Summary

List of tables and figures

1. Identification of the property in series

Located in the Southwest Pacific, the reef formation of New Caledonia is stretched on 5° latitude, between 18° and 23° South latitude, and on 6° longitude, between 162° and 168° East longitude. With its 23 400 km² of lagoons and its 8 000 km² of reef structures, this reef construction is completely remarkable and represents one of the most varied and most vast reef formations of the world. This overseas French territory is made up of a main island, the "Grande Terre", the Loyalty Islands to the East, the Isle of Pines to the South, the Belep to the North, islands of volcanic origin (Matthew, Hunter,...) and the atolls of Huon, Surprise, Beautemps-Beaupré, Chesterfield and Bellona, forming an Exclusive Economic Area of approximately 1 368 588 km².

Since thousands of years the coral reefs and associated ecosystems of New Caledonia are privileged areas of exceptional ecological and biological processes. This archipelago was preserved by a reasonable use of the habitat and presents a conservation state rare on the scale of the planet.

Therefore the inscription project to the UNESCO's world heritage list took into consideration representative series of the high biological sea diversity, of the richness and the multitude of coral reefs and associated ecosystems of New Caledonia.

The property proposed to UNESCO is a property in series composed of six marine areas (see table 1) that includes all types of ecosystems, from the mangrove to the reef barrier. The name proposed for the inscription is: "**The lagoons of New Caledonia: reef diversity and associated ecosystems**".

The sites making up the property in series were identified based on the results of the Ecoregional Analysis (AER) set up by the WWF France within "the Initiative for the Coral reefs of the South Pacific" (CRISP program) and is based on solid scientific data. Within the AER, a group of scientists and experts located, thanks to their expert knowledge, the most remarkable areas of New Caledonia's lagoon formation on which the conservation efforts must focus.

Number of the marine area	Name	Local authority	Number of towns concerned
1	Great South Lagoon GSL	South Province	3
2	West Coast Zone WCZ	South Province	5
3	North and East Coast Zone NECZ	North Province	7
4	Great North Lagoon GNL	North Province	1
5	D'Entrecasteaux Atolls DEA	New Caledonian government	1
6	Ouvea Atoll and Beautemps-Beaupré OABB	Loyalty Islands Province	1

Table 1: Implied authorities in function of the property in series

The total area of the property in series and of the marine and terrestrial buffer areas combined is 2 861 400 ha (28 614 km$^{2)}$. The total marine area of the property is 1 574 300 ha (15 743 km^2) and represents close to 60% of the total surface of New Caledonia's lagoons and coral areas. Therefore we can apprehend all the complexity of coral habitat and associated ecosystems which are composed of an exceptional diversity of morphologies, physical environments, habitats and biodiversity.

The definition of the six marine areas finds its basis according to the legal and institutional realities of New Caledonia, scientific facts as the 100 m fathom line for the reef falls on the seaside, the highest foreshore and the intersection of mangroves for transversal limits on land.

Number of the marine area	Size of the marine area (hectares)	Size of the marine buffer zone (hectares)	Size of the terrestrial buffer zone (hectares)
1	314 500	313 100	15 800
2	48 200	32 500	171 300
3	371 400	100 200	284 500
4	635 700	105 700	6 400
5	106 800	216 800	0
6	97 700	26 400	14 400
Total	1 574 300	794 70	492 400

Table 2: Size in hectares (ha) of the six zones of the property in series.

