Muséum national d'Histoire naturelle

Papua New Guinea expedition
co-organized with:
IRD
Institut de recherche pour le développement

our planet reviewed

Taking a Closer Look at Biodiversity Hotspots

Press kit – September 2012

papua new guinea

2012 - 2013

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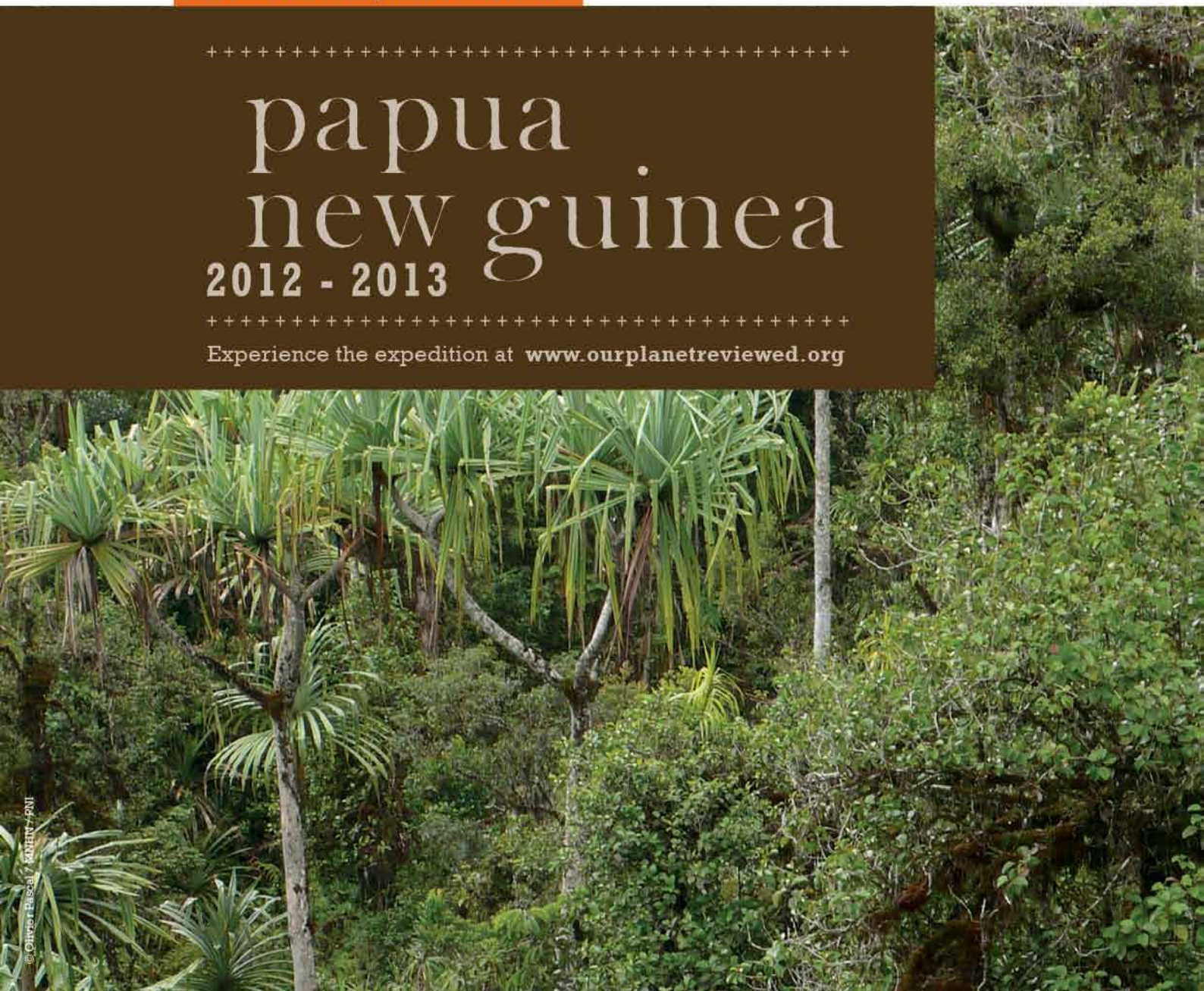

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"Our generation of scientists is the first to be aware that one-third if not one-half of all biodiversity will become extinct by the end of the century and that 80% has not yet been described."

Philippe BOUCHET,
National Museum of Natural History (Paris, France)

Our Planet Reviewed Papua New Guinea 2012-2013

September 2012

Contents

1 | Our Planet Reviewed: An unprecedented programme of naturalist expeditions

Over the course of the past 20 years, scientists have realized just how vast our biodiversity really is. There are undoubtedly anywhere from 8 to 30 million species left to discover, many of which are certainly threatened with extinction. Every year, 18,000 new species are discovered. At this rate, it would take 300 to 1,000 years for scientists to complete their inventory!

Six years after "Santo 2006" in Vanuatu and two years after Mozambique and Madagascar, scientists from the "Our Planet Reviewed" programme are embarking on another voyage to discover the Earth's biodiversity. This time, they're headed for Papua New Guinea for three months of exploration on land and at sea, coordinated by the National Museum of Natural History (Paris, France), Pro-Natura International and the French *Institut de recherche pour le développement* (IRD).

The IRD's oceanographic research vessel, the Alis
© Raymond Proner / IRD

A major programme for the exploration of nature, **Our Planet Reviewed has for mission to acquire new knowledge** in areas of the globe that boast a wealth of biodiversity yet have been little explored. Essentially devoted to "neglected" biodiversity (marine and terrestrial invertebrates, plants, fungi), which represents 95% of all biodiversity and plays a fundamental role in the balance of ecosystems, Our Planet Reviewed hopes to draw due attention to these key yet often overlooked components of biodiversity and thereby foster new conservation policies that are not based on iconic species alone (mammals, birds, etc.).

