on my
technical and soft-
skills to improve
my work ethic**

**Learn the ins and
outs of a new field
at an international
level**