



# **Proteus biodiversity data to inform business decisions and good practice application along the project lifecycle**

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## Presentation outline

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- Our global model for Biodiversity and Ecosystem Services (BES) management
  - Approach and timeline
  - Reference framework, partnerships and collaborations
- Use of Proteus data to inform business decisions and good practice application
  - Managing BES issues along the oil and gas project lifecycle
  - Monitoring and managing biodiversity risk
  - Maximizing BES impact prevention in early stages
  - Monitoring, evaluation and continuous improvement
- Key lessons for application within the Arctic



# Approach and timeline of our engagement with BES

- Development of **Eni Upstream BD assessment methodology** based on the EBI guidelines

- Field tested** in sensitive environments: **Italy, Ecuador and Norway**

2003

2008

- Eni Upstream ESHIA Standard**

2010

- HSE-MSG Annex E-F on Biodiversity and Ecosystems**

2013

- Eni Upstream ESHIA for EXP and DEV TGs**
- Eni Upstream TG on BES assessment and management**

2016

- Updated BES Policy approved by Eni's Board and issued on Eni website**

2018



## 2008 - ongoing

- Implementation of targeted **Biodiversity Action Plans** to ensure the delivery of BES impact mitigation

## 2010 - ongoing

- Systematic integration of BES considerations into Eni Upstream global activities** and decision making processes along the project lifecycle supported by HSE IMS technical guidance

## 2011 - ongoing

- Biodiversity risk exposure routinely monitored** by screening new and existing sites for proximity to protected areas, important sites for biodiversity and for the presence of threatened species



## Our BES reference framework



- Principles consistent with the **Convention of Biological Diversity (CBD)** and **Millennium Ecosystem Assessment**



- Guidelines developed by the **Energy and Biodiversity Initiative (EBI)**



- Implementation tools developed by the joint **IPIECA-IOGP Biodiversity and Ecosystem Services Working Group (BESWG)**



- 2012 International Finance Corporation (**IFC**) **Performance Standard 6**
- Good Practices developed by the **Cross-Sector Biodiversity Initiative (CSBI)**



- Eni BES Policy** [https://www.eni.com/docs/it\\_IT/eni-com/sostenibilita/Biodiversita-Eni-e-servizi-ecosistemici.pdf?lnkfrm=serp](https://www.eni.com/docs/it_IT/eni-com/sostenibilita/Biodiversita-Eni-e-servizi-ecosistemici.pdf?lnkfrm=serp)
- Eni HSE Management System Guideline** – dedicated Annex E-F
- Eni Upstream ESHIA Technical Guidelines** – Environmental component
- Eni Upstream Technical Guideline on BES Impact Assessment & Management**



## Partnerships and collaborations

- International NGOs and Institutions leader in biodiversity conservation
- Universities, research institutes academic spin offs
- Joint Industry Programmes and initiatives
  - *E&P Sound and Marine Life, supporting over 100 scientific research activities to understand potential effects of E&P sound on marine life and implement effective mitigation measures*
  - *Cross-Sector Biodiversity Initiative, practical application of the Mitigation Hierarchy to effectively address potential operational impacts*
- Joint BES Working Group of the Oil & Gas industry trade associations