Building on the success and experience of the previous expeditions to **Santo in 2006** and to **Mozambique** and Madagascar in 2009 and 2010, Our Planet Reviewed is undertaking a new, broad-spectrum inventory, both marine and terrestrial, in **a little-explored region: Northeast New Guinea**. The magnitude of operations and the number (200) and diversity of participants guarantee a wealth of results that will contribute regional data to the major international databases. But the expedition to Papua New Guinea also has a global aim: by gathering a vast quantity of standardized data on one of the planet's most diverse regions, the expedition will attempt to answer questions regarding the magnitude of biodiversity and its future in the face of increasing pressures and threats.

Our Planet Reviewed, a programme of naturalist expeditions on an exceptional scale:

1. **Objectives:**
- Step up the discovery of species new to science by concentrating efforts on areas of the planet that are considered conservation priorities
- Provide the global scientific community with new specimens to study and at the same time bear witness to this biodiversity for future generations.

2. **Aim:** Ensure that neglected biodiversity compartments are included in actions undertaken by nature conservation organizations; carry out massive inventories for results with international reach.

3. **Requirement:** Involve organizations in host countries in the spirit of a North-South partnership for sustainable development.

At the helm of Our Planet Reviewed are two men:
- **Philippe BOUCHET**, National Museum of Natural History, head of marine expeditions
- **Olivier PASCAL**, Pro-Natura International, head of land expeditions

2 | 2012-2013: Papua New Guinea

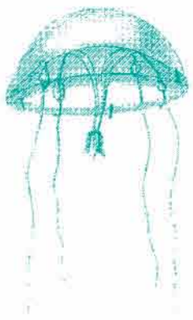
2.1 Geography in brief

The island of New Guinea is located north of Australia in the area of the Pacific Ocean known as Melanesia. It is bordered on the south by the Torres Strait and the Arafura Sea, which separate it from Australia, and on the east by the Solomon and Bismarck seas and the Pacific Ocean. The island runs northwest-southeast. It is 2400 km long and 700 km wide, north to south.
New Guinea is divided into two countries:
- The western half of the island, Western New Guinea consists of the Indonesian provinces of Papua and West Papua;
- The eastern half includes the largest portion of the independent country of Papua New Guinea.

Mountainous for the most part, with Mount Wilhelm culminating at 4,509 metres, Papua New Guinea is covered with lush rainforest. Most of the country is located on the island of New Guinea, including the capital Port Moresby, but it also comprises a few islands, the largest of which are New Ireland, New Britain and Bougainville. Papua New Guinea consists of 20 provinces grouped in four regions. Our Planet Reviewed scientists will focus on the provinces of Madang and Chimbu.

The island of New Guinea represents:

- the world's third largest tract of intact tropical forest (after the Amazon and Congo basins) and one of the rare places on Earth where it is still possible to find rainforest from the coast all the way up to the natural tree line.
- 5% of global biodiversity (proportion of endemic plant species > 70%)



2.2 Why Papua New Guinea?

The island arc that stretches from the Philippines to New Guinea is the only place on Earth that claims both vast expanses of tropical forest and the world's richest coral reefs.

Located right where the biodiversity hotspots of Wallacea[1] and East Melanesia meet, the forests and mountains of Papua New Guinea represent an exceptionally species-rich environment. Even though it has yet to be thoroughly explored, the region serves as an international benchmark for estimating the order of magnitude of terrestrial biodiversity. Analyses of forest insects from the Madang region, conducted by international researchers working with local institutions, have provided the basis for the most recent estimations at a global level.

[1] Biogeographical area that includes the islands located beyond Java and Borneo between Southeast Asia and nearby Oceania.

Nevertheless, these estimates remain limited to the lowland forest and are based on selected insect and plant compartments of biodiversity: in this very rich environment, most of the invertebrate fauna and most of the flora except for higher plants remain poorly known if at all, and the great majority of insects collected have yet to be described.

As for marine research, rapid assessment programs by major conservation NGOs in the 1990s–2000s have shown that the "Coral Triangle," long identified between Taiwan, the Philippines, the Malay Peninsula, and Indonesia, actually extends eastward to northern New Guinea and the Solomon Islands. There we find 76% of all reef-building corals and 52% of all Indo-Pacific reef fishes. One hectare of habitat can be home to more species of coral than the entire Atlantic Ocean. However, despite the Coral Triangle Initiative, launched in 2007 by the region's governments and conservation NGOs, the knowledge on which to base conservation, training and sustainable development efforts is spotty at best and depends on the region and biodiversity compartments. Most results concern the corals and fishes of Indonesia and the Philippines, countries that are more accessible and endowed with better developed infrastructures in terms, for instance, of human resources. In other compartments (crustaceans, molluscs, echinoderms, algae) however, **knowledge remains highly fragmented, to the point that any new expedition is guaranteed to discover unknown species.**

2.3 Why the provinces of Madang and Chimbu?

Marine biodiversity is higher along Papua New Guinea's northern coastline (Bismarck Sea and Solomon Sea) than along the southern coast (Gulf of Papua). Together, the provinces of Madang and Chimbu represent an exceptional altitudinal gradient. From the bottom of the Bismarck Sea to Mount Wilhelm, the highest point in the country, the expedition will be able to collect samples within an altitudinal range of 5,000 metres.

