


How is the science-based stewardship of the Southern Ocean organized and could it be applied to the Arctic Ocean?

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- Polar Oceans : FACING CHANGES
- 08/05/2019 UNIVERSITE DE LIEGE

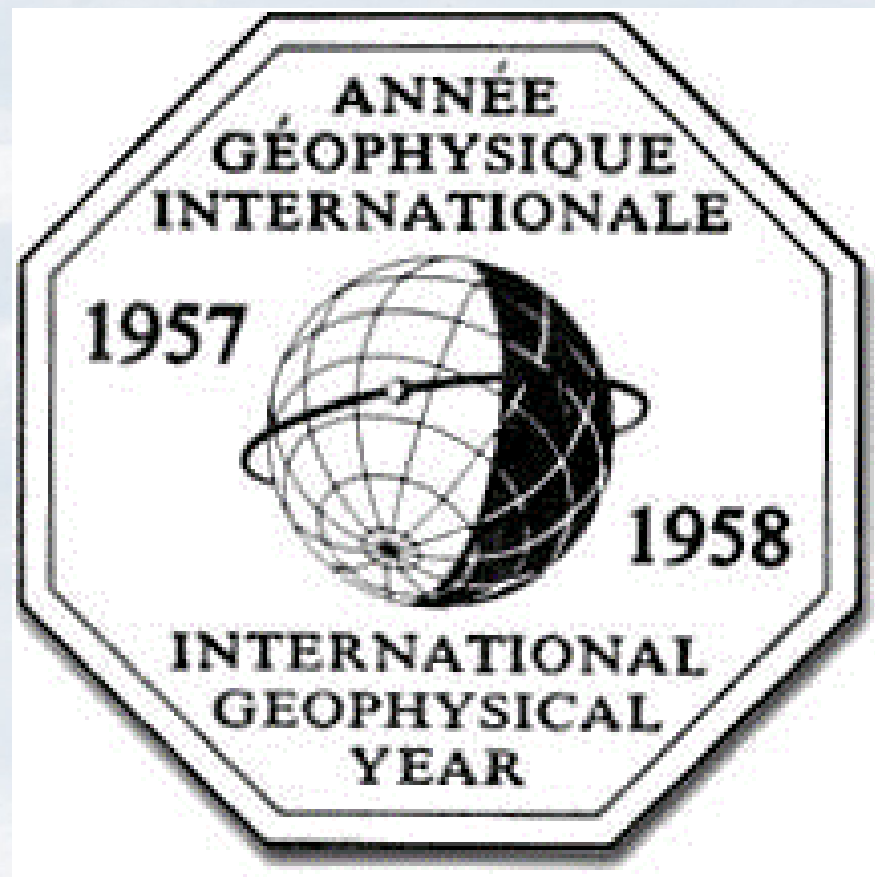
- 
- **The Antarctic Treaty**
 - The additions to the Antarctic Treaty
 - CCAMLR
 - Environmental Protection in practice
 - Challenges for the ATS
 - What about the Arctic?

ENVIRONMENTAL PROTECTION IN ANTARCTICA AND PROTECTED AREAS

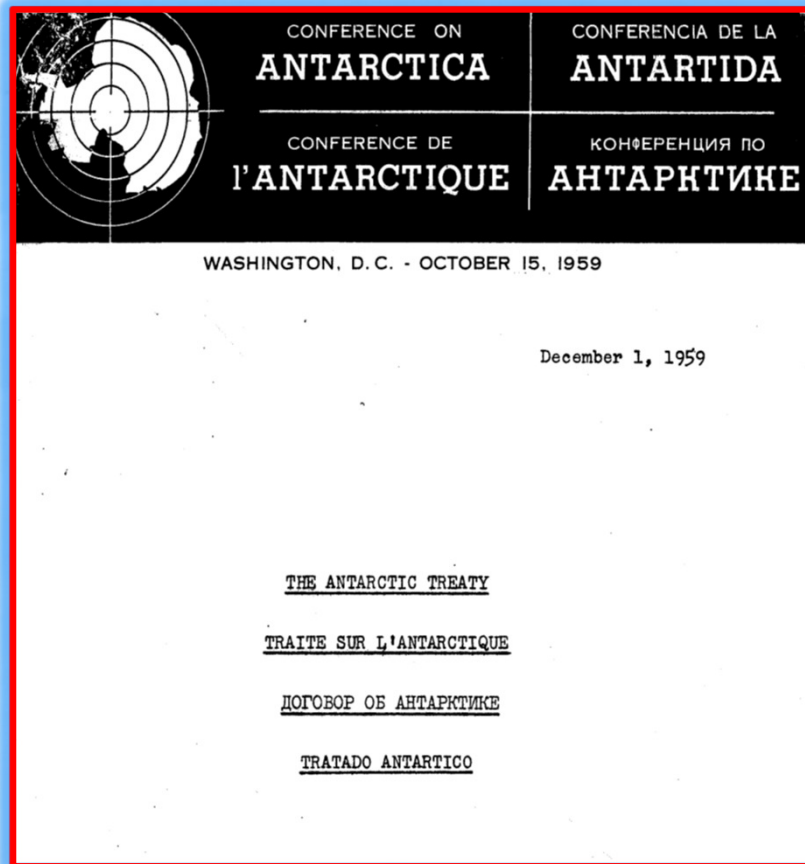
**François André, contact point for Belgium
to the
Committee for Environmental Protection
(CEP) to the Antarctic Treaty**

Polar Oceans : FACING CHANGES
08/05/2019 UNIVERSITE DE LIEGE

The Antarctic treaty 1959



The Antarctic treaty 1959



40TH MEETING OF THE ANTARCTIC TREATY CONSULTATIVE MEETING 2017

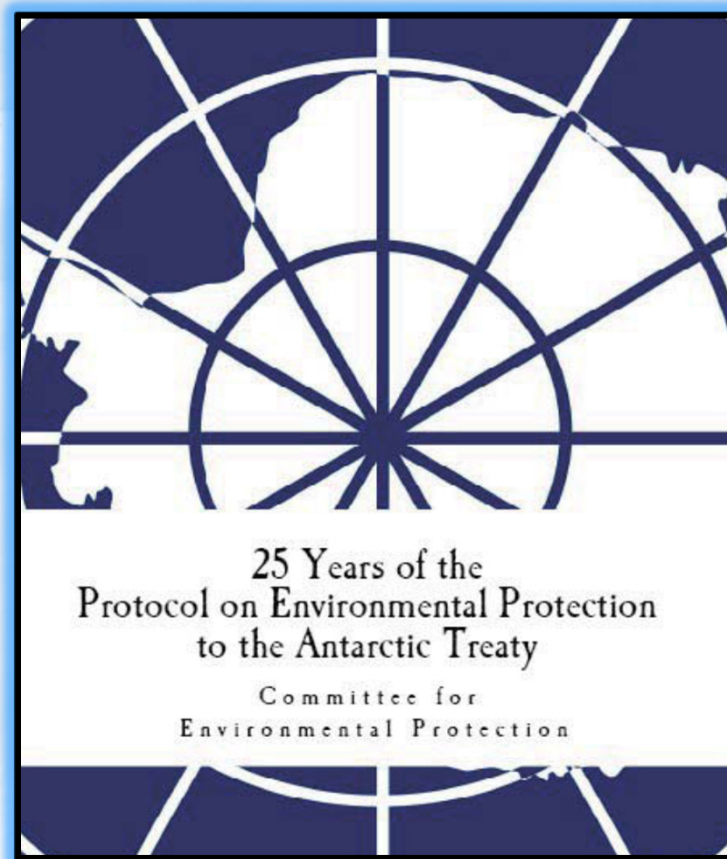
ATCM =
29 members
24 observers



THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY, MADRID 1991



THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY, 1991



20TH MEETING OF THE CEP, 2017



CEP (2019) =
40 members
13 observers

The Committee for Environmental Protection (CEP)

- The Committee for Environmental Protection (CEP) was established by Article 11 of the Environment Protocol.
- Article 12 provides that the Committee's functions are *“to provide advice and formulate recommendations to the Parties in connection with the implementation of this Protocol, including the operation of its Annexes, for consideration at Antarctic Treaty Consultative Meetings .”*

ANNEX V TO THE PROTOCOL : AREA PROTECTION AND MANAGEMENT

- ARTICLE 3 ANTARCTIC SPECIALLY PROTECTED AREAS (ASPA's)
 1. Any area, including any marine area, may be designated as an Antarctic Specially Protected Area to protect outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research.
- ARTICLE 4 ANTARCTIC SPECIALLY MANAGED AREAS (ASMA's)
 1. Any area, including any marine area, where activities are being conducted or may in the future be conducted, may be designated as an Antarctic Specially Managed Area to assist in the planning and co-ordination of activities, avoid possible conflicts, improve cooperation between Parties or minimise environmental impacts.

6 ASMA's and 72 ASPA's

- **Antarctic Protected Areas Database**


www.ats.aq/devPH/apa/ep_protected.aspx?

The screenshot shows a web browser window displaying the Antarctic Protected Areas Database search results. The browser's address bar shows the URL: `aq/devAS/info_mesures_list_filtered.aspx?lang=f&cat=3`. The page has a navigation menu with tabs: ACCUEIL, TRAITÉ SUR L'ANTARCTIQUE, PROTECTION DE L'ENVIRONNEMENT, ECHANGE D'INFORMATIONS, and OUTILS ET RESSOURCES. The current page is titled "Accueil > Outils et Ressources > Base de données du Traité sur l'Antarctique > Search Results".