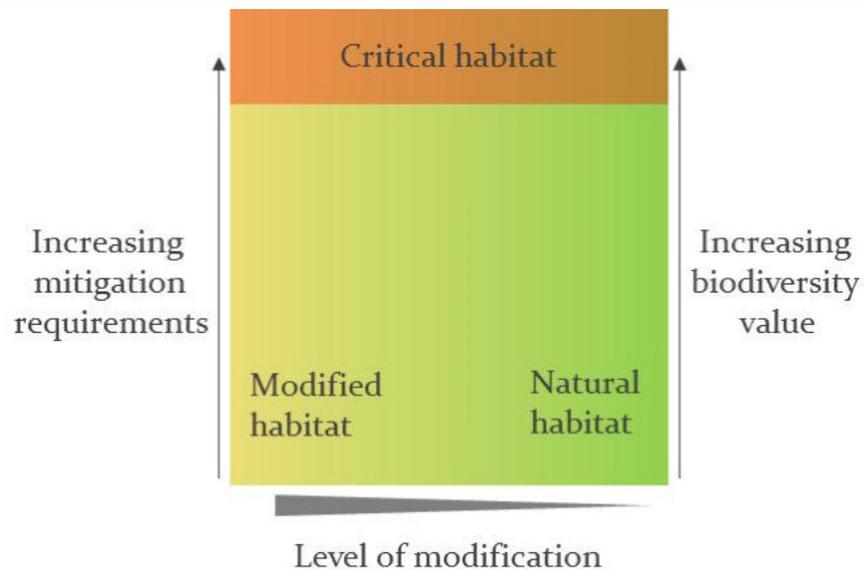


E&P Sound and Marine Life Programme

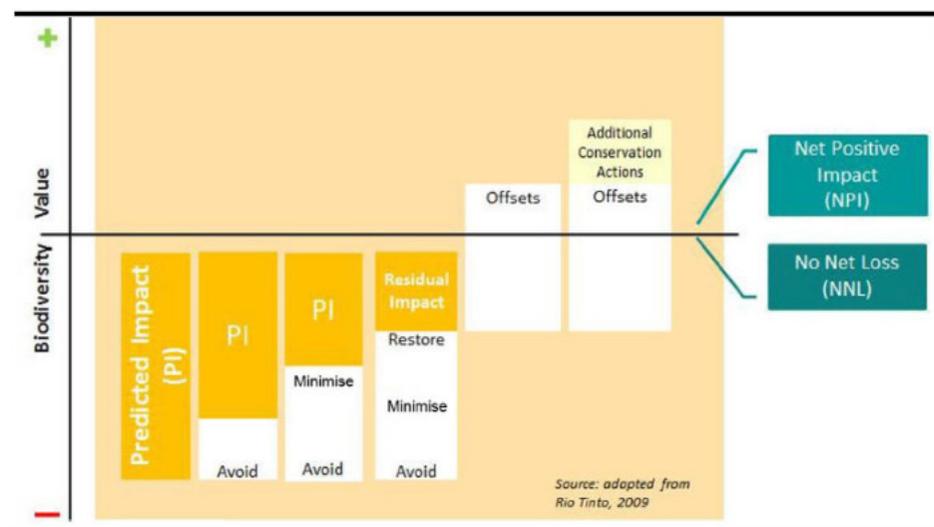
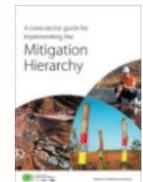


# Key good practices in managing BES issues (1/2)

**IFC Performance Standard 6** identifies sensitive BES features in the area of influence of an O&G project



**CSBI Mitigation Hierarchy** used to manage all potential negative impacts of O&G operations on BES



# Key good practices in managing BES (2/2)

**IPIECA IOGP** International Association of Producers  
Biodiversity and Ecosystem Services  
2016  
**10 TIPS**

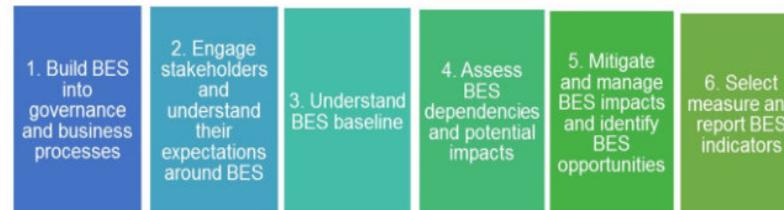
**Managing Biodiversity & Ecosystem Services (BES) issues along the asset lifecycle in any Environment: 10 Tips for Success in the Oil and Gas Industry**

