

COMNAP Training Module 1:

## Protocol on Environmental Protection to the Antarctic Treaty



### Release notes (version 1: 4 March 2014)

- This presentation was prepared by the COMNAP Training Expert Group.
- This presentation was made on the basis of training material provided by the National Antarctic Programs of Argentina, Australia, France and Spain.
- It is intended that this presentation will be kept opened for development and input from all COMNAP members and should evolve to incorporate staff feedback in later versions.
- It can be used freely by anyone wishing to learn about the Protocol on Environmental Protection.
- The full legal designation of the Protocol is *Protocol on Environmental Protection to the Antarctic Treaty*, opened for signature on 4 October 1991 (entered into force 14 January 1998) ('*Protocol*').
- For further information see [www.ats.aq](http://www.ats.aq).

## Why training in environmental protection?

### Main reasons

- **All human activities** impact the Antarctic environment.
- **Avoid behaviors against the regulations** in order to prevent misconducts.
- **Knowing** the environmental regulations that apply to Antarctica.
- **Continuously** update environmental information.
- **Know and comply with** environmental management **procedures**.

### Goals

- Protect the Antarctic environment.
- Minimise impacts of Antarctic personnel.
- Avoid high costs associated with the inadequate implementation of environmental procedures (examples: waste, fuels).

## Protocol on Environmental Protection to the Antarctic Treaty

### Most relevant aspects

#### Article 2

Designates  
“...Antarctica as a natural reserve, devoted to peace and science.”



Photo L. Jaquet

## Protocol on Environmental Protection to the Antarctic Treaty

### Most relevant aspects

#### Article 3

Sets forth principles applicable to ALL HUMAN ACTIVITIES in Antarctica.

Activities shall be:  
 "planned and conducted so as to limit adverse impacts on the Antarctic environment..."

And to avoid:  
 "...adverse effects on climate or weather patterns..." and  
 "...on air or water quality...";  
 "...significant changes...in the environments";  
 "...detrimental changes in the distribution, abundance or productivity of species...";  
 "...further jeopardy to endangered or threatened species...";  
 "...degradation..."



## Protocol on Environmental Protection to the Antarctic Treaty

And "...on the basis of **information sufficient** to allow prior assessments of, and informed judgments about, their possible impacts..."

Also, "regular and effective monitoring shall take place to allow assessment of the impacts of ongoing activities..."

And "...to facilitate early detection of the possible unforeseen effects of activities carried on both within and outside the Antarctic Treaty area on the Antarctic environment and dependent and associated ecosystems."

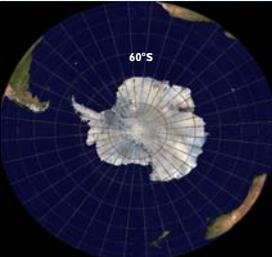


## Protocol on Environmental Protection to the Antarctic Treaty

### Most relevant aspects

#### Article 7

Prohibits  
 "Any activity relating to mineral resources, other than scientific research ..."



## Protocol on Environmental Protection to the Antarctic Treaty

...is a legal agreement that 29 countries have signed up to and agreed to abide.

When and where signed?	When did it enter into legal force?	Can it be modified?
On October 4, 1991, in Madrid, by all countries then a party to the Antarctic Treaty 1959.  Since then, more countries have signed.  More can sign in the future...	On January 14, 1998.  When a treaty or protocol enters into force, it means that it is legally binding on all those countries that have chosen to sign up to it.	Yes, the Protocol can be amended by the unanimous agreement of the Antarctic Treaty Consultative countries.  There is no expiration date for the Protocol.

## Protocol on Environmental Protection to the Antarctic Treaty

### Structure: Protocol (27 Articles) + 6 Annexes

<b>Annex I</b>	Environmental Impact Assessment (EIA)	Adopted by ATCM XVI (1991); entered into force 1998.
<b>Annex II</b>	Conservation of Antarctic Fauna and Flora	Adopted by ATCM XVI (1991); entered into force 1998.
<b>Annex III</b>	Waste Disposal & Waste Management	Adopted by ATCM XVI (1991); entered into force 1998.
<b>Annex IV</b>	Prevention of Marine Pollution	Adopted by ATCM XVI (1991); entered into force 1998.
<b>Annex V</b>	Area Protection & Management	Adopted by ATCM XVI (1991); entered into force 2002.
<b>Annex VI</b>	Liability Arising from Environmental Emergencies	Adopted by ATCM XXVIII (2005); not yet in force – awaiting approval by all Antarctic Treaty Consultative countries.