1 - Forest of Mount Wilhelm, at around 1700 metres
© Maurice Leponce / MNHN / PNI

2 - View of the Ramu floodplain with the river Imbrum in the foreground and the Finisterre range in the background
© Olivier Pascal / MNHN / PNI

2.4 Scientific objectives

The overall objective of the expedition is to document neglected biodiversity in a key but understudied region, while integrating a training component for local players with a view to conservation.

This overall objective revolves around five complementary objectives

1 | Research: discover unknown species in the terrestrial and marine ecosystems of northeast Papua New Guinea; assess possible impact from climate change on the plants and animals most at risk in the world– those of high tropical mountains; contribute to answering the open question of how many species live on the planet;

2 | Conservation: strengthen scientific bases with a view to the conservation and sustainable development of land ecosystems, consolidate Papua New Guinea's place in the Coral Triangle, and create reference inventories for this biogeographical terrestrial region and marine ecoregion.

3 | Training and partnership: bring on board local researchers, provide additional training for Papuan parataxonomists and offer local players (researchers, technicians, tourism professionals) tools for disseminating knowledge and raising awareness.

4 | Dissemination of knowledge: share with as many people as possible (general public, teachers and students) the momentum, the goals and the results of a major naturalist expedition.

5 | Archiving and data management: constitute reference collections and; contribute to biodiversity databases in Papua New Guinea and the world (GBIF: Global Biodiversity Information Facility, BOLD: Barcode of Life Database, OBIS: Ocean Biogeographic Information System).

Timetable

The high period of the Papua New Guinea 2012–2013 expedition will be from October through December 2012. The expedition witll continue in 2013 with fewer people in the field and in other seasons with local researchers. In November–December 2013 the artificial reefs and colonisation modules sunk earlier will be retrieved.

Land expedition

Marine expedition

2.5 Land expedition: October – November 2012

Map of altitudinal transect, Mount Wilhem

Team

Headed by Olivier Pascal (Pro-Natura International), Maurice Leponce (Royal Belgian Institute of Natural Sciences), Vojtech Novotny (Binatang Research Center) and Jérôme Munzinger (IRD) for botany, the team brings together 84 people from 7 different countries, including 63 researchers, technicians and local assistants.

Schedule and areas explored

- 10 October to 11 November 2012: altitudinal transect of Mont Wilhelm with 8 sampling sites by elevation from 200 à 3700 metres.
- 12 November to 6 December 2012: comparative studies in a lowland forest (Wanang field station).
- First quarter 2013: monitoring of field samples and first analyses at the Binatang Research Center.

Refining biodiversity assessments

The most recent assessments of global biodiversity derive mainly from analyses of data obtained in lowland forest, particularly in New Guinea, by a series of international projects. Drawing on the know-how and infrastructure put in place by the NGOs and institutions who were there as part of these projects, in particular the Binatang Research Center (BRC) based in Madang, the project will complete this base with new data on the distribution of species in the montane forests of Mount Wilhelm, from sea level to the tree line at around 4,000 metres. They will therefore add an additional factor to the model by incorporating the effect of altitude to refine the latest assessment.

Forests of Mount Wilhelm, at around 1200 metres
© Maurice Leponce / MNHN / PNI

3D mapping of Mount Wilhelm (source: *Remote sensing Center UPNG*)

Innovating to anticipate the impact of climate change on biodiversity

While we know that the biodiversity of tropical mountains will be hardest hit by climate change, there are few studies that assess the actual impact on this ecosystem. Our Planet Reviewed scientists will help to grow our understanding in this area by integrating, for the first time, the effects of human transformation of environments and the loss of available surface area in simulations of warming. Thanks to the collaboration of geographers from the University of Papua New Guinea's Remote Sensing Centre, they already have available surface measurements for the Island's various altitudes and the very best in terms of assessing the state of natural habitats in New Guinea.

Combining local know-how and modern biology

Headed by Professor Vojtech Novotny, one of tropical ecology's most brilliant researchers, the Binatang Research Center (BRC) is the operation's main partner. The expedition will be carried out essentially by Papuan parataxonomists and paraecologists. The BRC's team has produced some of the most thorough data on tropical insects to date. This centre successfully conducted the largest study ever done on the distribution of species in a lowland tropical forest. This work has been the basis for the most recent figures on arthropods (essentially insects, which represent nearly a quarter of all known species), the number of which put the "the" in "the trend", whether up or down, in the global number of species on Earth for the past 30 years. Several studies by the BRC have been published in the most prestigious scientific journals, like *Science and Nature*. The massive involvement of BRC personnel ensures that the delivery times are as short as possible: scientists will have exploitable data in hand within 18 months.

Supporting local communities favourable to conservation

Papua New Guinea is one of the world's rare countries where customary land law is recognized by modern legislation. Papuan communities are among the most powerful landowners in New Guinea, and 97% of the land belongs to them. This gives village communities a crucial role to play in the protection of biodiversity. By working with the communities in the region targeted by the project, especially those in Wanang, who recently decided to ignore the proposals of forestry companies and declare their forests "conservation zones", scientists will shed welcome light on and greater visibility of their policy at the national level. The project includes the financing of two Masters students from the University of Papua New Guinea. They will be based at the BRC and their training will be anchored in the project's activities. The centre's 20 parataxonomists will also benefit from further training by senior scientists who will intervene during the six weeks of the main field phase and periodically during monitoring and data analysis.