Figure 1: Great South Lagoon, Améré Island *(P. Larue)*

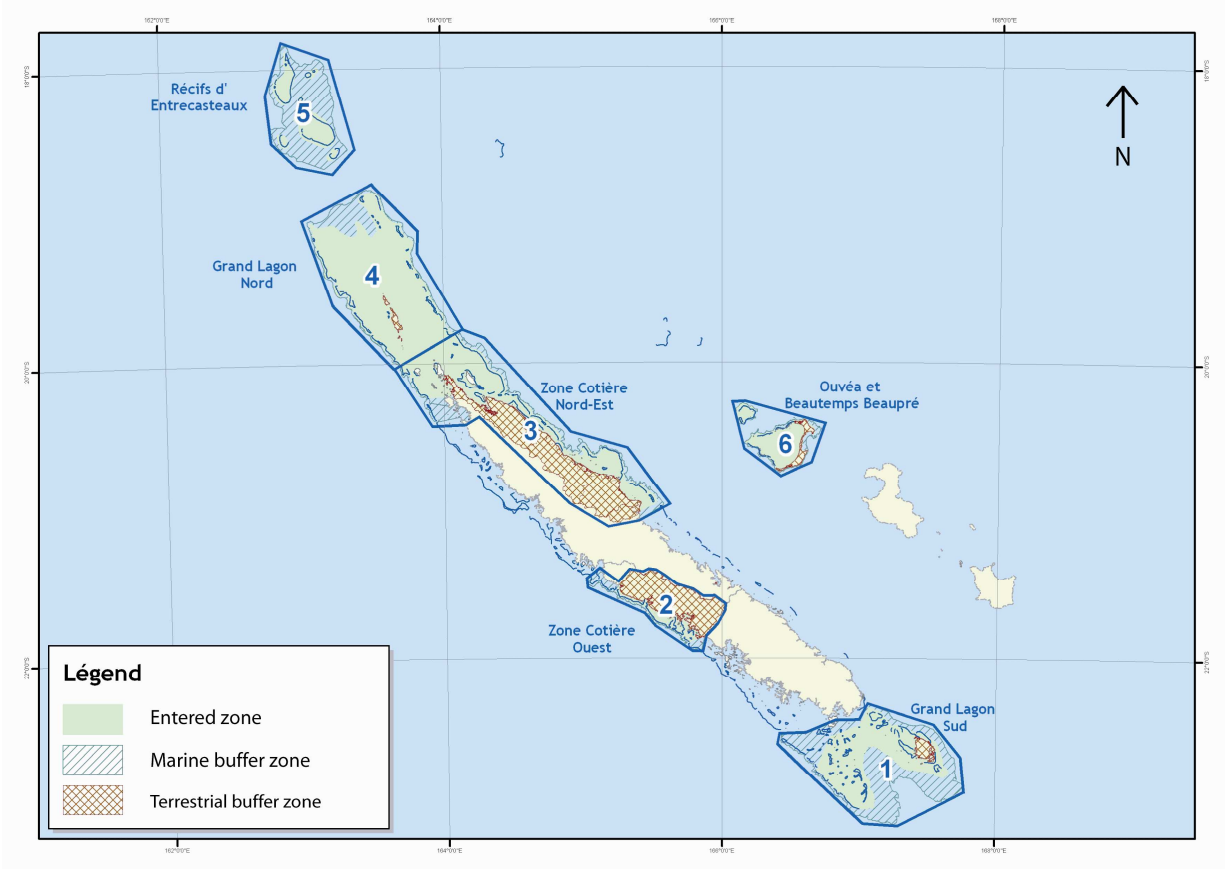

Figure 2: Map of the property in series

The definition of the buffer zones is based on physical, biological, geometrical, legal and visual characteristics such as:

- A fathom line between 100 and 1000 m for the reef falls,
- Catchment basin on land and related ecosystems which presents a major interest in terms of conservation,
- The distance up to the coast,
- The consideration of the catchment basins associated to the the buffer zones as buffer zones,
- Visible marks in the landscape for the definition of the buffer zones by the public.

An existing protection and management program of the whole marine habitat already occurs in New Caledonia at the scale of the property in series. New management plans are being developed (integrate and participative management) and they will give the opportunity to acquire a solid experience in terms of concerted management. Theses recommendations will occurs later on all Caledonian reefs. The aim of the different concerned stakeholders is to enlist 60 % of the coral and lagoon habitat in order to protect finally 100% of this area.

2. Justification of the inscription

New Caledonian coral reefs have been identified by the scientific community to present a exceptional universal value such as:

- The second most vast reef formation in the world and the presence of one of the rare “second reef barrier”,
- A very large diversity of coral formations,
- Major nesting sites of sea turtles and in particular the green turtles (*Chelonia midas*),
- Breeding areas of emblematic or threatened species (dugongs, humpback wale, sea birds),
- Presence of many endemic molluscs, of critical marine habitats (mangrove, sea grass fields) and a large number of floral and faunal marine species.

The property in series thus meets two criteria of the UNESCO: **criteria IX** (examples representing ongoing ecological and biological processes) and **X** (significant natural habitats for the in-situ conservation of biodiversity). But beyond these main characteristics, because of its attractive appearance and its geological nature, the property also meets **criteria VII** (exceptional natural beauty) and **VIII** (examples representing the major stages of the earth's history).

The six marine areas entered for the inscription to the world heritage list reveal an exceptional diversity of morphologies, physical environments and habitats and an important biodiversity. This structure gives utterance to the complexity of the coral ecosystems and the intimate interrelations between mineral, plants and animals.

The richness and diversity of landscapes gives to this structure a unique and grandiose beauty and a rare aesthetic known worldwide.

The identified sites regroup many essential aspects presenting an exceptional and universal geological value. The property in series is representative of the geodynamical cycles sculpting the surface of Earth (obduction, subduction, erosion, sediment-ation, variation of the sea level).
The property in series is composed of a large diversity of geomorphological formations and reef types. This structure contains marine and continental domains.

Certain aspects of living sea organisms are examples representative of ecological and biological process which are occurring.

The geomorphological diversity and the variety of physical environment are at the basis of a large number of features developing a multitude of habitats such as coral reefs of all nature (barrier, fringing reef, isolated…) but also the different types of mangroves, phanerogam sea grass fields, etc.

The varied habitats accommodating many emblematic or rare species give the opportunity to develop in-situ conservation of the biological diversity. Many important species in terms of conservation stakes on a regional and international scale are present in the property in series, such as dugongs, sea birds and sea turtles.