The search results are displayed in a table with the following columns: RCTA / CPE, année, No., Sujet, and Actuel. The table lists 8 results, each with a checkbox and a magnifying glass icon.

RCTA / CPE	année	No.	Sujet	Actuel
RCTA XXXII - CPE XII Baltimore	2009	D1	Réunion d'experts sur les changements climatiques	<input checked="" type="checkbox"/>
RCTA XXXII - CPE XII Baltimore	2009	R1	Exhorter les Parties à renforcer la protection de l'environnement de l'écosystème antarctique vers le nord jusqu'à la convergence antarctique	<input checked="" type="checkbox"/>
RCTA XXXV - CPA XV Hobart	2012	R1	Renforcement du soutien au Protocole au Traité sur l'Antarctique relatif à la protection de l'environnement	<input checked="" type="checkbox"/>
RCTA XXXV - CPA XV Hobart	2012	R11	Liste de contrôle pour les activités sur le terrain avec des visiteurs	<input checked="" type="checkbox"/>
RCTA XXXVI - CPE XVI Bruxelles	2013	R6	Prospection biologique en Antarctique	<input checked="" type="checkbox"/>
RCTA XXXVII - CPE XVII Brasilia	2014	R1	Stockage et manutention des combustibles	<input checked="" type="checkbox"/>
RCTA XXXVIII - CPA XVIII Sofia	2015	R3	Le Portail des environnements en Antarctique	<input checked="" type="checkbox"/>
RCTA XXXVIII - CPA XVIII Sofia	2015	R5	Zones importantes pour la conservation des oiseaux en Antarctique	<input checked="" type="checkbox"/>

At the bottom of the table, there are navigation links: [Premiere](#), [Antérieur](#), and [Page de Résultat 3 de 3](#).

- 
- The Antarctic Treaty
 - **The additions to the Antarctic Treaty**
 - CCAMLR
 - Environmental Protection in practice
 - Challenges for the ATS
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Evolution of the Antarctic Treaty System

1964: Agreed measures for the **Conservation of Antarctic Fauna and Flora** :

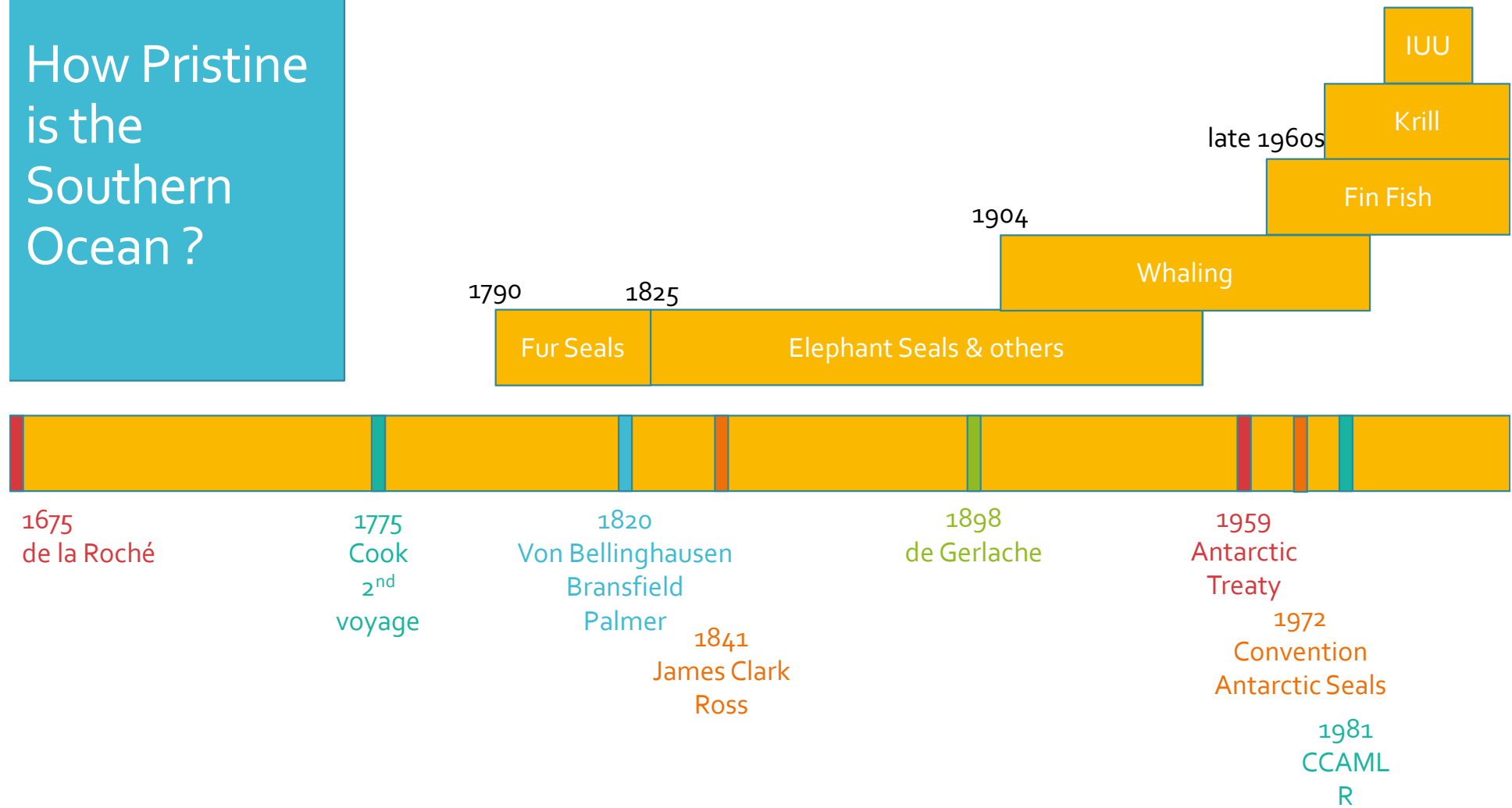
1972: Separate treaty = Convention on the Conservation of **Antarctic Seals** (CCAS)

1982: Separate treaty = Convention on the Conservation of **Marine Living Resources** (CCAMLR)

1991: Protocol on the **Environmental Protection** of the Antarctic Treaty

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How Pristine is the Southern Ocean ?



CCAMLR

- international commission
- established in 1982
- an ecosystem-based management approach
- Based on the best available scientific information
- measures that determine the use of marine living resources in the Antarctic.
- 25 Members
- 11 countries have acceded to the Convention
- Consensus

Structure

Scientific Committee

Working Groups

Ecosystem Monitoring and
Management (WG-EMM)

Fish Stock Assessment (WG-FSA)

Statistics, Assessments and Modelling
(WG-SAM)

Incidental Mortality Associated with
Fishing (WG-IMAF)

Acoustics, Survey and Analysis
Methods (SG-ASAM)