- 1. Begin yesterday:** Allow time for undertaking scoping surveys, planning of multi-season data collection, and potentially developing strategic collaborations to ensure early integration of BES issues in the asset life-cycle. Start to build the capacity to provide BES-related value by ensuring the early identification of risks as well as opportunities.
- 2. Follow the Mitigation Hierarchy:** Systematically apply the Mitigation Hierarchy throughout the asset life-cycle to follow an effective order of preference in addressing all potential impacts on BES of oil and gas operations. The order of preference is Avoid, Reduce, Restore, and, in cases where significant residual biodiversity impacts remain, Offset.
- 3. Consider the big picture:** Understand the big picture and gain a full appreciation of risks and opportunities of operating in a certain area. Recognize the contribution of climate change, external resource exploitation, and other natural and anthropogenic stressors upon BES; these are important background considerations for the assessment of operational impacts and opportunities.
- 4. Locate and assess sensitive areas:** Map the location and assess the significance of protected areas, RTE lines, threatened or endangered species, sensitive habitats, key natural resources and priority ecosystem services. This is critical to the early selection of facility locations and linear infrastructure routing, and an asset's overall BES action planning. This will help identify areas associated with Higher BES values and conservation priorities.
- 5. Consult openly and in a participative manner:** Engage in open and participative dialogue with relevant stakeholders throughout the life of oil and gas operations. This is an effective means of leveraging local ecological knowledge, understanding the value of traditional ecosystems, learning how natural resources are used and avoiding potential resource conflicts.
- 6. Think about whole landscape:** Understand the scale at which different ecosystem processes occur in order to design and undertake effective impact assessments, monitoring programmes and mitigation measures. For large projects, assuming a landscape perspective assures that area-demanding species and broad-scale ecological processes are adequately considered.
- 7. Say "no" to "hitchhikers":** Prevent the introduction and spread of Alien Invasive Species (AIS) based on a robust understanding of the pre-existing ecological conditions. This can avoid large-scale economic consequences, and the need for expensive eradication programmes.
- 8. Understand interdependence:** Conduct early, high level screening of project dependencies to identify risks and potential opportunities related to resource competition. Ecosystem services are relevant both ecologically and socially, for example resources such as land and water may be critical to the operation of oil and gas facilities in addition to their contribution to habitat and community needs.
- 9. Make BES benefits mutual:** Understand social and economic challenges and potential opportunities to find sustainable solutions that integrate ecosystem health with human well-being and economic progress. This will reduce non-technical risks and strengthen the relationship between socio-economic development and conservation goals.
- 10. Monitor, adapt and improve:** Integrate BES considerations into management systems and operational practices to ensure the "plan-do-check-act" cycle is complete and that BES risks are addressed throughout the asset life cycle and across company operations. Respond to learnings and insights from monitoring and reporting activities, adapting and continuously improving BES risk management approaches.

- IPIECA-IOGP BES framework based on 6 interrelated management practices
- Applicable in **any type of operation** and in **any type of natural environment**
- **Practices 1, 2 & 6A** – about incorporation of BES issues into company policy, business processes and dialogue with key stakeholders
- **Practices 3, 4, 5 & 6B** – about incorporation of BES issues into key stages of operational lifecycle (from exploration to decommissioning)

**IPIECA IOGP** International Association of Producers  
Biodiversity and ecosystem services fundamentals  
Guidance document for the oil and gas industry

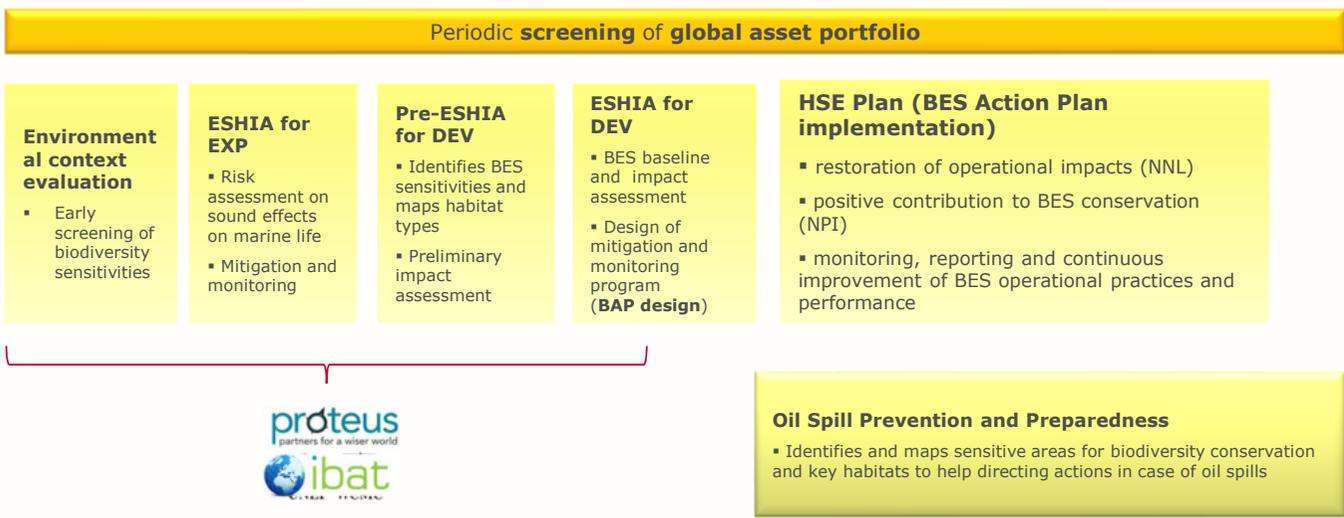
Biodiversity and ecosystem services  
THE GLOBAL OIL AND GAS INDUSTRY ASSOCIATION FOR ENVIRONMENTAL AND SOCIAL ISSUES  
www.ipecica.org