3. Proposed sites for inscription

3.1. Site 1: The Great South Lagoon

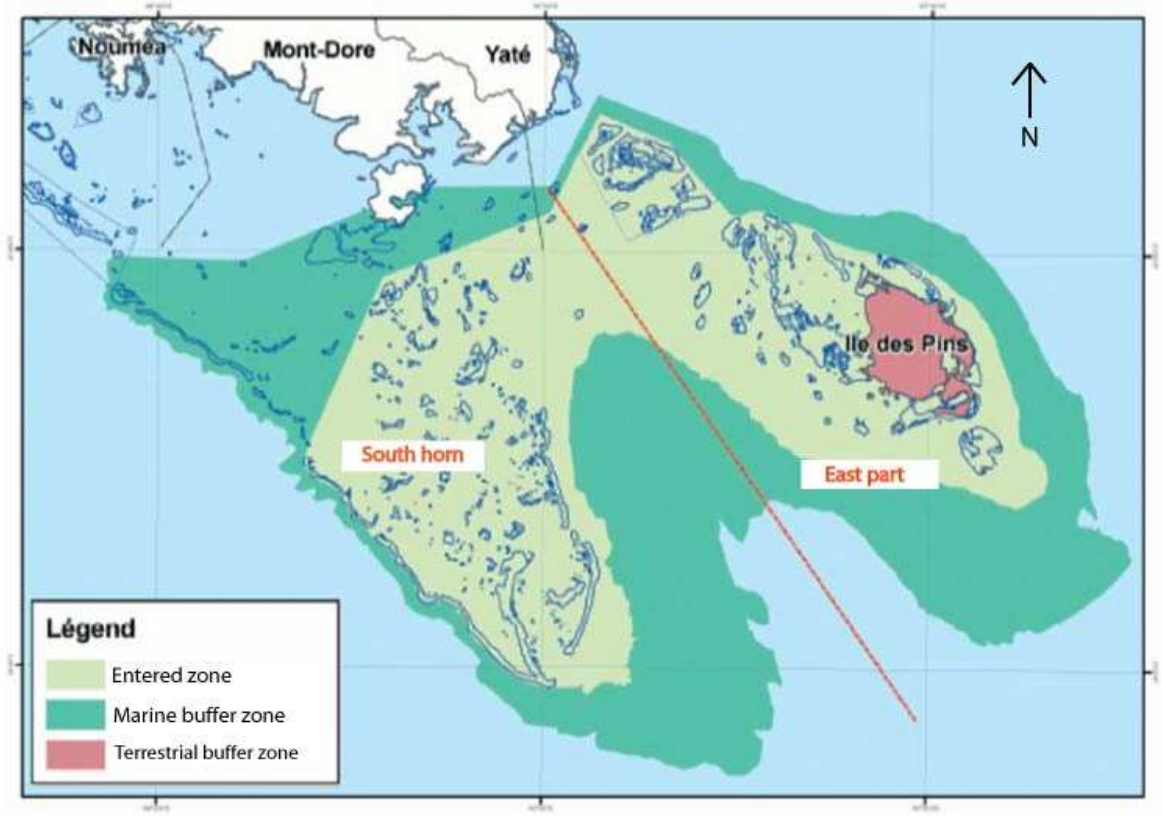

Figure 3: Map of the Great South Lagoon

The Great South Lagoon is composed of two distinctive zones separated by their morphological and reef types: the East part and the South horn. This site is very interesting due to its transitional zone between many different communities (subtropical/tempered populations).

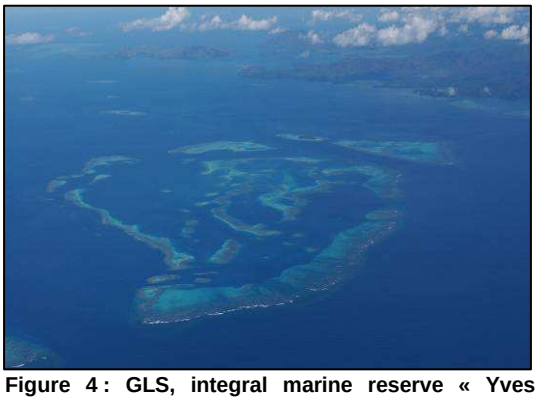

Figure 4 : GLS, integral marine reserve « Yves Merlet » *(M. Dosdane)*

Such area might be used as a witness for global climatic changes.

The entire site was identified to have an "international interest" in terms of conservation.

Reef typology and habitat

In terms of geomorphology and characterisation of reef structures, the Great South Lagoon accommodates a large variety of reefs on a small area. The West zone has an external barrier with 10 fairways and also lagoon and interior sea coral structures. The East zone is much diversified and is characterised by the presence of a continental island and a coast reef barrier.

Figure 5: GSL, coastal bays and reefs of the "Ile des pins" *(M.Dosdane)*

Biodiversity:

The biodiversity of this area is characteristic of cold water and the species present are closer to the ones of New Zealand than the species of the rest of New Caledonia, in particular the ascidies, sea urchins, sponges and algae.
This area contains the highest fish biomass in New Caledonia. We can find subtropical water fishes which are not or nearly not listed elsewhere then in New Caledonia.

Emblematic species:

Three species of sea turtles *(Chelonia mydas, Eretmochelys imbricata, Caretta caretta)* and five species of sea mammals (hump back wale: *Megaptera novaeangliae* ; dugong : *Dugong dugon* ; spinner dolphins: *Stenella longirostris* ; bottlenose dolphin: *Tursiops truncatus* ; minke whale: *Balenoptera acutorostrata*) are found in the Great South Lagoon. This region regroups 12 species of nesting sea bird and the remarkable density of ospreys is exceptional for the avifauna. Among these species four only nest on the zone.
The Great South Lagoon is the principal breeding area for the hump back whale (*Megaptera novaeangliae*) and where they could give birth.
This marine area is also a site for the green turtle's nesting (*Chelonia mydas)* and it's in this region that you find most important population of white shark (*Carcharodon carcharias)* in New Caledonia, threatened specie listed on IUCN.

Figure 6: GSL, reefs around the Nokanui Island *(M. Dosdane)*

3.2. Site 2: West Coast Zone.

Figure 7: Map of the West Coast Zone

This zone which contains four protected marine areas (special marine reserve of "Ouano", the "Roche Percée", the "Ile Verte" and "Poé" is characterised par remarkable sites such as:

- The Poé fault, a thin crack in the reef and the lagoon of the north of the bay of Bourail. The depth of this fault goes up to 20 meters and was an old stream bed. It looks like an underwater canyon with heavy current and frequented by numerous and big shark and pelagic species.
- The Moindou bay and the coast of La Foa remarkable by their vast mangroves, estuary and the proximity of the reef barrier.
- The turtle bay and the "Roche Percée" site.

Reef typology and habitat:

This zone is characterised by the proximity of the reef barrier to the coast which becomes a very thin "so called lagoon" which doesn't allow any shipping. The Bourail bay, in a central position is characterised by a large opening in the reef barrier allowing the swell to come and crash on a one of the rare rocky facies of the New Caledonian coast.

The North and South tips of the West Coast Zone presents mangroves very well developed. Although the silt bottoms aren't very developed in this zone, there exist many shallow sea grass fields where many juveniles of commercial species can be found.

Biodiversity:

Due to the small number of facies in this zone in comparison to the scope of the whole Caledonian lagoon, the biodiversity is quiet small. Although we can note that:

- Mangrove crabs *Scylla serrata* is abundant at the North and the South of this zone where traditional fishing is occurring,
- The turtle bay, north of Bourail, has a rocky coast, carved by the waves and the swell which allows the presence of rare algae.

The Poé fault is one of the most remarkable sites of the West coast for the ichthyologic fauna. It is an area of concentration of big

fishes and a permanent shelter for emblematic species (giant wrasses and shark in particular) and a temporary stop for many other species (giant manta, big Serranidae, big Arangidae…)

Figure 8: West Coast Zone, Fault of Poé *(P. Larue)*

Emblematic species:

Off-shore of La Foa, the small island called N'Digoro (Ouaraï fairway), is a nesting site of three sea birds which are represented by a hundred of couples. This island, located in the marine reserve of Ouano, and the presence on the coast of Temrock of an important community of wedge-tailed shearwaters *(Puffinus pacificus)* reinforce the interest of the West Coast Zone in terms of conservation.

