

The Mitigation and Adaptation Research Institute (MARI)

At Old Dominion University responds to the knowledge needs of a wide range of community stakeholders, including government, military, private sector, and citizens. **MARI's** vision and mission imply a strong linkage between the institute and these societal stakeholders. The high rate of local sea level rise, the exposure to extreme weather events, and the complex socio-economic structure makes Hampton Roads a natural laboratory for climate change and sea level rise. MARI works with stakeholders within and outside the region to generate the knowledge that can enable them not only to reduce the negative impacts but also to utilize the opportunities in the changes to come.

There is urgency

The anticipated changes in global temperatures (as well as many other climate-relevant variables) during the 21st Century will by far exceed changes documented in paleo data both in magnitude and the pace of changes. This will put the planet in a state unknown to civilization and the ecosystems of today. Climate change is impacting the daily life of people already now. The time for mitigating climate change is running out. There is an urgent need to develop adaptation science and to produce the practice-relevant knowledge that address all these issues.



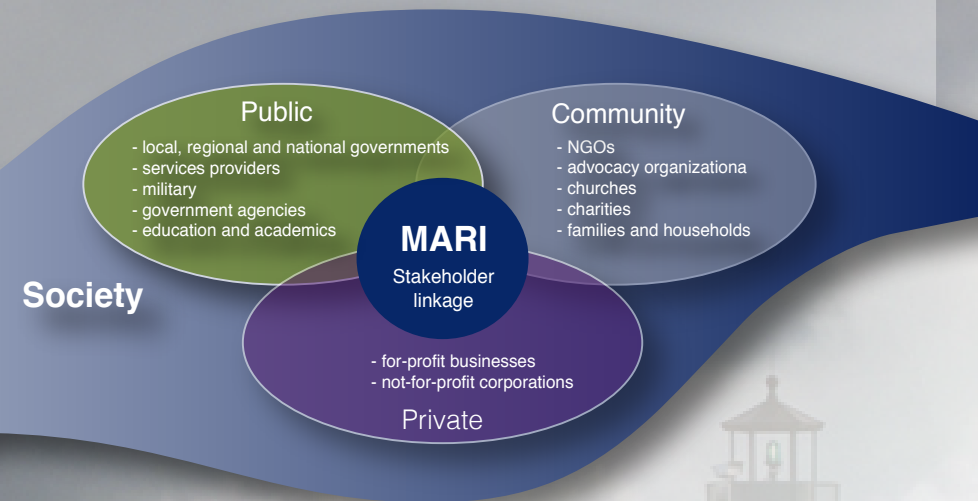
Preparing for a Range of Possible Futures

Many low-lying areas are exposed to increasingly more frequent “nuisance flooding” as a result of the current rise in local sea level. In some areas, roads and buildings are by now exposed to flooding for up to 200 hours per year and this might rapidly increase to 500 or more hours per year in the near future. Coastal communities need to prepare for much larger sea level rise and develop concepts for living where it is safe and working where it is needed.

Creating the Practice-Relevant Knowledge Society Needs

MARI focuses on problem-motivated basic and applied research on all aspects of mitigation of climate change and its impacts as well as adaptation to the changes that cannot be prevented with a view on sustainable development.

1. Mitigation of Climate Change and sea level rise: actions that limit and reduce changes in the Earth's system that are known to force climate change or increase sea level rise.
2. Mitigation of climate change and sea level rise impacts: actions that aim to protect against certain levels of impacts of climate change and/or sea level rise.
3. Adaptation to climate change and sea level rise: actions that increase our preparedness for a wide range of probable climate change and sea level rise and allow us to adapt to the changes if and when they happen.



Educating a Workforce for Mitigation and Adaptation

MARI engages in the development of transdisciplinary approaches to education related to scientific and societal challenges of climate change, sea level rise, and sustainability in general. To support, maintain and guide sustainable coastal communities, a work force and societal leadership is needed that can communicate across traditional disciplines and societal sectors. To achieve this, a strong transdisciplinary element in education is needed.

Engaging Students in the Challenge

MARI engages students in many different ways in its activities. Linking students to the societal environment is a cornerstone in engaging students. Students are important for the future of our society and engaging them in addressing climate change is crucial for future generations of engaged citizens and a sustainable development.