Commission

Standing Committee on
Implementation and Compliance

Standing Committee on
Administration and Finance

Secretariat

1
Dec

30
Nov



Fishing Season



WG



S
C

C

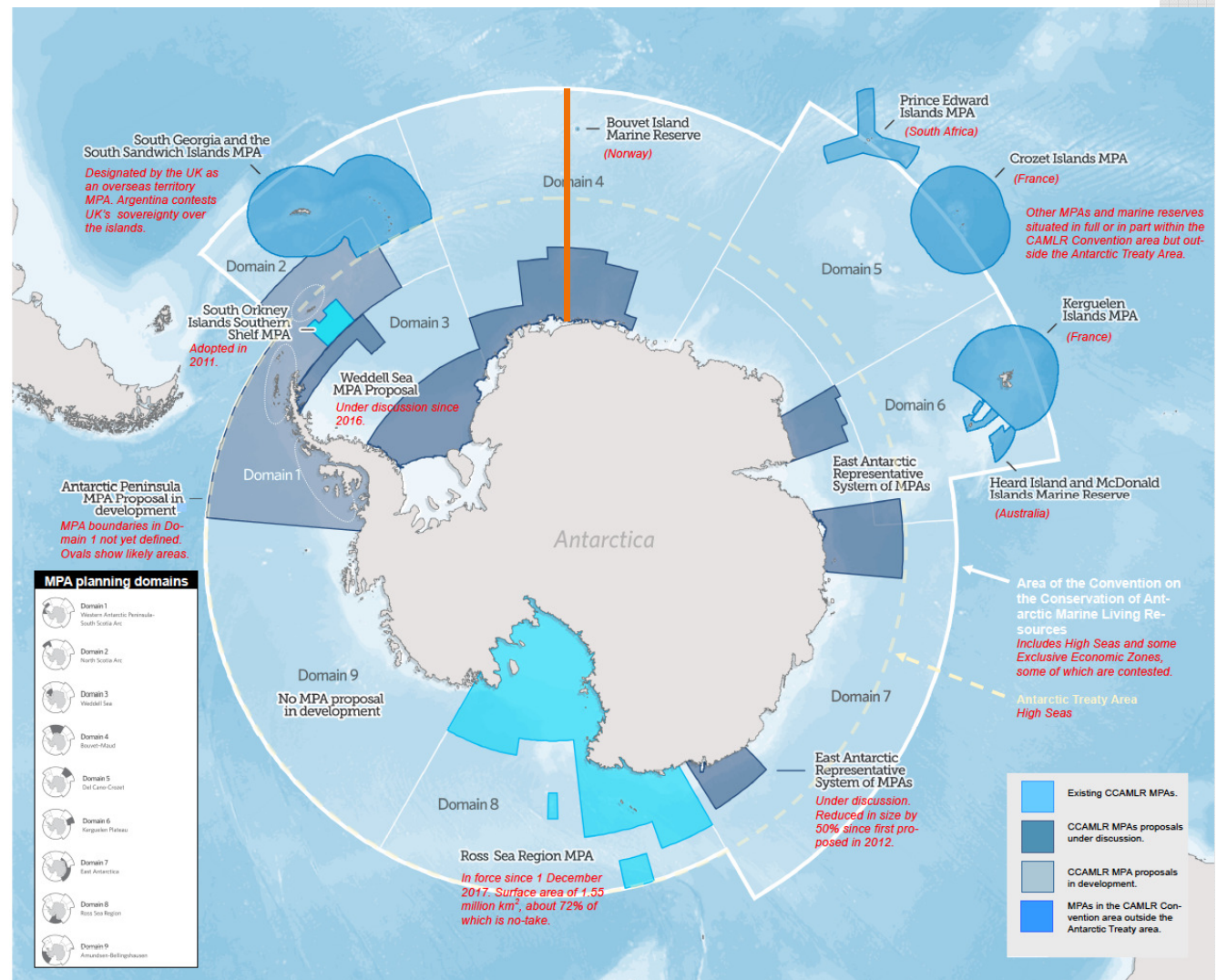


E-groups

Opposing views


- CCAMLR is a fisheries convention
 - Fisheries should only be limited when negative effects have been shown
 - What is the best available Science?
- CCAMLR is a conservation convention
 - Fisheries should only be allowed if they have proven no impact

A network of Representative MPA



Contribute Get in Touch

- Let me know about your Research!!!
- Dr. Anton Van de Putte
- RBINS & KULeuven
- avandeputte@naturalsciences.be
- Stephanie Langerock
- FOD Environment

- 
- An aerial photograph of a vast, snow-covered mountain range. The peaks and ridges are covered in white snow, with some darker, rocky areas visible in the valleys and lower slopes. The lighting is soft, creating a serene and cold atmosphere.
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Annexes added to the Environmental Protocol

Annex 1: Evaluation of the environmental impact

Annex 2: Conservation of fauna and flora

Annexe 3 : Elimination and management of the wastes

Annexe 4: Prevention of marine pollution

Annexe 5: Area protection and management

Annexe 6: Liability arising from environmental emergencies




Annual meetings of the **Committee on Environmental Protection**, that makes proposals to the **Antarctic Treaty Consultative Meeting**

Decisions taken by consensus (slow process)

Measures are mandatory when approved

Resolutions are hortatory

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- > Faune et flore
- > Gestion des déchets
- > Pollution marine
- > Zones protégées
- > Responsabilité
- > CPE
- Autorités et contacts
- Règles et lignes directrices
- Activités intersessions

Base de données des zones protégées de l'Antarctique

Type	ZSPA
Numéro	
Nom	
Promoteur	Toutes
Recherche	

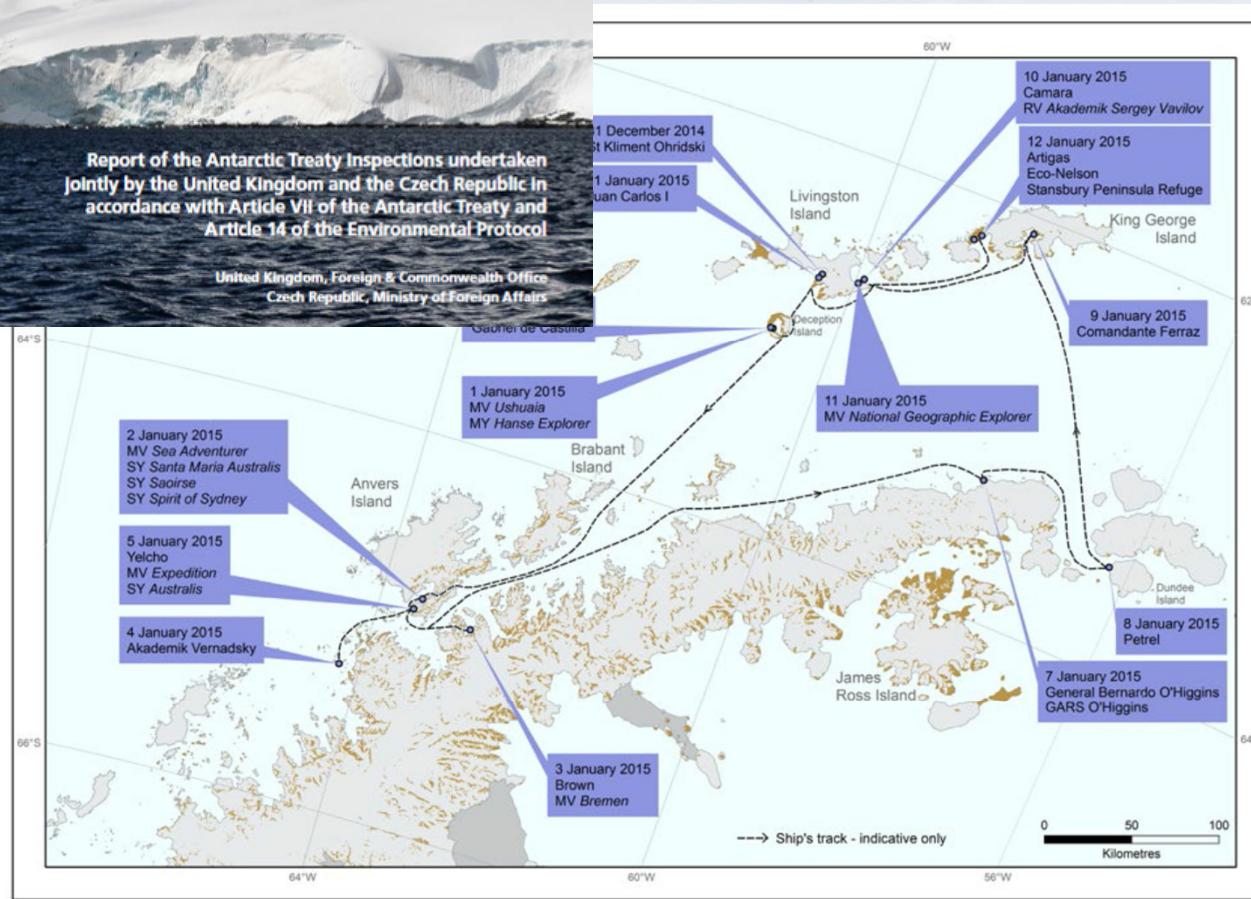
Type	Numéro	Nom	Promoteur	Plan de gestion	Détails
ZSPA	151	Lions Rump, Ile du Roi Georges, Shetland du Sud	Pologne		
ZSPA	152	Détroit de Western Bransfield	Etats-Unis d'Amerique		
ZSPA	153	Baie Eastern Dallmann	Etats-Unis d'Amerique		
ZSPA	154	Baie Botany, Cap Géologie, Terre Victoria	Nouvelle Zélande		
ZSPA	155	Cap Evans, île de Ross	Nouvelle Zélande		
ZSPA	156	Baie Lewis, Mont Erebus, Île Ross	Nouvelle Zélande		
ZSPA	157	Baie Backdoor, cap Royds, île de Ross	Nouvelle Zélande		
ZSPA	158	Pointe Hut, île de Ross	Nouvelle Zélande		
ZSPA	159	Cap Adare, côte Borchgrevink	Nouvelle Zélande		
ZSPA	160	Îles Frazier, îles Windmill, Terre Wilkes, Antarctique de l'Est	Australie		
ZSPA	161	Baie de Terra Nova, Mer de Ross	Italie		
ZSPA	162	Huttes de Mawson, cap Denison, baie du Commonwealth, terre de George V, Antarctique oriental	Australie		
ZSPA	163	Glacier Dakshin Gangotri, terre de la reine Maud	Inde		