The most important nesting site for the loggerhead sea turtle (*Caretta caretta)* is located on the coast of the town of Bourail (beach of the "Roche Percée"). This Caledonian population represents between 10 and 20% of the total population of the Pacific.

And it's exclusively on the rocks of the bay of turtles that lives some specimens of the lobster of Bourail *Panulirus homarus* in small populations. It's a rock lobster with a wide distribution over the Pacific but which is living in a restricted habitat in New Caledonia.

Figure 9: "La Roche Percéee" and the turtle bay. *(M. Dosdane)*

All the fairways of the West coast are very important habitats for dugongs as they were located there for several days. **The populations of this zone are the most important ones in New Caledonia.**

Figure 10: West Coast Zone, dugong, *Dugong dugong (P.Larue*

3.3. Site 3: North and East Coast Zone

Figure 11: Map of the North and East Coast Zone

The North and East Coast Zone is vast and is divided into four under-zones. They have specific characters as they contain populations of different fishes and systems. The level of knowledge between these under-zones is nearly similar.

North-West Sector: under-zone 1

Reef typology and habitat:

The originality of this zone is the presence of "high" continental islands such as Yandé or Néba, which are unique in new Caledonia thanks to their size, their altitude and their proximity to the reef barrier.

Biodiversity:

This zone is characterised by a high specific richness of fauna and flora even if the most of theses organisms are quite common to the Caledonian lagoons and reefs. Theses particularities can be explained by different factors:

- The average temperature of the water is generally higher by about two degrees Celsius in comparison with the lagoons of the South of New Caledonia.

- The wide sedimentary plains of the lagoon, more muddy type which presents a particular facies due to the important inflow of the most important river in New Caledonia, the Diahot.

This zone contains fish biomasses higher than the average biomass elsewhere in New Caledonia. A very high density of reef sharks, Malabar groupers (*Epinephelus malabaricus*) and of the two-striped sweetlips (*Plectorhinchus albovittatus*) can be observed there.

Figure 12: Double-headed parrotfish, *Bolbometopon muricatum (J. Le Quere).*

Emblematic species:

This zone contains seven species of sea snakes which are observed quite often. The big reef of Néném a, boarding the zone on the West, is sheltering many double-headed parrotfishs (*Bolbometopon muricatum)*. This underwater area has a high density of emblematic species such as giant wrasses, sharks, big Serranidae and Haemulidae, “Pouattes” (*Lutjanus sebae*), giant manta and golden trevally. **The “Koumac-Poum-Ouéga” zone contains 75% of the small islands of the North Province where most of the sea birds in this region are nesting.**

North-East Sector : under-zone 2

The AER has put in evidence the international interest of this zone in terms of conservation.

Reef typology and habitat:

The North and the estuary of Diahot have various typologies as it’s divided in four big groupes:

- The external reef barrier (Cook’s reef) has an external slope quite large and a shallow lagoon terrace which allows very big coral constructions,
- A fringing reef protected by the lagoon boarding the “Grande Terre”,
- The imbricate reef barrier of Tiari and the coastal reef barrier of continental islands around the Balabio Island,
- Some groups of lagoon coral reef masses.

Figure 13: Leafy coral *(IRD)*

Biodiversity:

The marine area contains many habitats on a short distance. Therefore, the dense estuary mangroves contain all the floral species of the mangrove such as *Rhizophora sp.* and other remarkable species (*Ceriops sp*.). The sea grass fields cover very important areas and they have a very important habitat role for commercial species and are a nursery for certain families of fishes (Gerreidae, Lethrinidae, Lutjanidae). The unconsolidated strata of the bottoms between the Diahot and the last small islands at the West of Balabio are characterised by turbid water with branchy corals (*Acropora sp*.).

Emblematic species:

We can find breeding areas of the green turtle (*Chelonia mydas)* and groups of dugongs (*Dugong dugon).*

East sector: under-zone 3

Reef typology and habitat:

This site is exceptional by the presence of a fringing reef and a reef barrier very close to the coast. It is also remarkable by the presence, at Hienghène, of two reef barriers not distant enough to call them double barriers. **The whole zone is boarded by swamps with frontal mangrove (nearly 1 200 ha between Ouégoa and Pouébo) extended directly on the lagoon. Thus on a few kilometres varied habitats such as mangroves, fringing reefs and reef barriers are grouped.**

Biodiversity:

For specialists, the external slopes of this zone are in very good condition with a soil occupation by living organisms very dense and huge coral structures. On the other hand the interior slopes are in bad condition due to the important destructions by cyclones. More North the number of lagoon facies is more important with sea grass and algae fields mixed together. The Ouaième estuary is particular for the breeding of sharks.

Emblematic species:

It seems that the dugongs prefer the habitats of the West and North-East coast but some sedentary specimens can be observed on that coast. While the austral winter, the hump back whales (*Megaptera novaeangliae*) enters the lagoon and come to get a shelter in this zone which is also a nesting area for the loggerhead sea turtle *(Caretta caretta).*

South-East sector: under-zone 4

Reef typology and habitat:

The fringing reef is quite narrow but follows all the coast line. In this zone the bottom separating the fringing reef and other reefs is deep (40-60 m) and allows independence to each type of reef. The lagoon is separated in the length by a succession of small islands and reefs. The coast is separated by rivers developing small mangroves. This zone is also remarkable in the North by the size of the reef barriers and intermediates which forms a double row of reefs.
A tribal protected area with nearly no fishing activities contains double reef barriers at the North of the Atit Island. Near Hienghène, the coast is characterised by particular geological structures, such as the famous “hen” of Hienghène, a limestone formations which wasn’t created by corals.

Figure 14 : « Poule de Hienghène » *(GIE tourisme Nord)*

Biodiversity:

This zone is definitely the richest of New Caledonia in terms of marine biodiversity (algae, marine invertebrates and fishes).