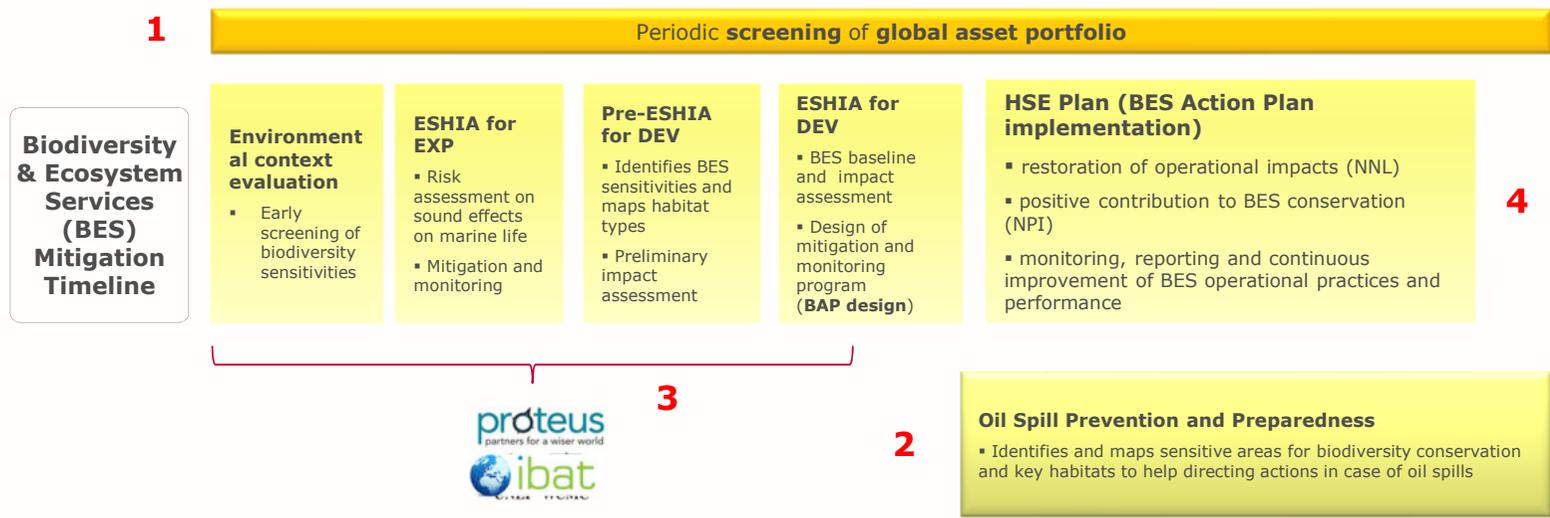
# Managing BES issues along the oil and gas project lifecycle