2.5 Marine expedition: October – December 2012

Team

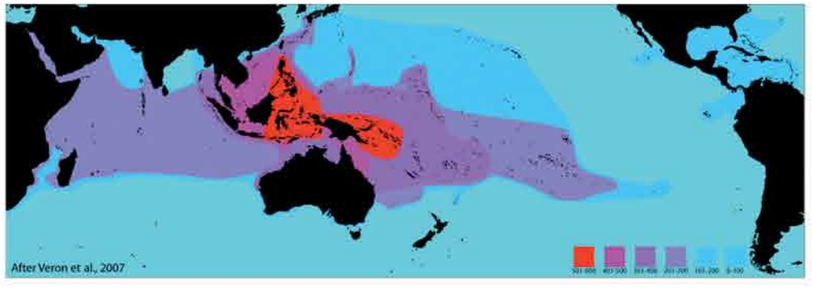
Headed by Philippe Bouchet (National Museum of Natural History) and Claude Payri (IRD), the team of marine explorers consists of 89 participants from 19 different countries, including researchers, technicians, students, volunteers, professional fishers and artist–naturalists.

Schedule and areas explored

- 23 October to 6 November 2012: reconnaissance of habitats in the lagoon and coastal area of Madang
- 4 November to 16 December 2012: inventory of near–shore plant and animal biota.
- 4 to 26 December 2012: offshore exploration campaign in the Bismarck Sea.
- November–December 2013: return to collect the ARMS (*Artificial Reef Matrix Structures*[1]) submersed a year earlier.

Discovering species new to science

Despite the description of 1,800 to 2,000 new species every year, marine biodiversity remains largely unknown, to the point that **every new expedition to the Coral Triangle is guaranteed to discover previously unknown species.** Half of the new species described are molluscs or crustaceans, which justify the share of human resources that are devoted to them during the expedition. Algae, another neglected compartment of tropical marine biodiversity, will also be the object of a targeted inventory. Particular attention will be paid to invertebrate associations[2], notably those involving echinoderms, sponges, hydrozoans, anthozoans, sipunculians (marine worms) and burrowing crustaceans. Rare habitats (deep reef walls, lakes with a subterranean connection to the sea, anoxic micro–habitats and interstitial fauna) will be sampled specifically. Offshore, benthic fauna will be sampled on the sea floor to depths of 1,200 metres.



Distribution of reef-building corals (in number of species). Over 400 species live in the Coral Triangle and its extension toward Papua New Guinea, in red. The number of species diminishes regularly further out from this region, with diversity is at its high (based on Veron, 2007).

[1] Quantitative method for collecting invertebrates associated with coral reefs, these artificial structures are placed on the sea floor and left for several months, the time it takes for invertebrates to settle on them.
[2] Interspecific relationships between species such as commensalism, parasitism and symbiosis.

1

2

1 - The IRD's oceanographic research vessel, the Alis
© Jean-Michel Boré / IRD

2 - The Madang Club, base of the near-shore part of the expedition.
© J. F. Barazer

Documenting marine biodiversity

While the number of species present in a given area does not constitute the only criterion by which to gauge the scientific or heritage value of a site, it is a fact that marine field stations as well as national parks generally target sites with great biological diversity. But how do we measure this diversity? There are as many responses to this question as there are branches of the biological and human sciences. The expedition's methodological objective is to bring together on the same site the three main "schools" of measuring biodiversity, in order to compare methods, processes and results.

Traditionally, zoologists and botanists have been the first category of scientists to collect data on species diversity and this naturalist approach provides a description of global patterns of richness and biogeography (on the scale of a continent or ocean) and in all ecosystems. Taxonomic inventories are nonetheless handicapped in a number of ways, in particular because of the huge amount of time it takes to sort and identify samples, all the more so in poorly-known taxa and or regions. The quantitative ecological approach works best precisely where the naturalists are at their weakest. It relies on replicable protocols but focuses most often on mobile substrates, which are easy to sample, and avoids complex three-dimensional environments such as reef walls, which nonetheless happen to be the most species-rich environments. Those in charge of biodiversity conservation and the management of natural areas are often overwhelmed by just how rich tropical ecosystems are. In complex marine ecosystems, they put in place rapid assessment surveys that concentrate pragmatically on a few indicator biota such as sea mammals, sea turtles, reef fishes, reef-building corals or mangroves. And yet the most species-rich taxa (molluscs, crustaceans, polychaetes) are paradoxically "carefully" avoided because of the difficulties involved in sampling, sorting and identifying them.

The methodological objective of this expedition is therefore to weigh the pros and cons of each means of "measuring" biodiversity in tropical marine ecosystems by simultaneously rolling out all three approaches on a spatial scale meaningful for conservation and management:

- A taxonomic inventory of the "every species counts" type.
- Quantitative sampling
- Rapid assessment survey

Confronting the tenets of the three approaches on the same site will foster the sharing of ideas and points of view, and could, ideally, lead to the development of new protocols for "measuring" biodiversity in species-rich environments where taxonomic expertise constitutes a highly limiting factor.

Substantial human and material resources

The expedition relies on the know-how of the high-level scientists and volunteers behind the success of past expeditions: Panglao 2004 (Philippines), Santo 2006 (Vanuatu) and Atimo Vatae 2010 (Our Planet Reviewed – Madagascar). A complete array of sampling tools (suction sampler, brushing baskets, light traps, dredges, trawl, grab, tangle nets) will be used near the coast by divers off of small boats and offshore from IRD's oceanographic vessel, Alis. In addition, artificial reefs (ARMS: Artificial Reef Matrix Structures) will be submerged during the expedition and collected one year later in late 2013. A field lab will be set up in Madang at Divine Word University to process, sort, photograph and preserve samples collected. After the expedition, exploitation of results will involve more than a hundred of the world's top specialists in the systematics of marine algae, fishes and invertebrates, who will ensure maximum quality for the results and contribute to expanding the expedition's reach.