The ichthyologic fauna is very abundant and varied concerning sedentary and semi-pelagic species. Some species, quiet rare elsewhere, became here emblematic species for the diving tourists of Hienghène. These species are the ribbon moray (*Rhinomuraena quaesita)*, the weedy scorpionfish (*Rhinopias aphanes),* the double-headed parrotfish (*Bolbometopon muricatum)* and the golden trevally (*Trachinotus blochii)*.

Emblematic species:

The East lagoon, as the Great South Lagoon, is a nursery zone for the hump back whales. The proportion of followed females and observed behaviours enlightens on the fact that this coast is a privileged shelter for them. Between September and October, the physeter catodon (*Physeter macrocephalus)* migrating north are passing by in the high sea.

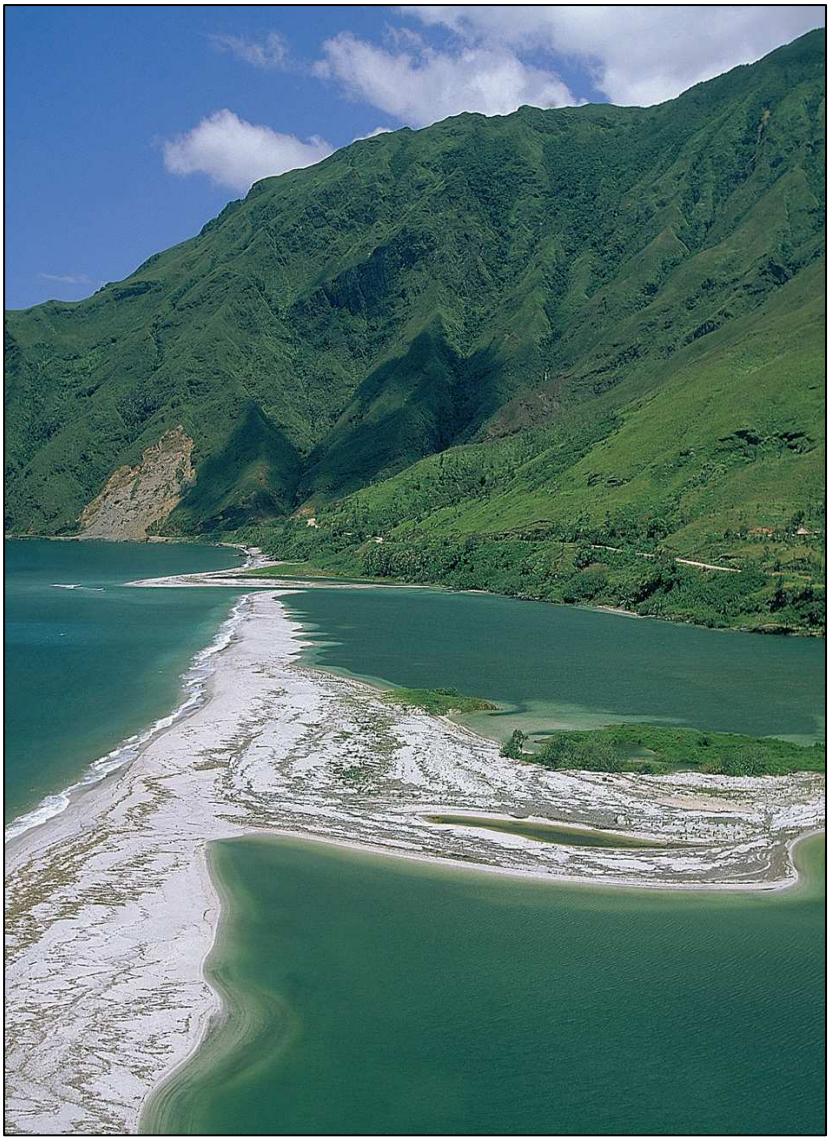

Figure 15 : The « Ouaième » estuary *(GIE Province Nord)*

3.4. Site 4: The Great North Lagoon

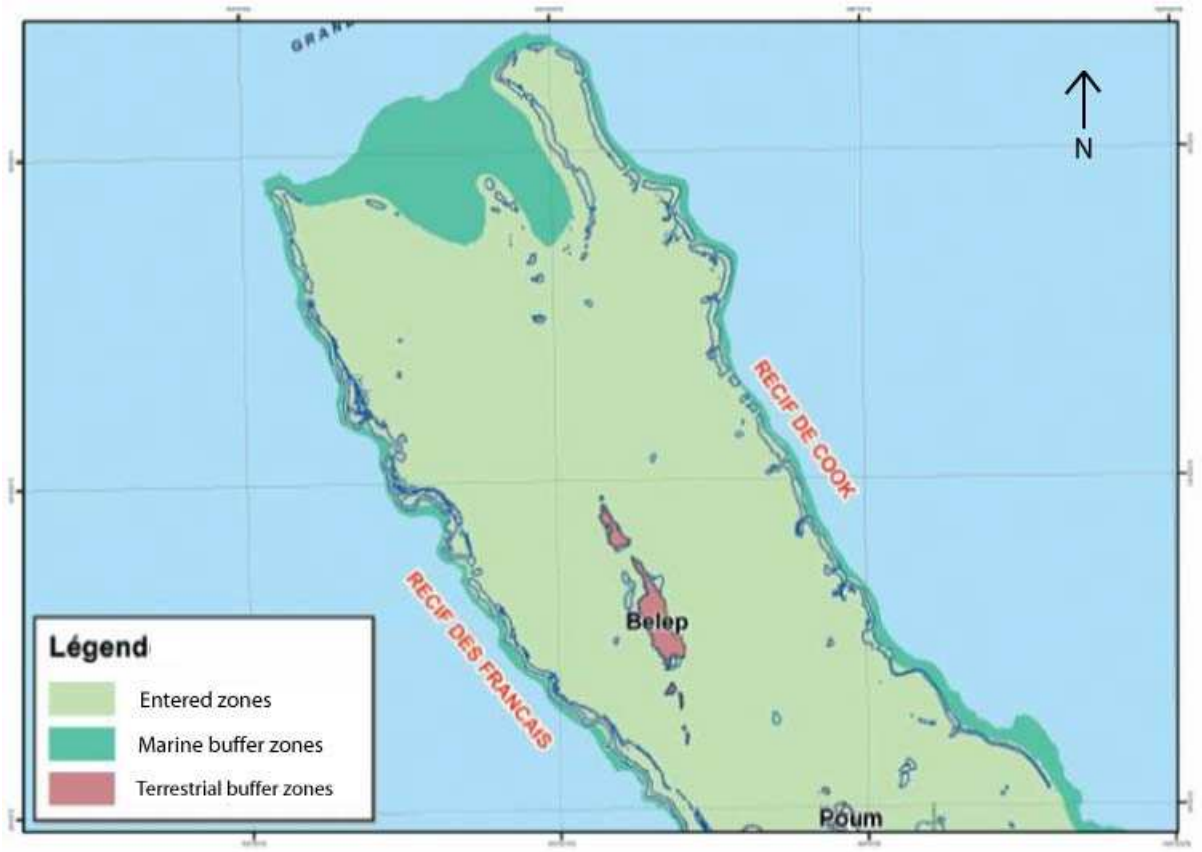

Figure 16: Map of the Great North Lagoon.

The Great North Lagoon is different of the South and South-West lagoon due to the higher latitude (3 to 4 degrees more North), an important depth and the total absence of small coral islands. This zone distant of more than 400 km of Noumea is less known than the other lagoons. The whole structure is surrounded by two big reef barriers prolonging the barrier of the "Grande Terre":

- Cook's reef on the East coast alignment.
- The French's reef on West coast alignment.

Figure 17 : « Yandé » Island *(N. Cornuet)*

Figure 18: Giant wrasses, *Cheilinus undulatus* *(H. Zone)*

Reef typology and habitat:

The Great North Lagoon is more homogeneous than the Great South Lagoon. This huge lagoon with a width of 50 km and a length of 170 km has a rectangular shape. With an area estimated of 8 400 km², it represents more than a third of the total area of the New Caledonian lagoons. The north part of this lagoon is open to the sea by a 20 nautical miles fairway, called the "Grand Passage", separating the North lagoon from the d'Entrecasteaux reefs. The most North-East point is curved on it's self and has created a kind of atoll orientated North-West/South-East. Four sites are remarkable.

- The French's reef characterised in some areas by a double barrier with a calm lagoon between the two.

- The Cook's reef, particular by the orientation of the dominant winds blowing on the lagoon side.

- The Belep islands and auxiliaries toured by fringing reefs and big sea grass fields (mostly in the West), are fragments of the mountain chain crossing the whole of New Caledonia.

- The "Arche d'Alliance" reef forming an oasis in this lagoon plain.

It is important to note the presence of a zone of imbricate reefs and of 23 fairways for the Cook's reef. The French's reef has only 6 of them.

Biodiversity:

The fairways, the south parts of the French's reef, the isolated "Arche d'Alliance" reef and the Cook's reef are the most remarkable areas regarding fishes. It is possible to observe exceptional fish density in some areas, such as the fairway at the West of Belep or the North-West point of the "Grand Passage". The "Arche d'Alliance" contains also high density of certain lagoon species (Lutjanidae and Lethrinidae especially).