## Biodiversity & Ecosystem Services (BES) Mitigation Timeline



# Managing BES issues along the oil and gas project lifecycle

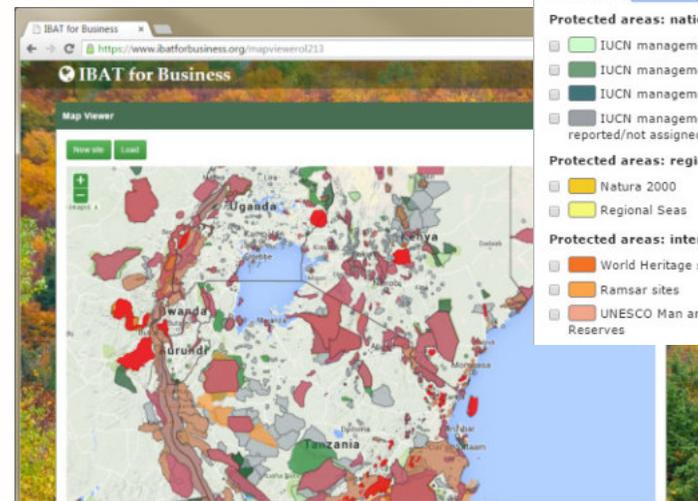
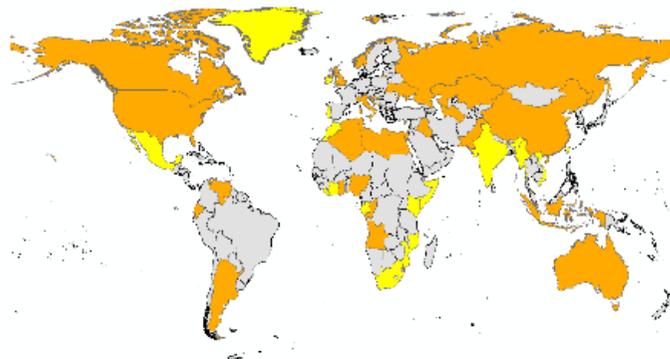
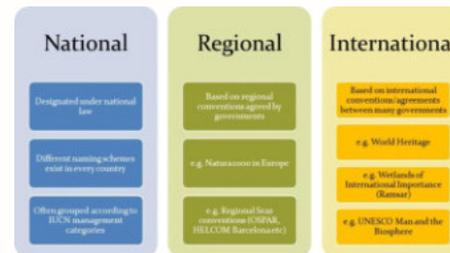


# 1. Monitoring and managing biodiversity risk - screening of global asset portfolio

## Objectives

- Periodic screening of global asset portfolio for proximity to protected areas, important sites for biodiversity and for the presence of threatened species
- Identify priority sites to implement higher resolution BES assessments and mitigation plans (BAPs)
- Set targets for the 4Y HSE Strategic Plan to continuously improve biodiversity risk management

## Biodiversity Data & Tools



**Map Layers**

Base layer: Google Physical

**Protected areas: national-level**

- IUCN management categories Ia, Ib, II
- IUCN management categories III, IV
- IUCN management categories V, VI
- IUCN management categories not reported/not assigned

**Protected areas: regional**

- Natura 2000
- Regional Seas

**Protected areas: international**

- World Heritage sites
- Ramsar sites
- UNESCO Man and the Biosphere Reserves

**Priority sites for biodiversity**

- Key Biodiversity Areas
- Important Bird & Biodiversity Areas
- Alliance for Zero Extinction Sites

**Species**

- Species Grid
- Freshwater Biodiversity

**Regions of conservation importance**

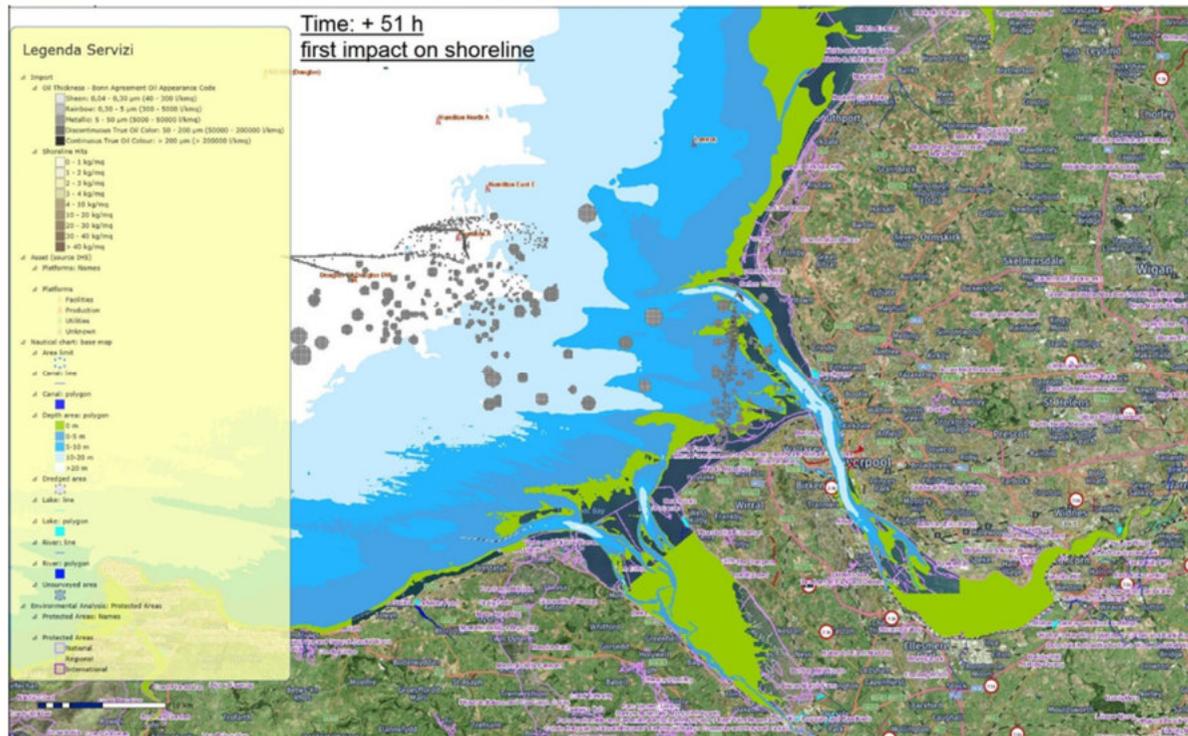
- Endemic Bird Areas
- Biodiversity Hotspots
- High Biodiversity Wilderness Areas