A new generation of collections, a new way to share results

The curiosity that drives scientists in the early 21st century is the same as that which motivated their predecessors during the 19th century voyages of discovery. The nature of the collections that testify to the biodiversity inventoried has, however, changed significantly. Today samples go hand in hand with digital photos of the living organisms, and tissue samples are taken for DNA sequencing and molecular characterisation of the species. The expedition is expected to yield a sample base of 10,000 marine species, the data from which will contribute to the major international databases, notably GBIF (Global Biodiversity Information Facility), BOLD (Barcode of Life Database) and OBIS (Ocean Biogeographic Information System).

The Papua New Guinea 2012-2013 expedition is the continuation of a partnership begun in 2010 with the University of Papua New Guinea on the occasion of the oceanographic campaign "Biopapua." This partnership involves the participation of local scientists in the field during the expedition and later in the laboratory with the co-authoring of scientific articles, and lastly with the constitution of reference collections for research and education in Papua New Guinea.

Divine Word University of Madang - A part of the university dorms attributed to expedition participants
© J. F. Barazer

3 | A Veteran Team

Philippe Bouchet (National Museum of Natural History), Claude Payri, (*Institut de recherche pour le développement*), and Olivier Pascal (Pro-Natura International), will work with a team of 200 researchers, technicians, assistants and volunteers. Together they already led the Santo expedition in 2006 and the Our Planet Reviewed expeditions to Mozambique and Madagascar in 2009 and 2010.

Philippe BOUCHET, Head of major naturalist expeditions at the National Museum of Natural History

A professor at the National Museum of Natural History (Paris, France) Philippe Bouchet is a specialist of marine invertebrate systematics. The exploration and inventory of unknown fauna has led him to participate or organize major expeditions in three oceans, as well as on remote islands, in particular in the West Pacific. His recent research deals with the species diversity of complex coastal environments and cross-cutting issues in biodiversity like rarity, spatial heterogeneity and endemism. An author of major monographs and a specialist who has described over 500 new species of molluscs, he has also formed and led a large network of high-level amateur specialists who work to consolidate the results of the expedition. He actively participates in various European and international programmes aimed at completing a reference catalogue of marine biodiversity, and is also a member of the International Commission on Zoological Nomenclature.

© Olivier Dubuquoy / MNHN / PNI

Olivier PASCAL, Head of biodiversity projects for the NGO Pro-Natura International

A botanist by training, today Head of Biodiversity for the NGO Pro-Natura International, Olivier Pascal organized the expeditions of the Radeau des Cimes – an inflatable "gondola" that enables the study and inventory of life in the canopies of tropical forests – to Cameroon, Gabon, Madagascar and Panama. After the Santo 2006 expedition in Vanuatu, which he co-directed with Philippe Bouchet, the two men developed Our Planet Reviewed, a large-scale program to inventory biodiversity targeting organisms and regions of the world where information was most lacking. Navigating between careers in "sustainable development" which he practices in impoverished areas of Africa, and in "conservation," he advocates innovative, modern approaches to bolster interest in and attractiveness of the study and preservation of biodiversity.

Claude PAYRI, Head of the joint research group on biocomplexity of Indo-Pacific reef ecosystems (CoRéUs2) at IRD

Senior researcher at the French *Institut de recherche pour le développement* (IRD), Claude Payri conducts research on ecology, taxonomy and phylogeny of marine algae in the South Pacific; on the relationship between habitats and biodiversity and on palaeoecology of coral reefs. Since 2010, Claude Payri coordinates the European programme PACE-Net, the objective of which is to develop a network of scientific and technological collaboration between Europe and the fifteen ACP states (Africa, Caribbean and Pacific). She also participated in coordinating the marine part of the Santo 2006 expedition to Vanuatu.

4 | A Website to Experience the Expedition

As part of its mission to disseminate knowledge, the National Museum of Natural History has created a website dedicated to Our Planet Reviewed expeditions: www.ourplanetreviewed.org

www.laplaneterevisitee.org - www.ourplanetreviewed.org

Aimed at all visitors, the bilingual (French-English) website also includes a special section for teachers to enable them to share the adventure with their students as part of a broader educational project. In addition to the details surrounding the Our Planet Reviewed initiative and information on the previous expeditions to Mozambique, Madagascar and Santo, visitors to the website will find a section devoted to the Papua New Guinea 2012–2013 expedition.

They will be able to view

+ Programme objectives (gaining knowledge about neglected compartments of biodiversity) and what's unusual about it (a new model of expedition, international cooperation, pooling of resources and know-how);
+ Maps to follow the researchers' itinerary;
+ Schedule for the various phases of the mission;
+ Video interviews of organizers and portraits of the participants;
+ Explanations of the methods implemented;
+ Reports on specific themes;
+ Educational resources in the "Teachers" section;
+ Updates on early results from the previous expeditions: Mozambique–Madagascar 2009–2010 and Santo 2006.

Expedition's blog

After the departure of the Papua New Guinea expedition, visitors can stay abreast of its progress thanks to "field notes" published on the expedition's blog. They can also share their comments on line, ask specialists questions on the forum and view photographs of the first specimens collected.

Fans of the expedition can also sign up for the website newsletter and on Our Planet Reviewed's Facebook page www.facebook.com/laplaneterevisitee.

5 | Educational Mission

"Archimedes would certainly have agreed with this principle: any group of students thrown into an authentic scientific environment gets a boost up that opens the mind, stimulates and enriches! For a class, getting involved with a scientific expedition not just as passive observers buy by acting on it and investing in it constitutes a two-fold adventure. They will be able to discover Papua New Guinea, its biodiversity and its inhabitants, and at the same time be immersed in the excitement of research, the conquest of the Pacific and an understanding of the living world and its human issues."

