FUGRO MARINE GROWTH AND BIOSECURITY

Marine growth, biofouling and non-native species have the potential to cause negative biological, physical and economic effects. This has led to changes in policy, legislation and best practice across the globe. Interest in the effects of marine growth and engineering design has also increased recently.

A proactive approach to management can help reduce the effects, as well as the overall design and operational costs. The need for biosecurity is attributed to species transported outside their natural biogeographic range through pathways such as ballast and bilge water, and hull fouling. These species could have the potential to become invasive, with legal implications and potentially adverse effects on biodiversity, ecosystems, economics and risks to human health.

The increasing awareness of biofouling and marine non-native species has led to changes in policy, legislation and best practice. Emphasis is being placed on those operating in the marine environment to ensure species are not translocated outside their native range.

Fugro services include:

■ Policy and legislation advice
■ Best practice and due diligence
■ Desktop study and document review
■ Biosecurity Risk Assessments
■ Environmental Management Plans
■ Growth plates, species identification, survey and analysis

Dense biofouling of mussels on a man-made structure

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Structures in the marine environment attract a variety of fouling communities

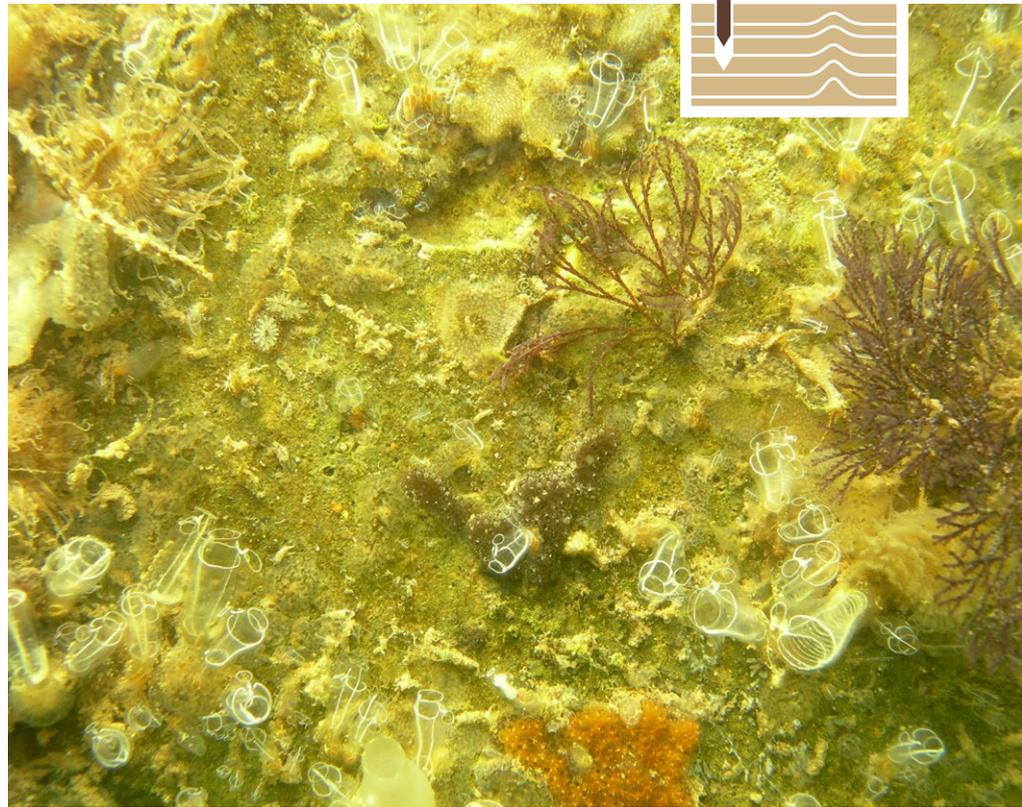## POLICY, LEGISLATION AND BEST PRACTICE

The transport of organisms can occur through pathways such as vessel movement (through ballast water and hull fouling) and submerged or semi-submerged man-made structures (e.g. oil rigs or wind turbines), creating so-called 'stepping stones' that can facilitate the spread of marine non-native species.

Whether the spreading of marine non-native species is carried out wittingly or unwittingly, guidelines and national and international legislation on the introduction of these species still applies. Fugro provides advice and support, as well as ad hoc reporting, to assist clients in following policy, legislation and best practice in order to demonstrate due diligence.

Submerged sea wall biofouled with a variety of organisms.

MARINE GROWTH AND BIOSECURITY REPORTS

Fugro offers bespoke services, and can tailor these to a client's unique set of requirements. Services include, but are not limited to:

- Reviews of literature and reporting for a specific location on an ad hoc basis
- Advice on appropriate mitigation and management of invasive species and fouling communities
- Development of best practice guidance to minimise risk
- Environmental Management Plans detailing adherence to guidance, legislation and best practice
- Biosecurity Risk Assessments, to assess the potential spread of marine non-native species and advise on appropriate mitigation measures

SURVEY AND ANALYSIS

Marine growth/biofouling data can be required for a variety of reasons, including:

- Baseline data to feed into the design of new structures
- Assessment of the effects of marine growth on existing structures
- Input into decommissioning plans
- Assessment of antifouling paints

Marine growth surveys are designed to establish biofouling rates and species composition present on structures and vessels. The data can be used to calculate factors including the amount of drag, loading and potential for corrosion.

Assessment can be achieved through visual inspection or by measuring fouling of control and treatment sites to establish the extent and species composition. Assessment can also be achieved through using fixed settlement plates of similar or identical materials to the structure. If a buoy is used, these plates can be placed at a range of depths, and subsequently retrieved and assessed at suitable intervals. Fugro provides support and advice regarding these survey requirements.

Ballast water and vessel biofouling are examples of marine non-native species translocation pathways.

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Marine growth/biofouling can affect maintenance requirements.

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