Management plans of protected zones

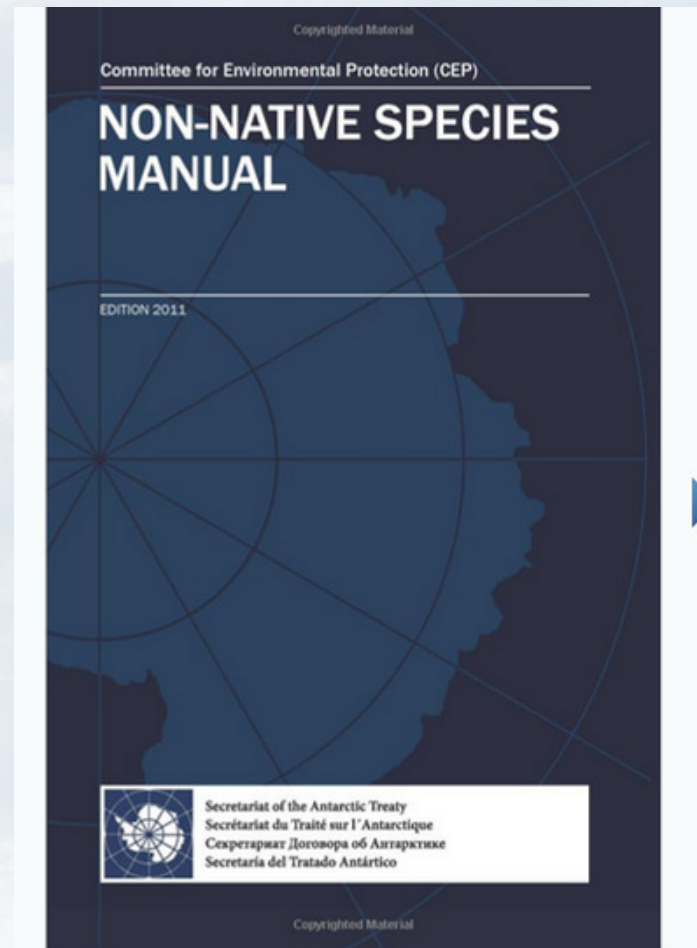
Liste des documents

Réunion	No.	Points de l'ordre du jour	Titre	Soumis par	A	F	R	E	Pièces jointes
RCTA XXXVIII CPA XVIII	WP001	CPE 9a	Plan de gestion révisé pour la zone spécialement protégée de l'Antarctique n° 106 CAP HALLETT, TERRE VICTORIA DU NORD, MER DE ROSS	Etats-Unis d'Amérique	X	X	X	X	ASPA 106 Map 1 ASPA 106 Map 2 ASPA 106 Map 3 ASPA 106 Map 4 ZSPA 106 Plan de gestion révisé
RCTA XXXVIII CPA XVIII	WP002	CPE 9a	Plan de gestion révisé pour la zone spécialement protégée de l'Antarctique no 119 vallée Davis et étang Forlidas massif Dufek, montagnes Pensacola	Etats-Unis d'Amérique	X	X	X	X	ASPA 119 Map 1 ASPA 119 Map 2 ZSPA no 119 Plan de gestion révisé
RCTA XXXVIII CPA XVIII	WP003	CPE 9a	Plan de gestion révisé pour la zone spécialement protégée de l'Antarctique n° 152 Détroit de Western Bransfield	Etats-Unis d'Amérique	X	X	X	X	ASPA 152 Map 1 ZSPA No 152 Plan de gestion révisé
RCTA XXXVIII CPA XVIII	WP004	CPE 9a	Plan de gestion révisé pour la zone spécialement protégée de l'Antarctique n° 153 Baie Eastern Dallmann	Etats-Unis d'Amérique	X	X	X	X	ASPA 153 Map 1 Plan de gestion révisé de la ZSPA n° 153
RCTA XXXVIII	WP005	CPE 3	Plan de travail quinquennal adopté lors de la 17e réunion du Comité pour la protection de	Australie	X	X	X	X	Plan de travail quinquennal du

Inspections of stations, ships, installations



Measures to avoid introduction of **non-native species**, a growing danger due to the increase of the human presence (introductions) and the climate warming



Information Exchange

Article VII of the Treaty requires each Party to freely **exchange information about its activities**

The Environment Protocol of 1991 added important information exchange obligations on environmental matters.

The information to be submitted can be divided into three categories:

- **Pre-season information**
- **Annual report**
- **Permanent information**

Under direction of the ATCM the Secretariat has developed the **Electronic Information Exchange System (EIES)** as a central repository for this information

www.ats.aq

Easy database on Internet

.aq/devAS/info_measures_list_filtered.aspx?lang=f&cat=3

» Accueil > Outils et Ressources > Base de données du Traité sur l'Antarctique > Search Results

Search Results

RCTA de à

Catégorie Thème

Recherche texte ☐ Seule la force

RCTA / CPE	année	No.	Sujet	Actuel	
RCTA XXXII - CPE XII Baltimore	2009	D1	Réunion d'experts sur les changements climatiques	✓	
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RCTA XXXV - CPA XV Hobart	2012	R1	Renforcement du soutien au Protocole au Traité sur l'Antarctique relatif à la protection de l'environnement	✓	
RCTA XXXV - CPA XV Hobart	2012	R11	Liste de contrôle pour les activités sur le terrain avec des visiteurs	✓	
RCTA XXXVI - CPE XVI Bruxelles	2013	R6	Prospection biologique en Antarctique	✓	
RCTA XXXVII - CPE XVII Brasilia	2014	R1	Stockage et manutention des combustibles	✓	
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Première Antérieur Page de Résultat 3 de 3

Where to obtain permits to perform activities in Antarctica?

Parties implement the Antarctic Treaty and its Environmental Protocol into the **domestic law**. National legislations establish a **permitting regime** for activities in Antarctica, and eligible visitors are required to obtain the necessary permits in advance from the relevant Competent Authority of each Antarctic Treaty Party.

The Competent Authority and contact details for each Party are listed below.

Find National Competent Authorities by Country

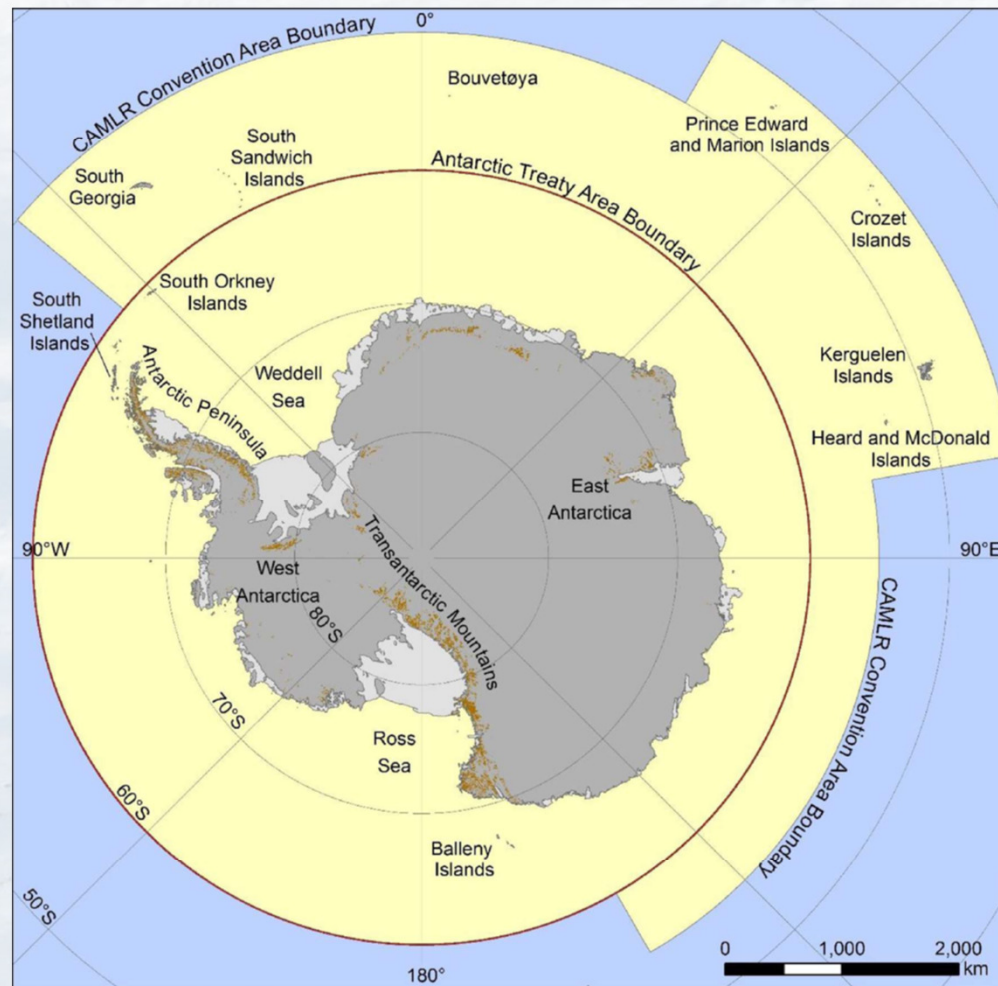
Belgium ▼

Belgium

FPS Health, Food Chain Safety & Environment, DG Environment
Place Victor Horta 40/10
Brussels , 1060
www.health.belgium.be

Autorité Nationale Compétente Pour Le Traité Sur L'Antarctique


Overlap between the Antarctic Treaty and CCAMLR Convention areas



CCAMLR gets involved when CEP takes decisions about marine areas

Decision 9 (2004) —: MARINE PROTECTED AREAS AND OTHER AREAS OF INTEREST TO CCAMLR

- 1) Draft management plans that contain marine areas which require a prior approval of CCAMLR are those: a) in which there **is actual harvesting or potential capability of harvesting** of marine living resources which might be affected by site designation; or b) for which there are provisions specified in a draft management plan which might **prevent or restrict CCAMLR related activities**.
- 2) That proposals for designations of Antarctic Specially Protected Areas or Antarctic Specially Managed Areas which meet the criteria of Paragraph 1 above shall **be submitted to CCAMLR** for its consideration before any decision is taken on the proposal relating to marine areas.
- 3) Furthermore that any other proposed designations which might have **implications for CCAMLR Ecosystem Monitoring Programme (CEMP)** sites shall also be **submitted to CCAMLR** for its consideration.

