

**PERUVIAN ANTARCTIC INSTITUTE  
(INANPE)**

*Exchange of Information according Resolution 6 (2001)  
ATCM XXIV*



**ANNUAL REPORT  
2005 - 2006**

## 2.1 SCIENTIFIC INFORMATION



### 2.1.1 *Forward Plans*

Lines of research according the Institutional Strategic Plan

#### *Lines of action by Working Groups*

##### **A. Marine Sciences**

- Oceanography
- Hidrography
- Marine Biology
- Retrospective analysis in time series

##### **B. Earth Sciences**

- Glaciology: Balance of masses
- Antarctic Paleontology : Paleoclimate
- Hidrology and hidro-geology
- Magnetism
- Geodesics

##### **C. Atmosphere and Space Sciences**

- Antarctic Meteorology and Climatology
- Polar Aeronomics
- Climate Change
- Antarctic Astronomy

##### **D. Environment**

- Environmental Evaluation of different activities and projects
- Permanent Environmental Monitoring
- Environmental Management
- Environmental Awareness

##### **E. Life Sciences**

- Human Sciences
- Terrestrial biodiversity

##### **F. Engineering and Technology**

- Database and GIS
- Application of satellital technology to antarctic research
- Use of alternative energy sources in Antarctica

**Contact Points:**

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**2.1.2 Scientific Activities in the period**

Working Group	Project	Coordinating Institution	Project Chief
Marine Sciences	COPEPOD I: Biology and Ecology of the main pelagic communities at Bransfield Strait and around Elephant Island..	Instituto del Mar del Perú IMARPE	Biologist.. Mg. Gladys Cárdenas Quintana <a href="mailto:gcardenas@imarpe.gob.pe">gcardenas@imarpe.gob.pe</a> Ing. MsC. Mariano Gutiérrez Torero <a href="mailto:mgutierrez@imarpe.gob.pe">mgutierrez@imarpe.gob.pe</a>
	Intermedial Antarctic Waters and Its relationship between the abundance and distribution of the botton species.	Universidad Agraria La Molina	Ing. Luis Icochea Salas <a href="mailto:licochea@lamolina.edu.pe">licochea@lamolina.edu.pe</a>
	Study of the sea level variability in Mackellar Sound.	Dirección de Hidrografía y Navegación – Peruvian Navy	Ing. Mirian Estrada Ludeña <a href="mailto:mareas@dhn.mil.pe">mareas@dhn.mil.pe</a>
Earth Sciences	Precision of temporary coordinates of MAPI and MTH1 at Machu-Picchu Scientific Station.	Universidad Nacional Federico Villarreal	Ing. Domingo Espinoza Oscanoa <a href="mailto:domespinoza@yahoo.com">domespinoza@yahoo.com</a>
Atmosphere and Space Sciences	Ice Cube Project: Neutrino telescope	Pontificia Universidad Católica del Perú	Dr. Alberto Gago <a href="mailto:agago@puccp.edu.pe">agago@puccp.edu.pe</a>
	Study of the ozone layer depletion in the andean region of Peru and the Antarctic.	Universidad Nacional del Centro	Dr. Luis Suarez <a href="mailto:doctorozono@yahoo.com">doctorozono@yahoo.com</a>
	Design of an energetic model for MacKellar Sound.	Servicio Nacional de Meteorología e Hidrología	Ing. Irene Trebejo Varillas <a href="mailto:itrebejo@senamhi.gob.pe">itrebejo@senamhi.gob.pe</a>
Environment	Environmental Risks Assessment of Machu-Picchu Scientific Station.	Universidad Nacional san de Agustín de Arequipa	Blgo. Eudio Cárdenas V. <a href="mailto:eudioedi@hotmail.com">eudioedi@hotmail.com</a>
Life Sciences	Biology and Ecology of the <i>Sterna Vitata</i> colony at Crepin Point.	Asociación Peruana para la Conservación de la Naturaleza	Blgo. Raúl Sánchez Scaglioni <a href="mailto:eymard@speedy.com.pe">eymard@speedy.com.pe</a>

## 2.2 OPERATIONAL INFORMATION



### 2.2.1 *National Expeditions*

The XVI Peruvian Scientific Campaign to the Antarctic (ANTAR) was planned and organized by Peruvian Antarctic Institute (INANPE) responsible by law in conducting the National Programme. It started december 10, 2005 and concluded with the arrival of Humboldt research ship to Callao port on march 1, 2006. Its successful mission was to conduct scientific research and to provide logistic support to the Station and perform maintenance to the premises. 110 persons participated. .