## Protocol on Environmental Protection to the Antarctic Treaty

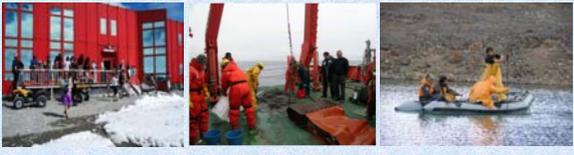
Article 11 establishes the Committee for Environmental Protection (CEP)



The functions of the CEP shall be to provide advice and formulate recommendations to the Parties in connection with the implementation of the Protocol, including the operation of its Annexes, for consideration at ATCMs, and to perform such other functions as may be referred to it by the ATCMs.

## Annex I. Environmental Impact Assessment (EIA)

*An environmental impact assessment (EIA) is an analytical process that systematically examines the possible environmental consequences of human activity including projects and operations. It is a decision-making tool.*



## Annex I. Environmental Impact Assessment (EIA)

### When is it necessary to prepare an EIA?

**ALWAYS**

**Protocol Article 8 (2)** "...any activities undertaken in the Antarctic Treaty area pursuant to scientific research programs, tourism and all other governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required under Article VII (5) of the Antarctic Treaty, including associated logistic support activities."

*If it is determined that the impact of the activity will have less than a minor or transitory impact, then the activity may proceed without referral of the EIA to the Antarctic Treaty System, that is, national procedures and review are all that is required.*

**EIAs must be part of the Exchange of Information between the Parties and are listed in a public database by the Antarctic Treaty Secretariat.**



## Annex I. Environmental Impact Assessment (EIA)

### Description of the activity

Impact less than minor or transitory?

yes → Declaration/ Activity may proceed

no → Initial Environmental Evaluation (IEE)

Impact minor or transitory?

yes → Activity may proceed

no → Comprehensive Environmental Evaluation (CEE)

Impact more than minor or transitory

- Public (nationally and internationally)
- Evaluation by CEP and ATCM

## Annex I. Environmental Impact Assessment (EIA)

### Examples of Initial Environmental Evaluation



Scientific activities

Tourism

## Annex I. Environmental Impact Assessment (EIA)

### Examples of Comprehensive Environmental Evaluation



Construction of a new station

Deep ice core drilling

## Annex II. Conservation of Antarctic Fauna and Flora



Photo S. Michas

**Annex II. Conservation of Antarctic Fauna and Flora**  
**Most relevant aspects ...**

**Shall be prohibited the "taking"\* of native fauna or flora, except in accordance with a permit.**



Photo AAD

\* "take" or "taking" means to kill, injure, capture, handle or molest, a native mammal or bird, or to remove or damage such quantities of native plants that their local distribution or abundance would be significantly affected

**Annex II. Conservation of Antarctic Fauna and Flora**

**Shall be prohibited the "harmful interference"\* on native flora and fauna, except in accordance with a permit.**



\* harmful interference means flying or landing helicopters or other aircraft, using vehicles or vessels, including hovercraft and small boats, using explosives or firearms, wilfully disturbing breeding or moulting birds or concentrations of birds and seals by persons on foot or any activity that results in the significant adverse modification of habitats of any species or population of native mammal, bird, plant or invertebrate

**Annex II. Conservation of Antarctic Fauna and Flora**

**No species of animal or plant not native to the Antarctic Treaty area shall be introduced onto land or ice shelves, or into water in the Antarctic Treaty area except in accordance with a permit.**

Alien introductions are one of the highest environmental risks for Antarctica.

Each Party shall require that precautions be taken to prevent the introduction of micro-organisms (e.g., viruses, bacteria, parasites, yeasts, fungi) not present in the native fauna and flora.