**Completeness**

- KBA Completeness



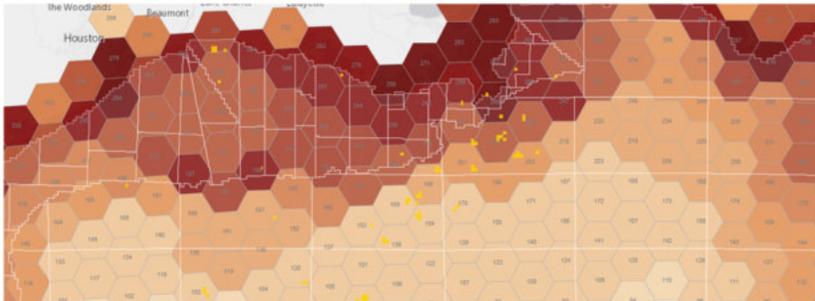
## 2. Monitoring and managing biodiversity risk – oil spill prevention and response



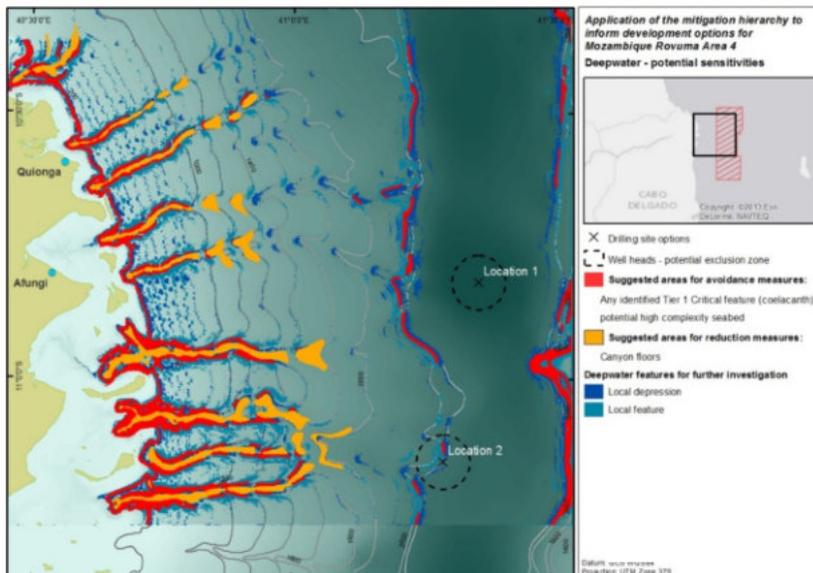
- Simulations are performed to predict the **fate** and **trajectory** of potential oil spills, using the software **OSCAR**
- Results of simulations, considering different times after the potential spill, are **integrated** with **Proteus IBAT** data for assessing potential impact on biodiversity values
- Based on the simulated scenario, an **environmental analysis** is performed highlighting:
  - which **PAs** could be impacted
  - **onshore area(s)** that could be impacted by higher oil concentrations
  - potential overlap with distribution range of **Threatened Species** (IUCN Red List)