Figure 19: Group of *Lutjanus kasmira (P. Larue)*

Emblematic species:

The French's reef contains a large population of double-headed parrotfish (*Bolbometopon muricatum*) and an interesting density of giant wrasses, sharks, big Serranidae and Haemulidae.

A high density of Malabar groupers (*Epinephelus malabaricus)* was also observed in this area.

The Great North Lagoon can also contain some hump back whales, by single specimen, by couple, followed females or by groups. The East lagoons might be a transit zone for mature specimens between the Great South Lagoon and other breeding areas located in the Great North Lagoon, the Loyalty Islands or in Vanuatu, areas where observation have still to be done.

Figure 20: Hump back whale *(GIE tourisme Nord)*

3.5. Site 5: D'Entrecasteaux Atolls

Figure 21: Map of the d'Entrecasteaux atolls.

Up North from the "Grand Passage", a narrow and deep (500 to 600 m) fault, are located the d'Entrecasteaux atolls which Huon and Surprise atolls are the largest. This archipelago is composed of Surprise, Huon, Le Leizour and Fabre Islands. These islands and auxiliaries have an interesting interest by their isolation and the degree of their integrity. Some recent researches enlightened the very good stat of conservation of these coral reefs.

Reef typology and habitat:

These are the most northern coral reef of New Caledonia. The water temperature can be 5 or 6°Celsius hotter than the southern reefs of the "Grande Terre".
This marine habitat is mainly characterised by the presence of oceanic atoll's reef quite diversified with huge atoll lagoons more or less deep.

Figure 22: Masked Booby, *Sula dactylatra (C.Grondin)*

Biodiversity:

Recent researches have determined a very good stat of conservation of the d'Entrecasteaux reefs. On the 20 stand areas which occurred in this research, living coral represents 26% of the substrate (23% on the internal slopes and 30% on the external slopes). The most present species are the branchy Acropora followed by crusty corals, massif and sub-massif.
The flora on the small islands is characteristic of insularly zones of the neo-caledonian archipelago. It contains 29 different species, representing 20 families. For the essential it is dicotyledonous phanerogams, grass and a surprising fern (*Microsorum scolopendrium).* There are also three species of invasive plants (*Colubrina asiatica, Cassytha filiformis* and *Leucaena leucocephala*). Their populations are distributed in spots and are localised.

Emblematic species:

The numerous sea birds on the whole d'Entrecasteaux Island give an international interest to this marine site in terms of conservation.

Figure 23: Copulation of turtles *(P. Larue)*

This marine area is entered as "A4ii IBA category" (Important Bird Area) by "Birdlife International". The avian fauna is very important for sedentary species such as *Fregata minor, Fregata ariel, Sula dactylatra, Sula leucogaster, Sula sula, Phaeton rubricauda*, *Anous stolidus*, *Anous tenuirostris* et *Rallus philippensis*.