Gérard Bonhoure, Inspector General, S.V.T.
June 2012

An educational programme, to which end?

Since 2006, the National Museum of Natural History's education and training department has developed large-scale educational programmes revolving around the museum's major scientific expeditions: Santo, Southern Seas, and Our Planet Reviewed / Mozambique and Madagascar.
The Papua New Guinea expedition in 2012–2013 offers yet another opportunity to raise student awareness about the scientific and societal issues of the 21st century, and to provide them with building blocks for the construction of rigorous and level-headed thinking on biodiversity within the framework of sustainable development education.

Target audience

Teachers and students of primary and secondary schools, including those in French programmes for vulnerable populations (Éclair, RAR, APV, "excellence" boarding schools).

International outreach!

Teachers and students in establishments from the co-organizing countries of Belgium and Czech Republic, will be able to follow the expedition and get involved throughout the school year.
World, classes in New Caledonia and Papua New Guinea will also participate.

Educational resources:

- Website: providing ideas for classroom projects, interdisciplinary project sheets, scientific data for use in the classroom (images, reports, films, interviews, video conferences, etc.)
- Teacher's correspondent: dedicated to educational aspects of the mission
- Online forum: where students can ask questions of expedition scientists
- Teacher training (Fall 2012): classroom and distance
- Contest (early 2013): aimed at awarding prizes to the best classroom projects for: overall excellence, scientific rigour, originality, creativity, etc.
- Student convention (June 2013): a unique opportunity for students to present the work carried out during the school year to Museum scientists!

© Fort Dauphin french school (Madagascar)

© Patrick Lafaite / MNHN

How to participate?

You will find all the necessary information on our website in the "Teachers" section: www.ourplanetreviewed.org

For teachers who wish their class to follow the educational mission of this project and receive regular updates throughout the school year 2012–2013, please notify **formens@mnhn.fr**

First session

A first presentation for teachers on the mission's scientific objectives and the related educational programme will be held at the Museum in Paris on Wednesday 10 October 2012 at 2:30 pm.
For teachers outside Paris or those who cannot be present, remote training by correspondence is planned for the month of October.

Information and registration: formens@mnhn.fr

6 | A Unifying Project: Papua New Guinea expedition organizers, sponsors and partners

Organizers

National Museum of Natural History

Muséum national d'Histoire naturelle

At the crossroads of Earth, life and human sciences, the French Museum of Natural History has devoted its daily resources to the study of nature for close to 400 years.

Originally established in 1635 as the King's Garden with a medicinal and educational mandate, the royal gardens were transformed in 1793 into the Natural History Museum. Throughout its history, it has been a source of major discoveries thanks to the great minds who over the centuries have taught natural sciences and enriched and studied the collections, always with a view to improving public knowledge.

Today, scientists, teachers, museum specialists, taxidermists, gardeners, and more share the same passion: to better understand nature to better preserve it.

Research at the Museum is grounded in laboratory studies, worldwide expeditions, a multidisciplinary approach, exceptional collections—among the world's three largest—and renowned expertise. Through education and the dissemination of knowledge, it aims to share a better understanding of the world. Its mission is to make knowledge of nature available to as many people as possible and raise awareness about the need to protect our planet.

The Museum is a public cultural, scientific and profession establishment under the double authority of the French Ministry of Higher Education and Research, and the Ministry of Ecology, Sustainable Development and Energy. It employs 2,000 people (of which 500 researchers) trains 350 students per year, houses 69 million specimens in its reserves and galleries and receives over 2 million visitors annually at 12 locations across France.

www.mnhn.fr

Pro-Natura International

Referring to the United Nations conventions on biodiversity, climate change and desertification, PNI seeks to respond to the socio-economic and environmental problems of rural communities in the Global South. Drawing on 20 years of field experience, PNI offers these countries innovative adapted solutions that reduce poverty while respecting other aspects of sustainable develop aimed at protecting and restoring the environment. To break with the vicious cycle of "poverty/environmental degradation," PNI proposes economic solutions that empower populations to improve their standard of living while preserving and restoring natural resources. In particular this means (re) establishing a system of participatory governance.

PNI's principal actions in southern countries:
- Concept and implementation of participatory development programmes;
- Training in participatory development for project managers and local, regional and national authorities;
- Promotion of sustainable agriculture, agroforestry and sustainable forest management;
- Creation and development of small to medium businesses;
- Creation of transboundary conservation zones;
- Environmental and societal impact assessments linked to industrial projects;
- Exploration of tropical forest canopies and conservation of biodiversity;
- Realisation of energy and biomass projects: green carbon technology.

www.pronatura.org/fr

French *Institut de recherche pour le développement* (IRD)

IRD Institut de recherche pour le développement

The IRD is a French public scientific and technological establishment entirely dedicated to research and development under the double authority of the French ministries responsible for research and for cooperation. From its headquarters in Marseille and its two centres in Bondy and Montpellier, it runs operations in fifty countries in Africa, the Mediterranean, Latin America, Asia and the French overseas departments and territories. The IRD aims to respond to the major challenges of development by carrying out research, training and innovation in the South, for the South and with the South, with constant concern for the sharing of knowledge and pooling of skills and resources.
Grounded in a multidisciplinary approach, the projects carried out jointly deal with crucial issues for the Global South: tropical disease, societal development, social vulnerability and inequality, migration, etc., with a view to reaching the Millennium Development Goals.
Now a part of the IRD, the *Agence inter-établissements de recherche pour le développement* brings together a group of French higher learning and research establishments that devote all or part of their activities to development in the Global South. It constitutes a mobilising force, the mission of which is to coordinate and amplify French and European research efforts in favour of development.

www.ird.fr
www.aird.fr

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Sponsors

Longstanding partners of Our Planet Reviewed

Prince Albert II of Monaco Foundation

Founded in 2007 by Prince Albert II of Monaco, the Albert II of Monaco Foundation encourages fair, sustainable management of natural resources, placing humans at the heart of its projects. The foundation provides support for the implementation of innovative, ethical solutions in three main areas: climate change, biodiversity and water.

