

Priority Topic 2

ASSESSING AND PREDICTING IMPACT OF ENVIRONMENTAL CHANGE ON COASTAL ECOSYSTEMS



Runoff, groundwater flows, nutrient and sediment loads are all affected by human activity and especially human-induced changes in climate and land use. These may be addressed using a variety of relatively simple analytical tools, including nutrient accounting approaches and large-scale hydrologically based models. The goal is to extend existing approaches either geographically or methodologically, and to permit estimation of nutrient loads, their uncertainty and variation.

The coastal and shelf systems response has been addressed earlier in LOICZ by estimating the metabolism of coastal and shelf ecosystems using the LOICZ budget methodology. This methodology will be refined and extended, specifically in an attempt to also address issues of coastal sustainability and governance. The use of additional modeling approaches will be evaluated to determine whether such approaches are more appropriate to address particular coastal management questions.

This topic encapsulates:

- a) **Examining the changes in loads associated with human activities in coastal watersheds as well as other human-induced effects**
- b) **Examining the response of coastal and shelf ecosystems to these changes.**