Numerous terns come to lay their eggs (*Sterna bergii, Sterna fuscata* and others). The sooty tern (*Sterna fuscata serrata*) are nesting on the four islands of Huon, Surprise, Le Leizour (18 300 couples in 2001) and Fabre (18 000 couples en 2001). The sooty tern's population is over 10 000 couples representing 1% of the total population. We can also find on the four islands three species of booby (red footed booby, masked booby, brown booby) and two species of frigatebirds on the Surprise Island, the Pacific frigatebirds (*Fregata minor palmerstoni*) and the lesser frigatebirds (*Fregata ariel ariel*).

These atolls are a sanctuary for the green turtle *(Chelonia mydas)* in particular on the Huon Island where they come massively to lay their eggs each year between December and March. Huon Island is the major nesting areas for this specie in the insularly Pacific.
In 2004, the giant wrasse (*Cheilinus undulates)* entered on the annex II of the CITES convention on the international trade of floral and faunal wild threatened species. It can be identified as an emblematic specie of these atolls by the presence of big specimens on the external slopes of the d'Entrecasteaux reefs.

Figure 24 : Surprise, sea birds, *Sula leucogaster (C. Grondin)*

3.6. Site 6 : Ouvea and Beautemps-Beaupré atolls.

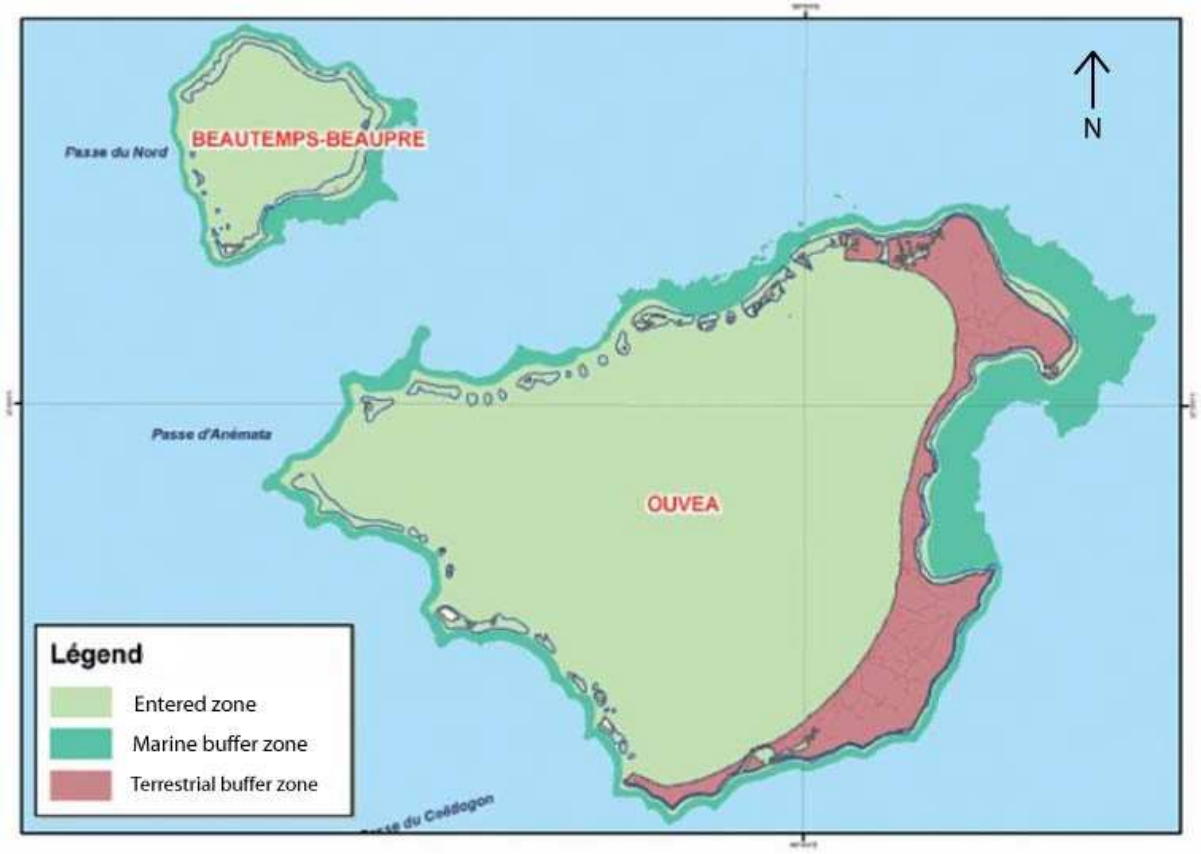

Figure 25: Map of the Ouvea and Beautemps-Beaupré atol

The Loyalty Islands are old stilted atolls having different degrees of emergence. Maré (138 m) and Lifou (104 m) are characterised by a surrounding of high cliffs. Tiga has an altitude of 78 m. The highest point of Ouvea is at 46 m. This island has an interior lagoon of 850 km². More north, Beautemps-Beaupré is a smaller atoll (120 km²) has nearly no stilted land. Even more north the Petri reef, last atoll of this series is on the way to subsidence. Ouvea and Beautemps-Beaupré are atolls or oceanic banks with many reefs and peripheral islands separated each other and boarding the central lagoon. They are isolated and don't receive any terrestrial in-comings. The waters are more transparent then the ones around the "Grande Terre". The number of facies is limited and the biodiversity is reduced.

The Loyalty archipelago are characterised by the absence of any river systems. The rain water percolates totally through the coral massif in the soil and meets the sea water, which percolated horizontally, creating a lens of fresh water due to its small density. The circulation of rain water creates a karstic erosion responsible of a vast network of caves, swallow-holes filled with fresh water and near the cliffs with salted water (anchialine caves).

In the Loyalty Island and more specifically in Ouvea we have to take into consideration tribal Kanak customs which developed a tribal social and land-occupation tradition. 97% of the land of the Loyalty Islands is tribal land. Thus all development projects are discussed with tribal clans.