Nothing in this Article shall apply to the importation of food into the Antarctic Treaty area provided that no live animals are imported for this purpose and all plants and animal parts and products are kept under carefully controlled conditions.



**Annex II. Conservation of Antarctic Fauna and Flora**



Grass seed found on expeditioner's clothing. Photo AAD

These grasses were grown from seeds found in the Larsemann Hills. Grasses are not native to continental Antarctica. Photo G. Jacobson

Nassauvia magellanica, Deception Island (removed in 2010).

**Annex II. Conservation of Antarctic Fauna and Flora**

**Guidelines in Antarctica ...**

Be aware of the SCAR "Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica".

Be aware of the SCAR "Environmental Code of Conduct for Terrestrial Scientific Field Research in Antarctica".

Be aware of the SCAR/COMNAP "Checklists for Supply Chain Managers of National Antarctic Programmes for the reduction in risk of transfer of non-native species".

Be aware of the CEP "Non-native Species Manual".

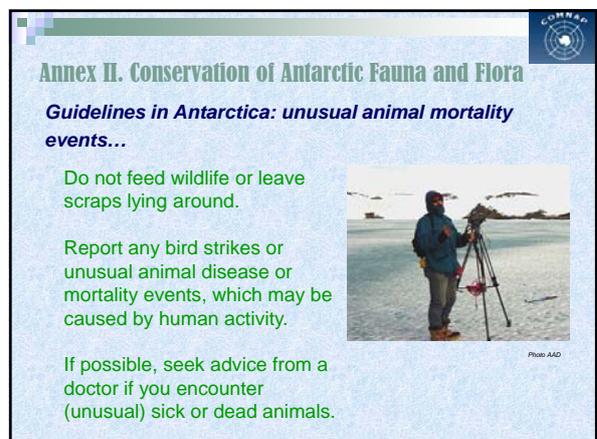
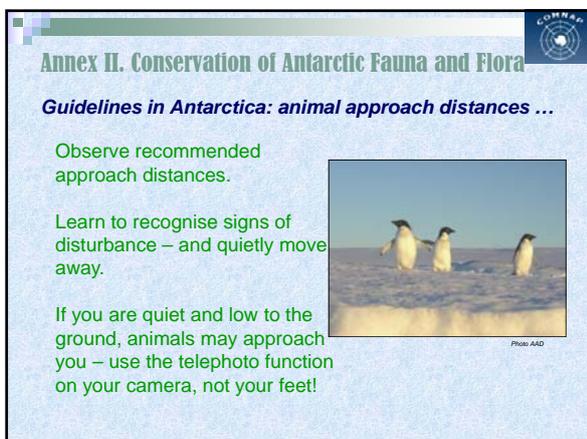
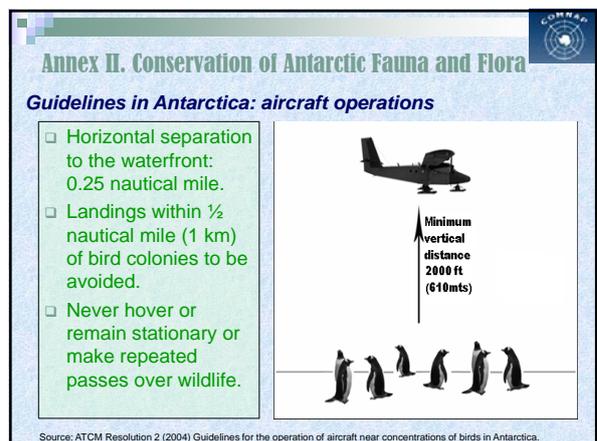
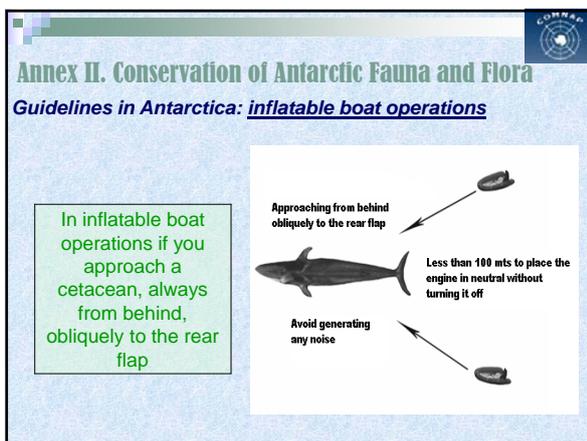
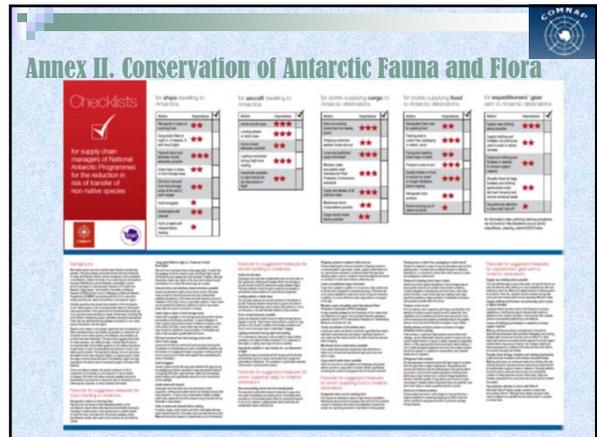
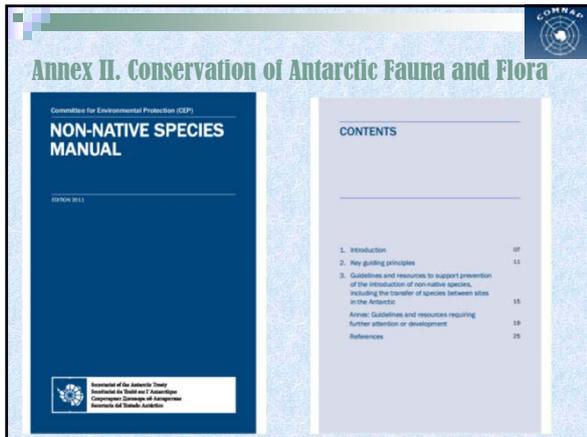