### 3. Maximizing BES impact prevention in early stages - BES sensitivity mapping

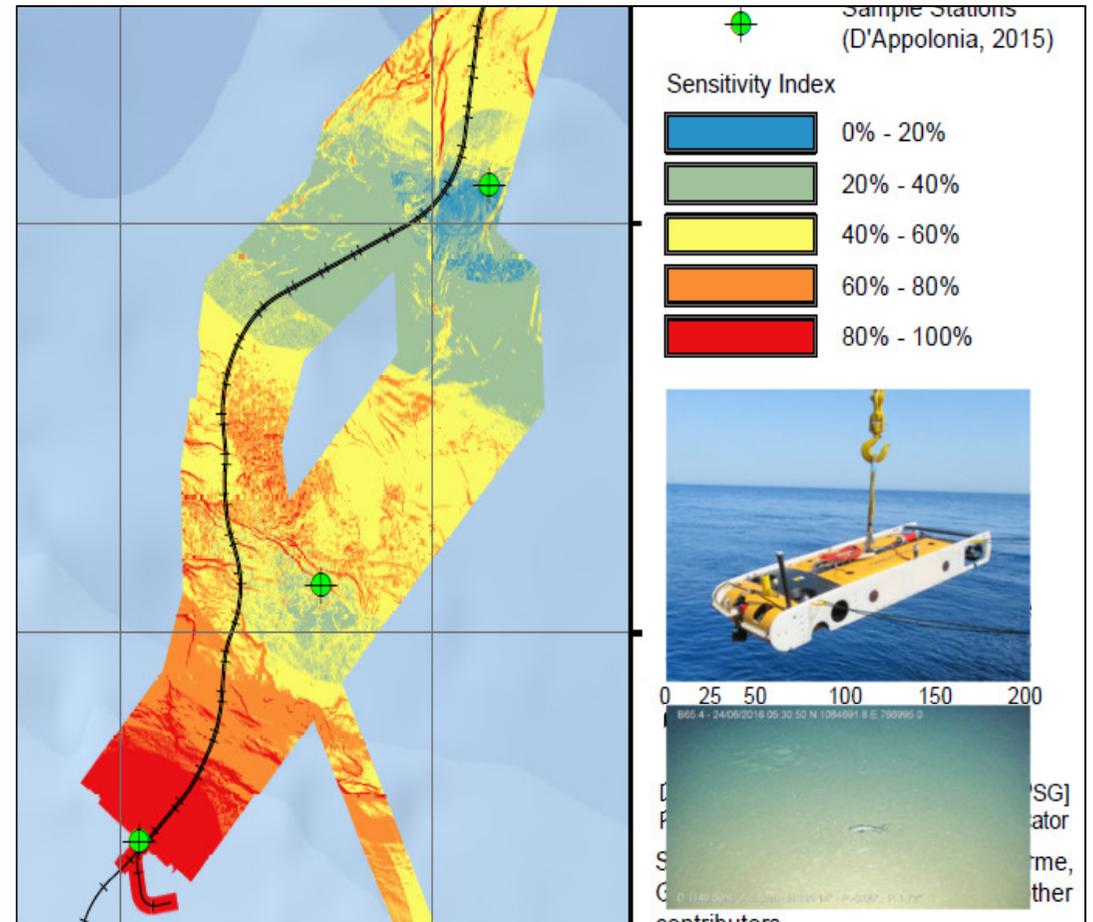
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3.



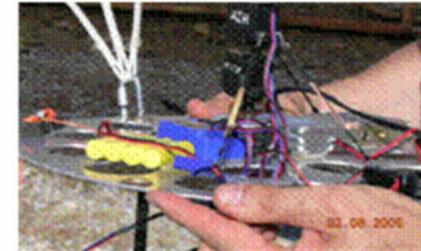
## 4. Monitoring, evaluation and continuous improvement - mitigation plans (BAPs)



2008

2010

2011



## Key Lessons for application within the Arctic

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- The iterative application of the **Mitigation Hierarchy** along oil and gas project lifecycle is critical to minimise restoration requirements and operate towards biodiversity no-net loss
- Recovery speeds in the Arctic demands emphasis on the **preventative steps**
- Opportunities for **impact prevention are maximized** during exploration and development phases, particularly in planning activities, siting and design of facilities and infrastructure
- This ensures **residual impacts** addressed through BAPs during the operation phase are limited, localized and restorable
- **Restoration best practice** developed can be transferred to other operational contexts, including Arctic environments
- **Arctic-focused GIS datasets at regional/national scale are key:**
  - To inform sensitivity maps of Arctic offshore and onshore habitats
  - To focus efforts for the collection of baseline data
  - To select appropriate mitigation/conservation options
  - To select effective marine and terrestrial indicators for Arctic monitoring