The Foundation aims to be an accelerator of projects and solutions for the environment. To position itself as a major player in environmental protection internationally, it seeks to develop scientific, corporate and civic networks that are ready to work together toward a common objective.

The Prince Albert II of Monaco Foundation bolsters the initiatives of public, private and corporate organisations in the area of studies and research, technological innovation and citizen practices. It is committed to raising awareness of populations and governments by developing high-impact communication campaigns. To boost and bolster innovation, the Foundation maintains an international science and technology watch.

The Foundation lends an open ear to players and projects with regard to environmental issues and solutions. It offers a platform for discussion between environmental players, mobilises financial support and endeavours to implement socially responsible investment tools.

www.fpa2.com

Total Foundation

Founded in 1992 in the wake of the Rio Summit, the missions of Total's corporate foundation have been dedicated for the past fifteen years to protecting the environment and particularly marine biodiversity. The Foundation focuses on three main areas: research, restoration of threatened ecosystems and awareness campaigns. All of these actions are carried out thanks to partnerships with research institutes, NGOs and institutional players that are recognised in their field of expertise.

The Foundation supports more than 160 programmes in 40 countries covering a wide variety of coastal and marine ecosystems. Since 2008, the Foundation has broadened its scope of patronage to include two other areas: Culture-Heritage (Louvre, Arab World Institute, Quai Branly Museum) and Health-Society-Education (preventative health, road security, education in priority areas)

In addition to the National Museum of National History, the Total Foundation also has partnerships with France's Port-Cros National Park, the French Coastal Conservancy, Ifremer, the Tour du Valat research centre, the IUCN (International Union for Conservation of Nature) and others. They all share recognized skills in assessments, research and conservation in the area of biodiversity.

More than 15 years ago, the Museum and the Total Foundation established a partnership in the fields of geoscience (as part of the Year of Planet Earth) and mineralogy (acquisition of minerals and launch of virtual gallery), two disciplines close to Total's core business, as well as in the environmental sciences. Before the naturalist expeditions to Madagascar and Mozambique, the Foundation sponsored the marine expedition to Lifou (New Caledonia), Rapa (French Polynesia), Panglao (Philippines) and Santo (Vanuatu). It also funds research programmes on the taxonomy and genetics of marine species.

www.fondation.total.com

The Stavros Niarchos Foundation

The Stavros Niarchos Foundation is one of the world's leading international philanthropic organizations, making grants in the areas of arts and culture, education, health and medicine, and social welfare. The Foundation funds organizations and projects that exhibit strong leadership and sound management and are expected to achieve a broad, lasting and positive social impact. The Foundation also seeks actively to support projects that facilitate the formation of public-private partnerships as effective means for serving public welfare.

From 1996 until today, the Stavros Niarchos Foundation has approved grant commitments of €978 million/$1.275 billion, through 2,262 grants to nonprofit organizations in 109 nations around the world.

The Foundation, concerned at the continuing socio-economic crisis in Greece, announced in January 2012 a grant initiative of €100 million ($130 million) over the next three years to help ease the adverse effects of the deepening crisis. Since the beginning of the year, and as part of the initiative, the SNF has committed grants totaling €24 million ($31.5 million) in support of numerous not-for-profit organizations around the country.

Maintaining biodiversity has become an essential part of addressing the issue of climate change. Having already supported two scientific expeditions, Santo 2006 and Mozambique/Madagascar, the Directors of the Stavros Niarchos Foundation approved during the Board's Fall 2011 meeting a new grant for the upcoming expedition, Madang 2012, in Papua New Guinea, which is organized also as part of the scientific expedition project Our Planet Reviewed.

www.snf.org

Support for the Papua New Guinea expedition

The EDF Foundation

The EDF Foundation extends the EDF Group's societal and environmental commitment. Its actions promote the sharing of knowledge and planetary preservation. Its priority lies in showing solidarity wherever the need is most pressing. A foundation in the service of humans and environments, its mission is to intervene in areas of society, science and environment.
Committed alongside those who bring answers to the major issues of our society: local associations and partners on the ground, the Foundation provides priority support to the development of targeted, concrete programmes throughout France and its overseas territories and internationally. In keeping with the Group's strong attachment to public service and the public good, it also relies on initiatives by employees and their strong capacity for mobilisation on which it calls for the projects it assists.

http://fondation.edf.com

Entrepose Contracting

Entrepose Contracting is a group specialised in industrial gas and oil projects and more generally in traditional and renewable energy. From transport and storage solutions to turnkey project delivery, the Group has developed skills in engineering and managing environmentally sensitive projects. Drawing on its entrepreneurial culture and recent acquisitions specialised in underwater freshwater research, geothermal drilling and the fight against marine pollution, Entrepose Contracting attaches great importance to developing energy solutions that respect the environment and contribute to the development of local quality of life.