**Annex II. Conservation of Antarctic Fauna and Flora**

**Guidelines in Antarctica ...**

- Do not touch, disturb or feed animals.
- Do not obstruct access to sea of animals.
- Walk or drive vehicles only by the indicated paths.
- Select your route carefully. Avoid walking on vegetation.





**Annex III. Waste disposal and waste management**

*Photo: G. Bloech*

**Annex III. Waste disposal and waste management**

**GOALS**

Reduce the waste produced or disposed	Remove the waste generated out the Antarctic Treaty Area
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*Photo: N. Sorenson*

**Annex III. Waste disposal and waste management**

*Each country has its own waste disposal classification scheme, according to the waste treatment chain which is different from one country to another. All these schemes abide by the classification established by the Environmental Protocol.*

**Annex III. Waste disposal and waste management**

*Example 1 of waste disposal classification scheme*

- Recyclables**
- Burnables:** these items are incinerated on station
- Remove from Antarctica**

*Photo: G. Bloech*  
*Photo: N. Sorenson*

**Annex III. Waste disposal and waste management**

*Example 2 of waste disposal classification scheme*

<p><b>GROUP I</b></p> <p>BIODEGRADABLES FOOD PAPER, WOOD and CLEAN RAGS</p>	<p><b>GROUP II</b></p> <p>NO BIODEGRADABLES</p> <p>PLASTIC, TETRA BRICK, ASHES, FOOD EXPIRED</p>	<p><b>GROUP III</b></p> <p>HAZARDOUS</p>
<p><b>GROUP IV</b></p> <p>INERT GLASS, CANS, BADGES</p>	<p><b>GROUP V</b></p> <p>WASTEWATER</p>	<p><b>GROUP VI</b></p> <p>RADIOACTIVE WASTE FROM SCIENTIFIC ACTIVITIES</p>

**Annex III. Waste disposal and waste management**

*There are different ways to minimize waste and air pollution...*

Catalytic exhaust      Co-generation heating

**Annex III. Waste disposal and waste management**  
*And there are different ways of treating waste...*



**Annex III. Waste disposal and waste management**



Crusher                      Compactor

**Annex III. Waste disposal and waste management**

**Grey Water Treatment Unit**



**Annex III. Waste disposal and waste management**

**Some advice on waste management in the field**

- Remove all unnecessary packaging prior to deployment.
- All waste is to be returned from the field, including human waste. Take the relevant receptacles into the field.
- Ensure all items are well secured in the field so they don't become wind-blown debris.
- Remove everything from field camps – nothing should be left behind.