- 
- An aerial photograph of a vast, snow-covered mountain range. The peaks and ridges are covered in white snow, with some rocky outcrops visible. The valleys between the mountains are filled with snow and some sparse vegetation. The overall scene is a high-altitude, alpine environment.
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Challenges for ATS

Implémenter les mesures et ratifier les Annexes plus **rapidement**

Avoir des **inspections** régulières qui s'assurent du bon respect et promeuvent les 'bonnes pratiques'.

Améliorer le **système d'échange d'informations** et que tous les pays introduisent leurs données à temps

Challenges for ATS

1) Regulation of **commercial tourism**.

There is no global system, with a legal value to avoid mass tourism, the use of non-compliant ships and ground infrastructures.

51,707 tourists in 2018-19

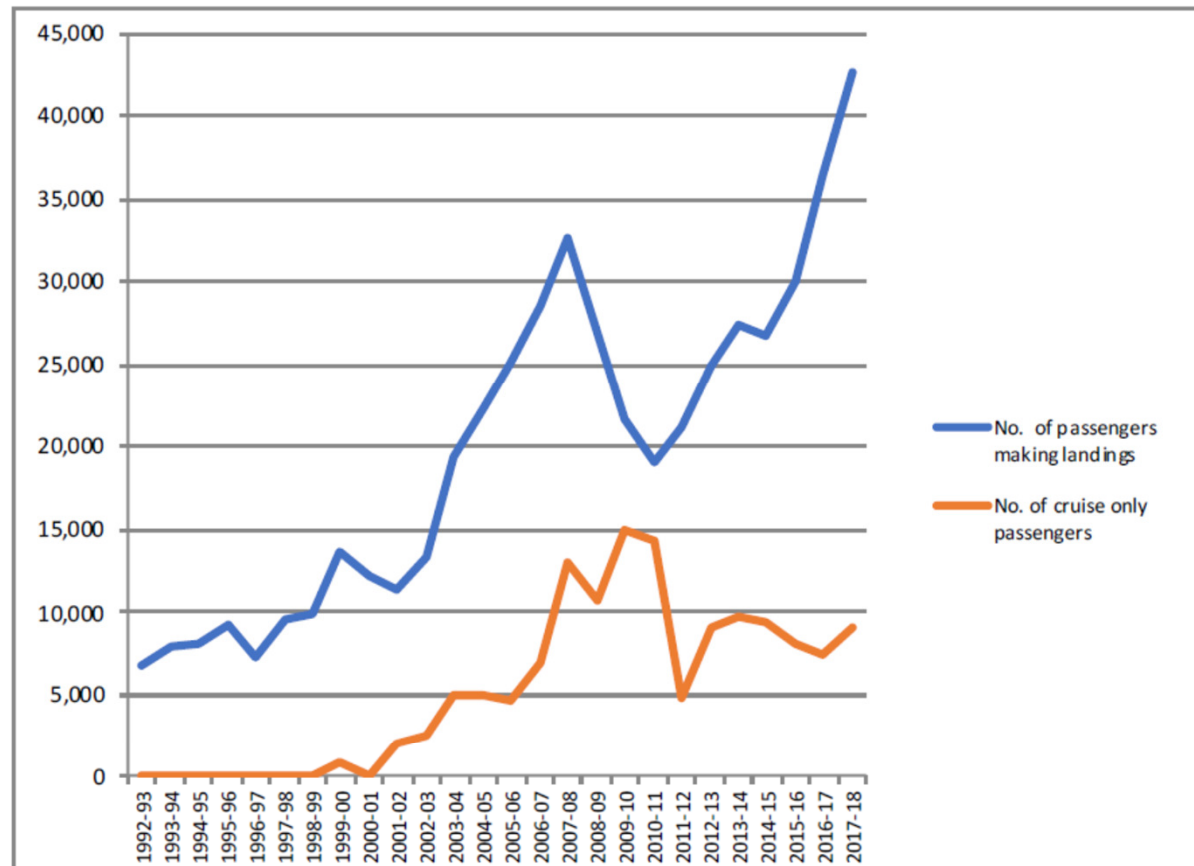
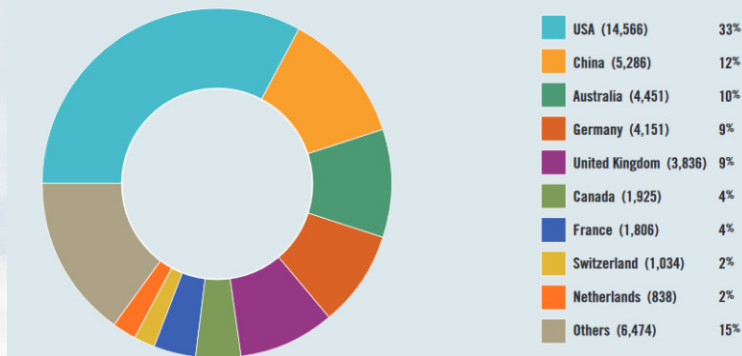


Figure 1. Trend in passenger landings and cruise-only passengers since the 1992/93 season.

- Cruises, more and more popular, are managed at 95 % by [the International Association of Antarctic Tour operators.](#) This international association, created in 1991, has 115 members.

2016 – 2017 Visitors by Nationality



- In 2016, 40 000 tourists were accompanied by 20 086 navigating staff and 2 455 marine officers, nécessaires à l'encadrement et au bon déroulement de ces voyages.



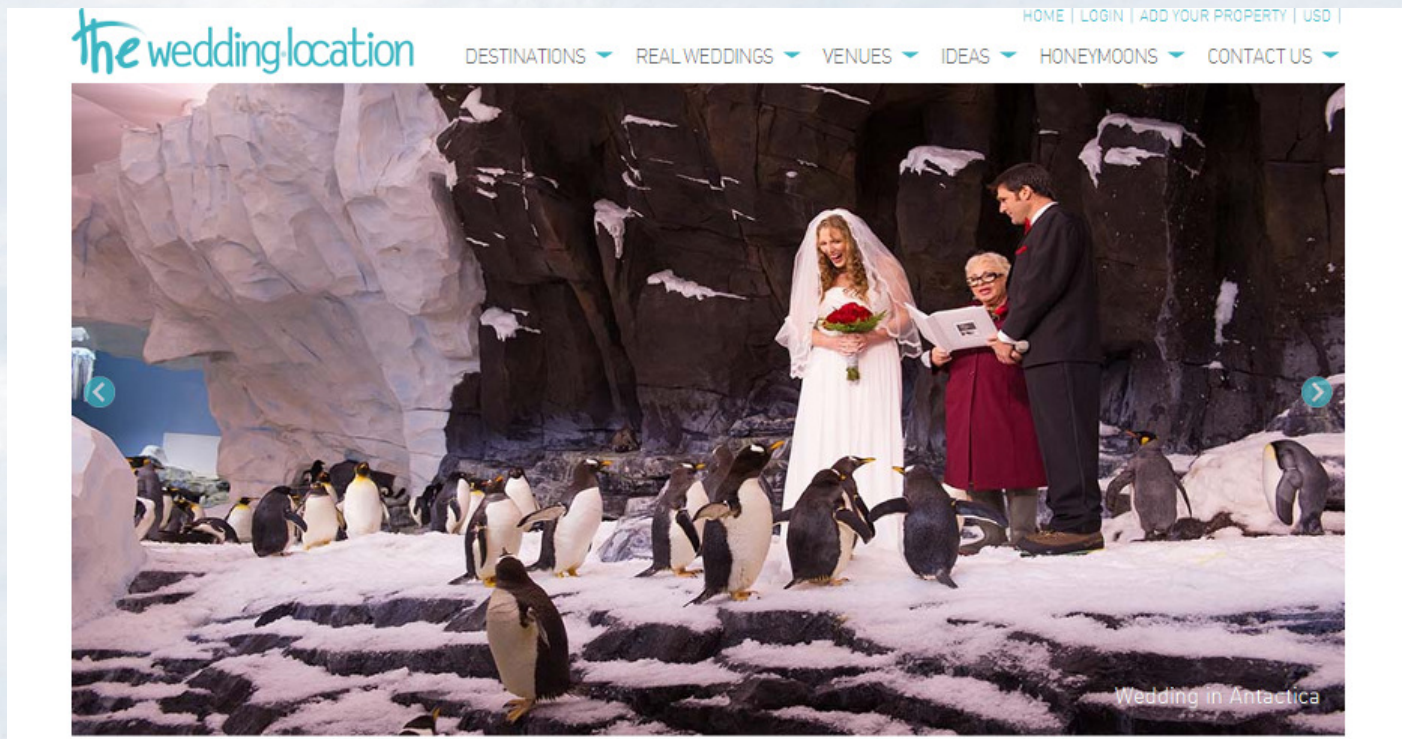
2009: ATCM Baltimore (Maryland), ships with more than 500 passengers cannot moor and number of tourists present simultaneously in one site cannot exceed 100 personnes.

Novembre 2007, the M/V Explorer, with 154 passengers with a Liberian flag, has hit an iceberg. All passengers were saved, but the sunken ship lies at 1 300 m depth. She contained about 200 m³ fuel



Cinq rescue centers, situated in South Africa, Argentina, Australia, Chile and New Zealand but nothing is prepared for a ecological catastrophe of large amplitude.