Kanak culture has always developed a traditional management of the marine habitat. For Kanaks, the land doesn't belong to man; it is man who belongs to the earth. Man is an element taking part in natural balances. But land is a clanic property and each clan has a right to administer their rights and obligations on their land and their marine areas. This exploitation minimises man's impact on natural resources.

Figure 26: View of the laguna of «Hnymëk» at Lékine, South Ouvea *(Destination îles Loyautés)*

Reef typology and habitat:

Ouvea, with an area of 850 km², is the largest atoll and the only one inhabited. This oceanic atoll is characterised by a large lagoon opened on the sea with an average depth of 20 m with a bottom quite steep and silted cliffs on the South-East and North oceanic coast. Beautemps-Beaupré is not an atoll but an oceanic bank. This oceanic tank, with an equilateral triangular shape of 8 nautical miles on each side is located on the Loyalty's Island ridge, at the North-West of Ouvea. The depth of the lagoon is less than 30 meters.

Biodiversity:

The man groups of macrobenthos are, in a decreasing abundance order, mollusc, annelida polychaete and crustaccan borer. On the external slopes of the "Pléiade du Sud" (a series of little islands) a high density of nocturnal Gorgonocephalidae (*Astroboa nuda* from the brittle star group) can be observed.
Some mangroves, the only ones of the Loyalty Islands, not very diversified are located near the Lekine site, known for its fossil notch cliffs, and between Saint Joseph and Teuta.

The lagoon and reef fishes of Ouvea were studied very precisely with under-water counting and experimental line fishing. To this day 72 families and 675 species of costal fishes were indexed (48 species were discovered recently). The list is not complete, all the sea grass field, mangrove, external reef fishes are not described. This island might contain more than 1 000 species. Although the Loyalty Islands have some rare species, the endemism is lower than on the "Grande Terre".

Figure 27: View of the North point of Ouvea *(Destination Iles Loyauté)*

Emblematic species:

The fauna of the Ouvea atoll presents characters different of the “Grande Terre”, although close. The North and South “Pleiades” are nesting sites for green turtles *(Chelonia mydas)*. Thanks to research, the population of green turtle females coming to nest on Ouvea is estimated to 50 or 100 specimens. Ouvea contains, particularly between September and October, large aggregations of ray *Manta birostris* and some considerable densities of emblematic fishes (giant wrasse, giant manta, eagle ray and sharks).

On the external slopes are found a lot of sea fans (*Junceella eunicelloides)* fixed and decorated with abundant crinoids. These slopes have some overhangs where scyaphilic organisms are located: stylasters, sea fans, soft corals of the Nephtheidae family, spondylus, sponges and ascidians.
Concerning the ichthyo-fauna, Beautemps-Beaupré is known for its important populations of surgeon fishes and parrotfish and some species unknown of the “Grande Terre”. They are often small, cryptic and not abundant.

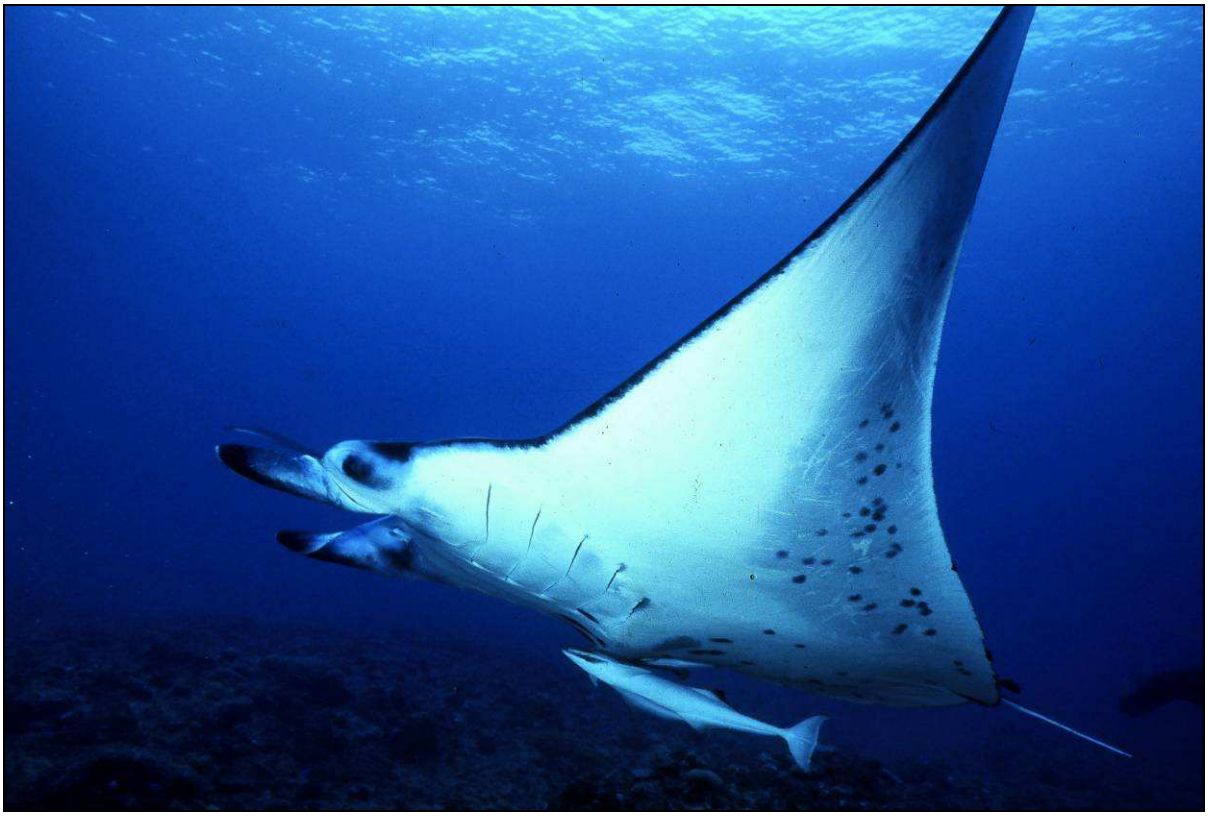

Figure 28: Giant manta, *Manta birostris (P. Larue)*