#### A. STATIONS

The Machu-Picchu Station ( ECAMP) was built in 1989 as a summer station in the MacKellar Sound of Admiralty Bay, King George Island, at the following coordinates:

- Lat. 62° 05' 29'' S
- Long. 58° 28' 16'' 0

It has a capacity to lodge up to thirty persons. Has first aid medical facilities and the following modules:

- Living quarters
- Power House / workshop
- Emergency refuge
- Laboratory
- Dining-room/ Kitchen

During this summer, repair works and the construction of a new laboratory were done

#### B. SHIPS

(1) The main logistic platform used by the expedition was the BIC Humboldt, oceanographic ship, owned by Marine Institute of Perú (IMARPE), registered in Callao port, operated by the peruvian navy. Its technical characteristics appear at INANPE website ( [http:// www.inanpe.gob.pe](http://www.inanpe.gob.pe))

(2) Brief details of the itinerary:

**10 December 2005** – Departure from Callao ( beginning of the expedition)

**23 December 2005** – Arrival to Punta Arenas – Chile (embarkation of scientists and loading cargo

**26 December 2005**- Departed from Punta Arenas

**30 December 2005**- Arrived to Machu Picchu Station

**30 December 2005**- Disembarkation of personnel and unloading of materials, opening and putting the station to function.

**05 January 2006**- Beginning the oceanographic cruise in the Bransfield Strait area and around Elephant Island.

**14 January 2006** End of the oceanographic cruise  
**14-17 January- 2006** Embarkation of scientific personnel and retrieving of materials from the station.  
**17 January-2006** Departure to Punta Arenas  
**20 January 2006** Arrival to Punta Arenas ( disembarkation of several peruvian scientists and embarkation of Ukrainian scientists )  
**23 January-2006** –Departure from Punta Arenas to Akademik Vernadsky Station..  
**27 Enero 2006** – Arrival to Ukrainian Station.  
**06 February 2006** –Departure from Akademik Vernadsky Station to Machu-Picchu Station.  
**07 February 2006** The Humboldt picked-up Ecuatorian personnel of the Pedro Vicente Maldonado station and took them to chilean station President Eduardo Frei..  
**08 February-2006** Retrieval of materials and wastes from the Machu-Picchu Station and evacuation of Peruvian expeditionaries to Punta Arenas.  
**12 February -2006** Arrival to Punta Arenas.  
**14 February--2006** Departure from Punta Arenas to Callao.  
**01 Marzo-2006** Arrived to Callao.

#### C. AIRCRAFTS

No aerial operations were conducted except the use of comercial airlines and Chilean Air Force planes for transport of Peruvian scientific personnel. .

#### D. SCIENTIFIC ROCKETS

None

#### E. MILITARY

(1) At Machu-Picchu Scientific Station:

- Commander Víctor Murillo Miletich, Chief of the expedition
- Army Major, Ulises Cabanillas García, Chief of construction team

(2) At the Humboldt: 11 Officers, 38 sub-officers and technicians.

- Commander, Sergio Rouillón Pardo, Captain
- Commander, Rodolfo Sablich Luna Victoria, Chief of Operations
- Commander, Helmut Schneider Ormeño, Deputy Commander

(3) Officer in charge of the Expedition

- Commander, Víctor Murillo Miletich, Chief of the Expedition

(4) Armament in the Ship

None

(5) Armaments in the Station

None

### 2.2.2 Non-governmental Expeditions

Nothing to report

## 2.3 PERMIT INFORMATION



### 2.3.1 Visits to Protected Areas

No permits were issued during the period.

### 2.3.2 Taking and harmful interference with flora and fauna

In compliance with Annex II of the Protocol, the following permit was granted in the period:

PLACE	SCIENTIFIC PROJECT AND REASERCHERS INVOLVED	ÁREA OF SCIENTIFIC RESEARCH AND WORKING GROUP	DESCRIPCIÓN OF THE ACTIVITY	SPECIES INVOLVED AND AMOUNT OF SAMPLES	DURATION OF PERMIT
MacKellar Sound, Admiralty Bay, King George Island Coordinates: LAT. 62°05'29" S LONG 58°28'16 W.	Biology and Ecology of the <i>Sterna Vittata</i> colony at Crepin Point - Project INANPE – CNP – 2005 – 04.  1. Biologist Raúl Sánchez Scaglioni 2. Biologist Liliana Ayala Ayala	Terrestrial Biodiversity  Working Group: Life Sciences	Counting of reproductive mates, eggs and pidgeons in the colony. Characterization of the nests and eggs. Morfometric measurement of <i>Sterna Vittata</i> adults. Diet evaluation of the specie.	Gaviotín Antártico. ( <i>Sterna Vittata</i> )  Minimum as possibly	01/01/06 to 20/01/06