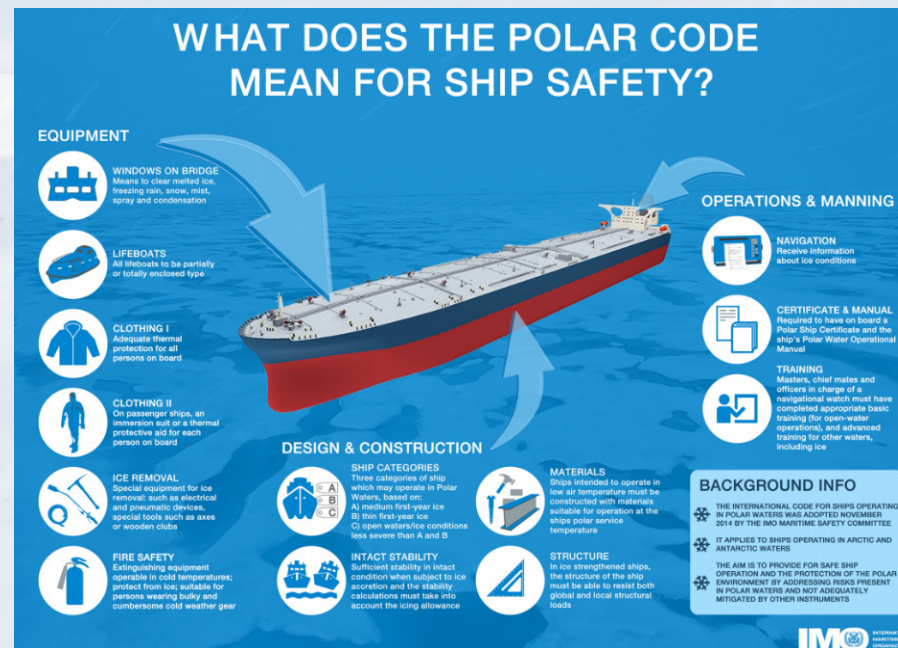
Wedding in Antarctica...



Défis

Collaborate with International Maritime Organisation (IMO) for the **Code Polar Code** for all vessels operating in Antarctica, to implement standards adapted for ice :

2015:



HOW THE **POLAR** CODE PROTECTS THE ENVIRONMENT

OIL



DISCHARGES
Discharge into the sea of oil or oily mixtures from any ship is prohibited



STRUCTURE
Double hull and double bottom required for all oil tankers, including those less than 5,000dwt (A/B ships constructed on or after 1 January 2017)



HEAVY FUEL OIL
Heavy fuel oil is banned in the Antarctic (under MARPOL). Ships are encouraged not to use or carry heavy fuel oil in the Arctic



LUBRICANTS
Consider using non-toxic biodegradable lubricants or water-based systems in lubricated components outside the underwater hull with direct seawater interfaces

INVASIVE SPECIES



INVASIVE AQUATIC SPECIES
Measures to be taken to minimize the risk of invasive aquatic species through ships' ballast water and biofouling

SEWAGE



DISCHARGES I
No discharge of sewage in polar waters allowed (except under specific circumstances)



TREATMENT PLANTS
Discharge is permitted if ship has an approved sewage treatment plant, and discharges treated sewage as far as practicable from the nearest land, any fast ice, ice shelf, or areas of specified ice concentration



DISCHARGES II
• Sewage not comminuted or disinfected can be discharged at a distance of more than 12nm from any ice shelf or fast ice
• Comminuted and disinfected sewage can be discharged more than 3nm from any ice shelf or fast ice

GARBAGE



PLASTICS
All disposal of plastics prohibited (under MARPOL)



FOOD WASTES I
Discharge of food wastes onto the ice is prohibited



FOOD WASTES II
Food wastes which have been comminuted or ground (no greater than 25mm) can be discharged only when ship is not less than 12nm from the nearest land, nearest ice shelf, or nearest fast ice



ANIMAL CARCASSES
Discharge of animal carcasses is prohibited



CARGO RESIDUES
Cargo residues, cleaning agents or additives in hold washing water may only be discharged if: they are not harmful to the marine environment; both departure and destination ports are within Arctic waters; and there are no adequate reception facilities at those ports. The same requirements apply to Antarctic area under MARPOL

BACKGROUND INFO

- THE INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS WILL ENTER INTO FORCE ON 1 JANUARY 2017
- IT APPLIES TO SHIPS OPERATING IN ARCTIC AND ANTARCTIC WATERS; ADDITIONAL TO EXISTING MARPOL REQUIREMENTS
- IT PROVIDES FOR SAFE SHIP OPERATION AND PROTECTS THE ENVIRONMENT BY ADDRESSING THE UNIQUE RISKS PRESENT IN POLAR WATERS BUT NOT COVERED BY OTHER INSTRUMENTS

DEFINITIONS



SHIP CATEGORIES
Three categories of ship designed to operate in polar waters in:
A) at least medium first-year ice
B) at least thin first-year ice
C) open waters/ice conditions less severe than A and B



FAST ICE: Sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs



ICE SHELF: A floating ice sheet of considerable thickness showing 2 to 50m or more above sea-level, attached to the coast

CHEMICALS



DISCHARGES
Discharge of noxious liquid substances (NLS) or mixtures containing NLS is prohibited in polar waters

IMO INTERNATIONAL MARITIME ORGANIZATION

Challenges

Create a representative system of large marine protected areas. 11 zones were selected by CCAMLR and the CEP and a first deadline fixed at 2012.

There is opposition from a few countries that want to continue to fish everywhere.

Stop Illegal fishing – a profitable business for a number of companies and ships, that collect about 25% of the legal fishing.



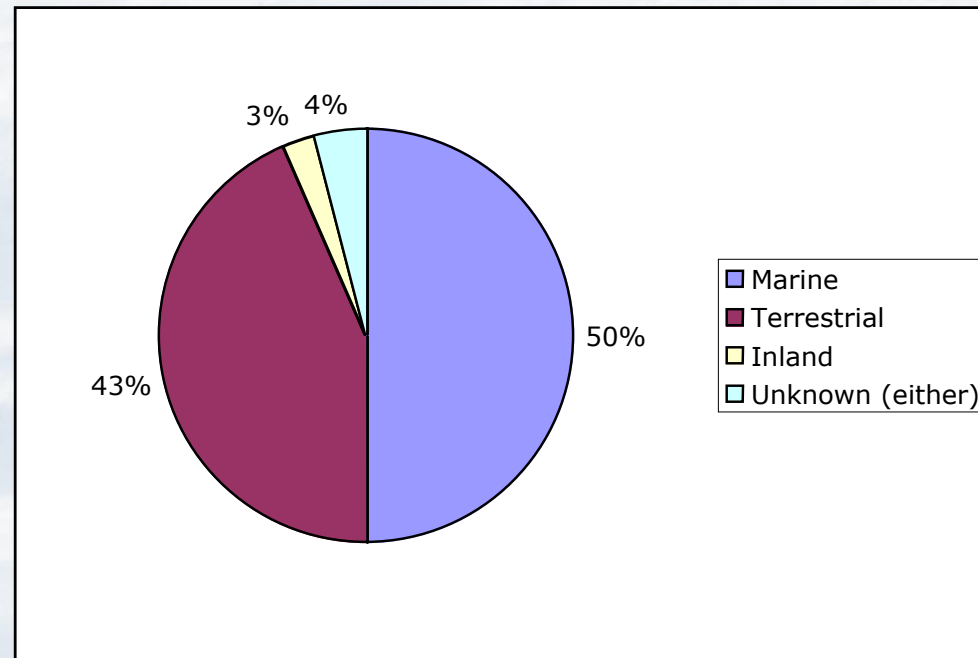
Crew of the Kunlun illegally fishing toothfish in Southern Ocean

Greenpeace

Challenges

Develop a framework for **bioprospection** of biological and genetic resources, that represent a growing commercial activity.

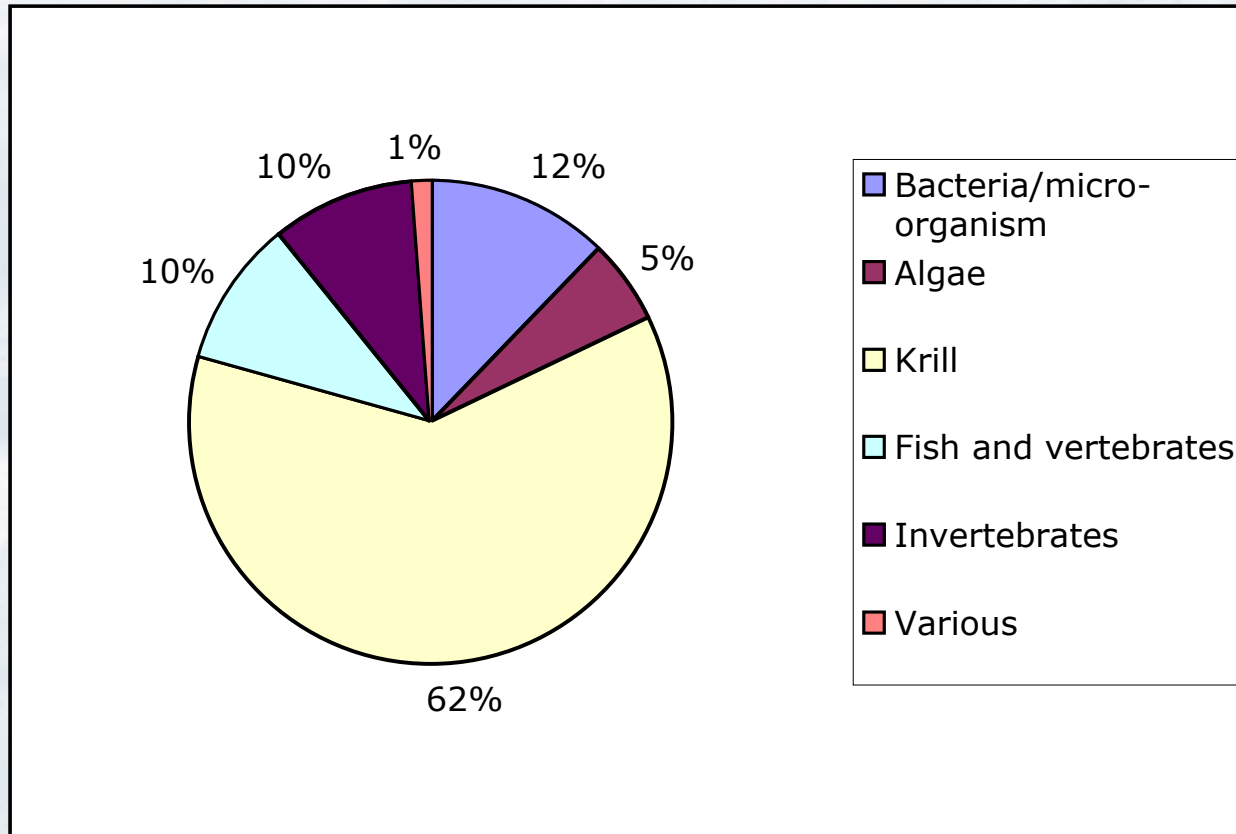
UNU/IAS database on bioprospection in Antarctica