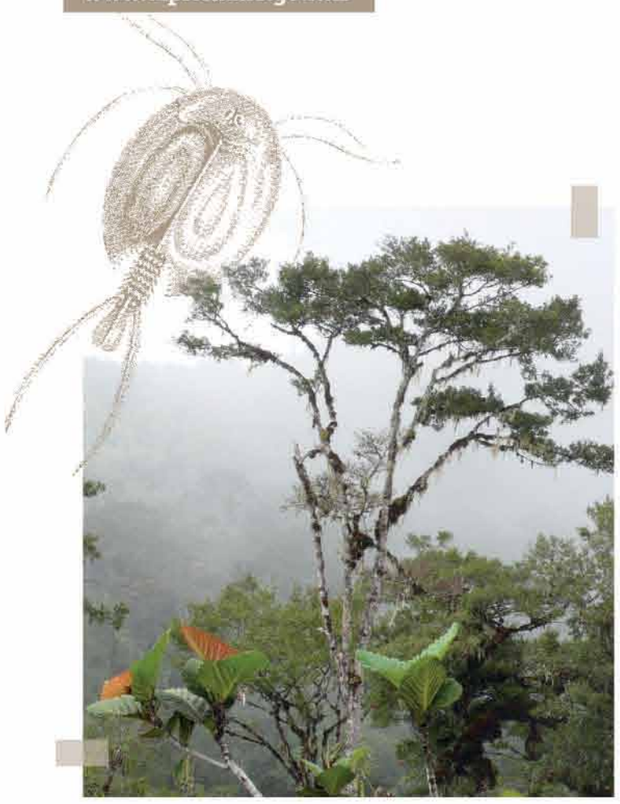
www.entrepose.fr

Financial partners

The French Pacific Fund

Founded in 1985, The French Pacific Fund is dedicated to economic, social and cultural cooperation and is overseen by the French Foreign Affairs Ministry's Permanent Pacific Bureau. Its mission is to promote the regional integration of New Caledonia, French Polynesia and Wallis and Futuna through regional actions carried out with the Pacific states and Oceanian civil society. Its focuses reflect those of other French local authorities: sustainable development (in terms of health, environment, agriculture and economy), training, education, sports, scientific and academic cooperation, Pacific island heritage, and the French language.

www.diplomatie.gouv.fr



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The Government of New Caledonia

During the French Pacific Fund steering committee meeting of 9 February 2012, the Government of New Caledonia offered to add to the funds granted by the Permanent Pacific Bureau in support of the Papua New Guinea 2012–2013 expedition, thereby joining in the efforts of the large-scale scientific initiative Our Planet Reviewed. The size of the grant underscores New Caledonia's interest in the conservation of the planet's biodiversity, particularly in the vast Pacific region. Thus, after providing support for the Santo 2006 expedition to the Republic of Vanuatu, New Caledonia is supporting the Papua New Guinea 2012–2013 expedition. This project prefigures a similar endeavour planned for New Caledonia in 2014–2015 and provides New Caledonia students with the chance to participate in this expedition and get parataxonomy training.

www.gouv.nc

The Reef Foundation

The Reef Foundation is a not-for-profit organization constituted for the purpose of supporting all aspects of coral reef research with a special focus on taxonomic diversity. The Foundation has supported research throughout the Atlantic, Pacific, and Indian Ocean reef systems, as well as educational courses on Australia's Great Barrier Reef. The Foundation is committed to developing accurate scientific measures of coral reef biodiversity that can demonstrate system change due to both natural and anthropogenic causes.

Scientific & institutional partners

The University of Papua New Guinea

Founded in 1965 and based in the capital Port Moresby, the University of Papua New Guinea trains annually 15,000 students on 18 campuses and research centres throughout the country. Its scope covers medicine and health sciences, physical and natural sciences, law, business, humanities and social science. The university prides itself on having produced the country's elite, including several prime ministers, secretaries of state, high-level civil servants, magistrates and business leaders. The university is partner to the expedition through its School of Physical and Natural Sciences.

www.upng.ac.pg

The Binatang Research Center

Founded in 1997, the Binatang Research Center (BRC) is an independent non-profit organization dedicated to training Papua New Guineans as research technicians (parataxonomists and paraecologists) and doctoral students. The BRC's primary focus is on environmental science and research in biology, more specifically on the ecology of plants and insects. It is one of the world's top two establishments for paraecology training. In order to bring traditional nature-related skills to modern biology, the BRC endeavours to combine the creative potential and knowledge of the young people in training (often without formal education and coming from communities living in rural environments) with local and foreign students and researchers. Based in Madang, the BRC employs 18 paraecologists and 4 supporting staff, and welcomes 2 to 6 doctoral students yearly. It also receives foreign students and researchers.

www.entu.cas.cz/png

The Royal Belgian Institute of Natural Sciences

The Royal Belgian Institute of Natural Sciences has for mission natural science research, the provision of expertise for public authorities, the preservation and management of its collections, and public dissemination of knowledge. Its scope of research extends to: biodiversity; evolutionary mechanisms; terrestrial, freshwater and marine ecosystems; the history of life, climate and human installations; Belgian geology and the modelling of the North Sea. Its collections boast 37 million specimens. The Museum offers 16,000 m2 of permanent galleries, temporary exhibition halls, and educational workshops, and welcomes 300,000 visitors yearly. Its dinosaur gallery, Europe's largest, is world renowned.

www.sciencesnaturelles.be

The Divine Word University of Madang

The Divine Word University (DWU) of Madang is a young university, founded in 1996. It trains students in 6 faculties on its Madang campus and throughout the country through its e-learning programmes. The heir to missionary know-how in matters of self reliance and community service, DWU has its own Internet hub, publishing house and an exceptional library including 42,000 titles as well as unequalled access to e-books, e-journals and on-line databases.

www.dwu.ac.pg

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