### 2.3.3 Introduction of non-native species

No permits were granted in the period. Activities were conducted during austral summer. Preventative measures were taken to avoid un-intentional introduction of non-native species in the antarctic continent, Such as:

- ✓ Previous medical examination to expeditioners.
- ✓ Fumigation of ship and boats used in the expedition
- ✓ Checking materials to be used during the expedition before its shipment to the Antarctic.
- ✓ Sanitary control of food products, specially poultry, eggs, etc.

## 2.4 ENVIRONMENTAL INFORMATION



### 2.4.1 Compliance with the Protocol

Nothing to report.

### 2.4.2 List of IEEs and CEEs

One (1) Initial Environmental Evaluacion (IEE) and one (1) Preliminary Environmental Evaluation (PEE) were elaborated whose impacts were determined to be equal to and less than minimum and transitory, respectively.

ACTIVITY / PROJECT	TYPE	LOCALIZACIÓN	LEVEL OF IMPACT	DECISION TAKEN
Biology and Ecology of the <i>Sterna Vittata colony at Crepín Point</i> - Project INANPE – CNP – 2005 – 04.	Preliminary Evaluation	MacKellar Sound, Admiralty Bay, King George Island Coordinates: LAT 62°05'29" S LONG 58°28'16 W.	Less than minimum and transitory	Proceed without delay
Operational betterment of Machu-Picchu Scientific Station.	Inicial Environmental Evaluation	MacKellar Sound, Admiralty Bay, King George Island Coordinates: LAT 62°05'29" S LONG 58°28'16 W.	Equal to minimum and transitory	Proceed taking in account the IEE recomendations..

For additional information on the EIAs, please contact Miss Patricia Gagliuffi, environmental officer of INANPE:  
e-mail: [pgagliuffi@rree.gob.pe](mailto:pgagliuffi@rree.gob.pe)

### 2.4.3 Monitoring Activities Report

None relevant information to report.

### 2.4.4 Waste Management Plans

One of the main tasks performed by INANPE in the period was the implementation of a re-structured Waste Management Plan for the Machu-Picchu Station.

Also, a new incinerator and a new waste compactor, were installed for a more efficient treatment of wastes.

At the end of the expedition, all wastes produced during it, including some left by previous expeditions, were removed from the Antarctic.

A waste management report is attached as Annex A.

For additional information on Waste Management Plan for the Machu-Picchu Station, please contact :

*Patricia Gagliuffi F.*  
*e-mail: pgagliuffi@rree.gob.pe*

## 2.5 RELEVANT NATIONAL LEGISLATION



Nothing to report except that Measure 1 (2005) that adopted Annex VI is being subject to ratification procedures.

## 2.6 OTHER INFORMATION



### ***2.6.1 Inspection Reports***

During the period, Peru has not performed any inspection nor received any inspection visit under Article VII of the Antarctic Treaty and Article 14 of the Protocol.

### ***2.6.2 Notice of Activities Undertaken in Case of Emergencies***

None emergencies have been reported in the period.



**Annex A: Table of Waste Management in the Machu Picchu Station for the period 20052006.**

LOCALIZATION	TYPE OF WASTE		QUANTITY	MÉTHOD OF DISPOSAL
Machu-Picchu Scientific Station. MacKellar Sound, Admiralty Bay, King George Coordinates: Lat. 62°05'29" S Long. 58°28'16" W.	Group I:	Residual Waters	10 cylinders	Disponed of at the sea according to Art.5 (1) of Annex III and Art.6 of Annex IV of the Protocol. Di
	Group II	Residual fuels	2 gallons	Removed from the Continent
	Group III	Organics	7 cylinders	Removed from the Continent
	Group IV	Metals	¼ cylinder	Removed from the Continent
		Plastics	8 cylinders	Removed from the Continent
		Glass	½ cylinder	Removed from the Continent
	Group V	Radioactive wastes	None generated	
	Domestic wastes Assorted wastes**		32 cylinders	Removed from the Continent
* Each cylinder has a capacity of 55 gallons. ** Residues of previous periods.				