Breakdown of patents or commercial products from Antarctica for each biome.

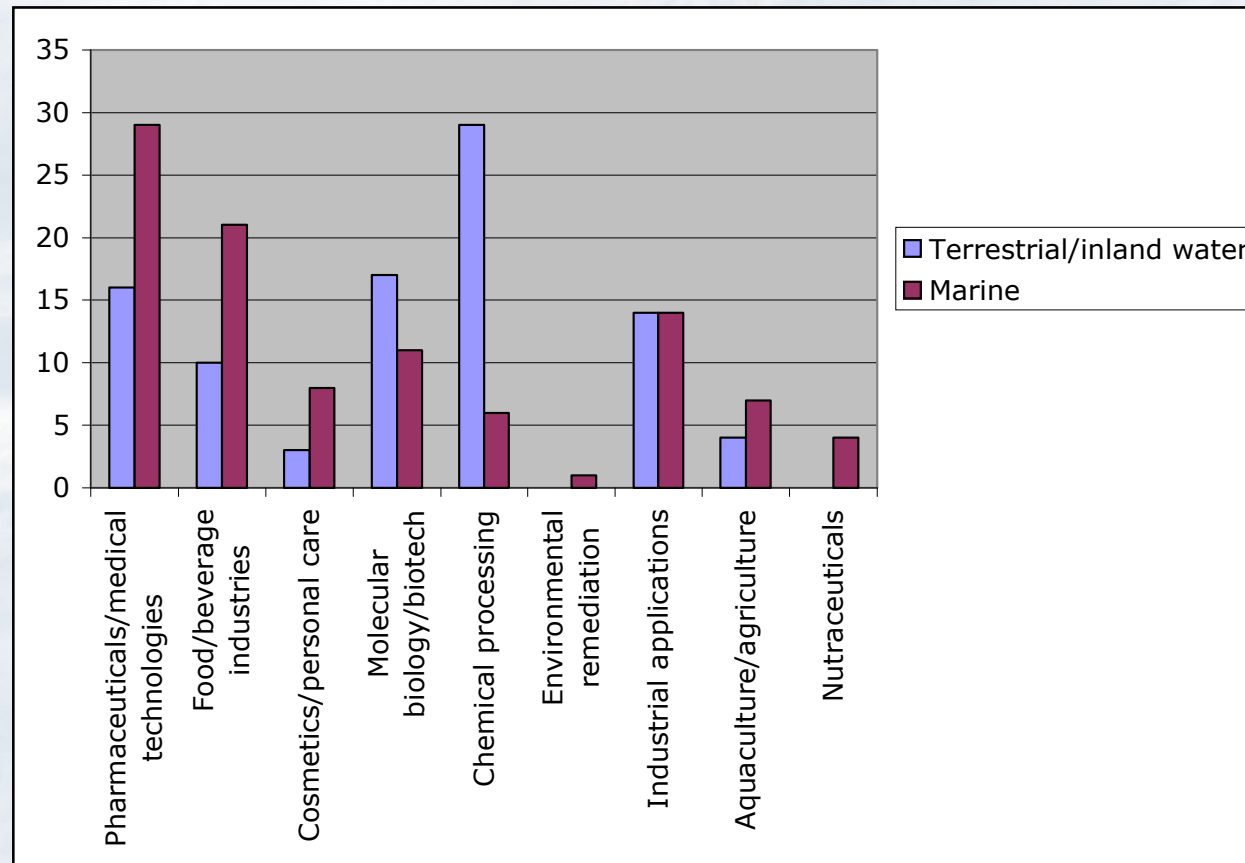
Source: UNU & Federal public service Health, Food chain safety and Environment, as contribution to the discussion of the Committee of Environmental Protection of the Antarctic Treaty on bioprospecting (2009)

Krill represents 62% of source organisms for marine bioprospecting in Antarctica



Source: UNU & Federal public service Health, Food chain safety and Environment, as contribution to the discussion of the Committee of Environmental Protection of the Antarctic Treaty on bioprospecting (2009)

Marine genetic resources: mainly for pharmaceutical/medical uses, and food/beverage industry



Comparison of uses of marine and terrestrial/inland water genetic resources

Source: UNU & Federal public service Health, Food chain safety and Environment, as contribution to the discussion of the Committee of Environmental Protection of the Antarctic Treaty on bioprospecting (2009)



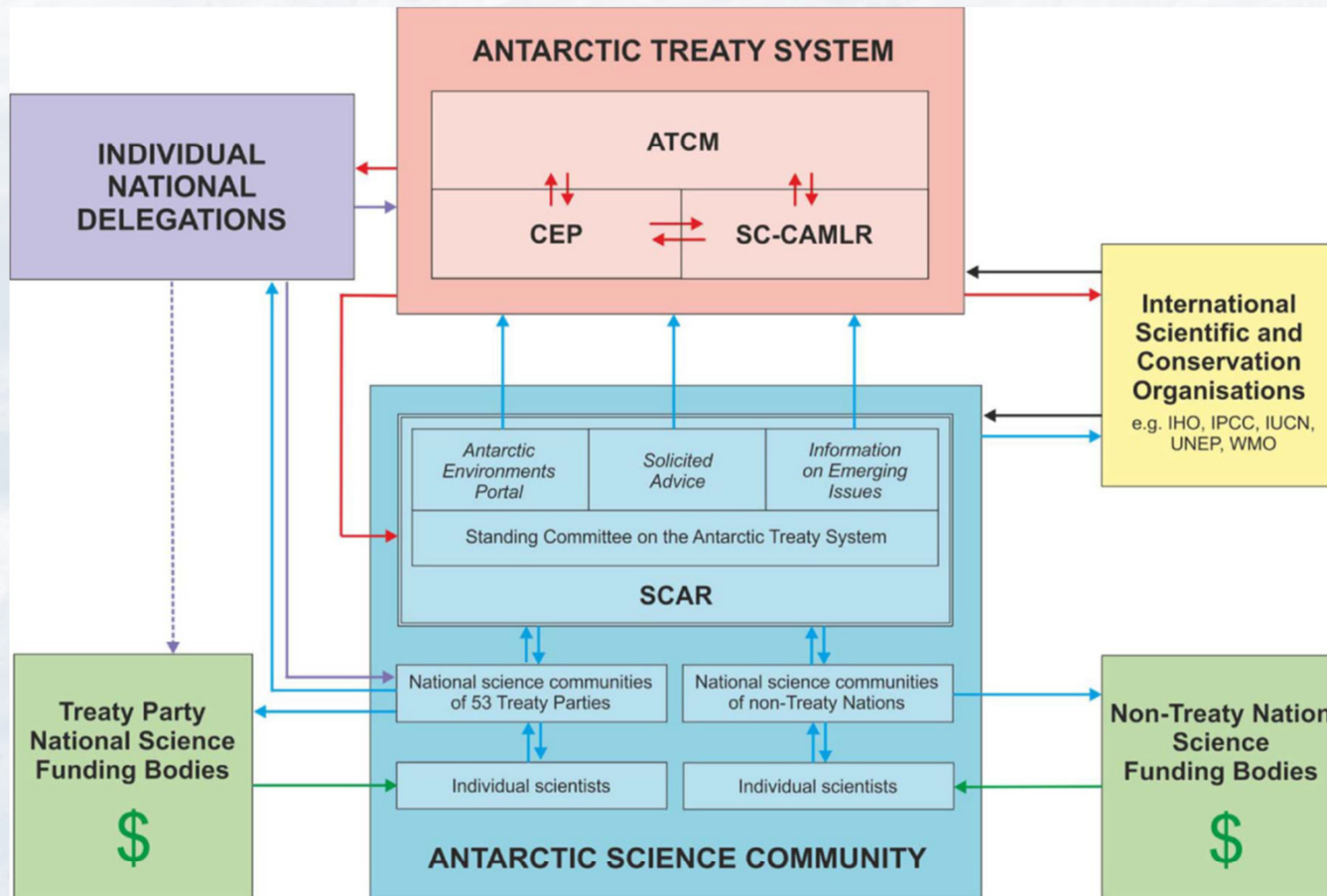
Challenges

Manage and mitigate the impacts of climatic change (modify the protection measures, locations of ASPA, etc)

Antarctic Peninsula and Climate Change


- Marked acceleration of glacial recession
- Coastal ice sheet break-up events
- Decreased extension of annual ice pack
- Declines in populations of pack ice associated Adélie Penguins, Weddell seals, and krill
- Southern extension of elephant and fur seals
- Possible effects on marine plant communities
- Potential impacts on larval development
- Invasive predatory species – king crabs
- Vulnerable to ocean acidification

Scientists, you, play an important role and provide crucial data!