Photo K. Kilbarron

**Annex IV. Prevention of Marine Pollution**



Photo K. Pierre / PEV

**Annex IV. Prevention of Marine Pollution**

Disposal <b>forbidden</b> into the sea		Disposal <b>allowed</b> into the sea
 Oil or oily mixture		 Food waste comminuter or grinde in any case not less than 12 nautical miles from the nearest land or ice shelf.
 Sludge, dirty ballast		
 Tank washing waters		 Sewage at more than 12 nautical miles of land or ice shelves and it shall not be discharged instantaneously but at moderate rate and, where practicable, while the ship is in route at a speed of no less than 4 knots.
 Other oily residues		
 Noxious liquid substance		
 All type of plastics		

## Annex V. Area Protection and Management




## Annex V. Area Protection and Management

Area	Protection and management	Aims
<b>ASPA</b> (Antarctic Specially Protected Areas)	<ul style="list-style-type: none"> <li>• <b>PERMIT needed</b> to enter</li> <li>• Post-visit report</li> <li>• Management Plans</li> </ul>	Protect outstanding environmental, scientific, historic, aesthetic or wilderness values
<b>ASMA</b> (Antarctic Specially Managed Areas)	<ul style="list-style-type: none"> <li>• <b>NO permit needed</b> to enter</li> <li>• Management Plans</li> </ul>	Assist in the planning and coordination of activities, avoid possible conflicts, improve cooperation between Parties or minimise environmental impacts
<b>HSM</b> (Historic Sites and Monuments)	<ul style="list-style-type: none"> <li>• <b>NO permit needed</b> to enter</li> </ul>	Recognised historic value

## Annex V. Area Protection and Management

### Protected areas and species

- Antarctic Specially Protected Areas (ASPAs) are areas of scientific, environmental or heritage significance.
- Protected areas are not to be entered unless authorised by permit.
- Do not interfere with plant and animal species unless authorised by permit.



Photo: AAO

## Annex V. Area Protection and Management

### Where are the ASPAs located?




## Annex V. Area Protection and Management

### Behaviour within ASPA...

Do not enter without a permit

If you have a permit:

- Follow the activities approved in the permit
- Follow the area management plan
- Request eventual extensions.



## Annex V. Area Protection and Management

### Behaviour within ASMA ...

A permit is not required to enter

Must know the ASMA management plan concerned



**Annex V. Area Protection and Management**

**About the HSM...**



Movable and immovable cultural property of recognized historic value
Different nature: Historical Sites, Archaeological, Memorial
Shall not be damaged, removed or destroyed

**Some practical rules, advices and tips on environmental issues**

**Heritage management**

Many stations have sites, buildings and/or relics that have cultural heritage significance.

Do not interfere with any cultural heritage buildings or relics.

Do not collect or souvenir any items. Leave items where they are, record and report.



Photo: R. Wooten

**Some practical rules, advice and tips on environmental issues**

**Energy conservation**

**Conserve water** – fresh water is produced using non-renewable energy for melting ice or running desalination plants.

**Conserve energy** – turn off computers, unnecessary lights and appliances.

**Conserve heat** – keep doors shut.



Photo: AAD

**Some practical rules, advices and tips on environmental issues**

**Vehicle use**

Minimise vehicle use – walk or ski.

Prevent fuel spillage – refuel in good conditions in designated refuelling areas and use quad and field fuel spill kits.

Do not operate vehicles on ice free ground. Use established marked tracks – do not create new routes.



Photo: AAD



Photo: D. Thiel