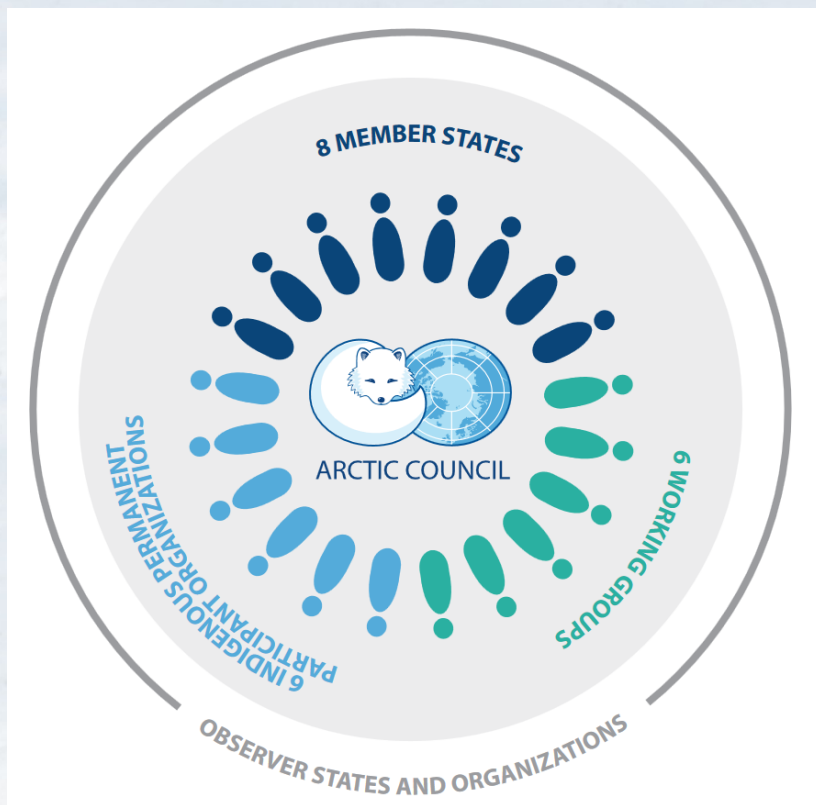
Antarctic science-policy communication pathways

Hughes et al. 2017

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Arctic: there are indigeneous people and countries !

ARCTIC COUNCIL



Intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic.

Based on scientific assessments

Soft power

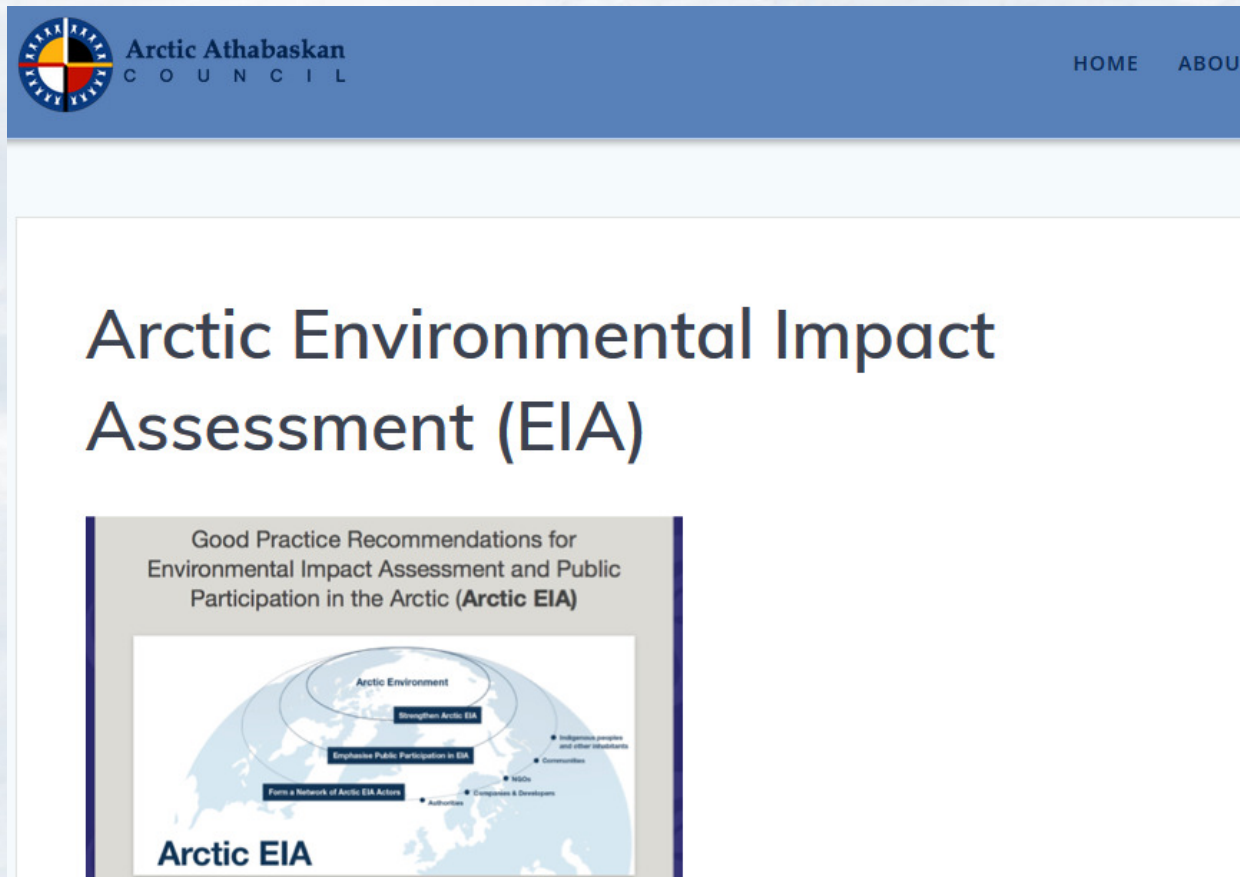
The work of the Arctic Council : six Working Groups

- The [Arctic Contaminants Action Program \(ACAP\)](#) : strengthening and supporting mechanism to encourage national actions to reduce emissions and other releases of pollutants.
- The [Arctic Monitoring and Assessment Programme \(AMAP\)](#) monitors the Arctic environment, ecosystems and human populations, and provides scientific advice to support governments as they tackle pollution and adverse effects of climate change.
- The [Conservation of Arctic Flora and Fauna Working Group \(CAFF\)](#) addresses the conservation of Arctic biodiversity, working to ensure the sustainability of the Arctic's living resources.
- The [Emergency Prevention, Preparedness and Response Working Group \(EPPR\)](#) works to protect the Arctic environment from the threat or impact of an accidental release of pollutants or radionuclides.
- The [Protection of the Arctic Marine Environment \(PAME\) Working Group](#) : protection and sustainable use of the Arctic marine environment.
- The [Sustainable Development Working Group \(SDWG\)](#) works to advance sustainable development in the Arctic



TIMO KOIVUROVA 02.11.2017

Common tool for environmental protection: Environmental Impact Assessment



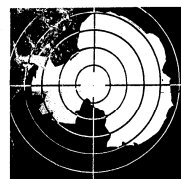
Arctic Environmental Impact Assessment (Arctic EIA) : project endorsed by the Sustainable Development Working Group of the Arctic Council and is led by Finland with Canada and the Kingdom of Denmark.



Time for discussion !



To Laurence Gould without whom there
would be no Antarctica Treaty, with
warm regards
Herman Phleger



CONFERENCE ON
ANTARCTICA
CONFERENCE DE
L'ANTARCTIQUE

CONFERENCIA DE LA
ANTARTIDA
КОНФЕРЕНЦИЯ ПО
АНТАРКТИКЕ

WASHINGTON, D. C. - OCTOBER 15, 1959

December 1, 1959

THE ANTARCTIC TREATY

TRAITE SUR L'ANTARCTIQUE

ДОГОВОР ОБ АНТАРКТИКЕ

TRATADO ANTARTICO

Content of the Antarctic Treaty

Only peaceful purposes

Freedom of scientific research and cooperation

Exchange of data, personnel, freely accessible results, cooperation with international organisations having an interest

'Freezing' of territorial claims

No nuclear explosions/wastes

To be applied South of 60°S, including ice shelves, but limited by the International law with regards to the High Seas

Freedom of inspections and obligation to inform other countries about expeditions and stations

Jurisdiction on nationals, wherever they are, if they commit blameworthy actions

Regular meetings (Antarctic Treaty Consultative Meetings) to recommend measures on all these aspects