
WORLD HERITAGE NOMINATION – IUCN TECHNICAL EVALUATION

THE LAGOONS OF NEW CALEDONIA: REEF DIVERSITY AND ASSOCIATED ECOSYSTEMS (FRANCE) – ID No. 1115

1. DOCUMENTATION

- i) **Date nomination received by IUCN:** April 2007
- ii) **Additional information officially requested from and provided by the State Party:** IUCN requested supplementary information on 19 October 2007 before the field visit and on 20 December 2007 after the first IUCN World Heritage Panel meeting. The State Party responses were officially received by the World Heritage Centre on 4 December 2007 and 14 February 2008.
- iii) **UNEP-WCMC Data Sheet:** 8 references (including nomination)
- iv) **Additional literature consulted:** Adjeroud M. et al. (2000). *Premiers résultats concernant le benthos et les poissons au cours de la mission TYPATOLL*. Doc. Sci. Tech. II 3, 125 p.; Andrefouet, S. et Torres-Pulliza, D. (2004) *Atlas des récifs coralliens de Nouvelle-Calédonie*. IFRECOR Nouvelle-Calédonie, IRD, Nouméa; Gabrie, C., Cros, A., Chevillon, C. et Downer, A. (eds) (2005) *Analyse écorégionale marine de Nouvelle-Calédonie. Atelier d'identification des aires de conservation prioritaires*. IFRECOR Nouvelle-Calédonie, Nouméa; Gabrie, C., Eynaudi, A. et Cheminée, A. (2007) *Les récifs coralliens protégés de l'outre-mer français*. IFRECOR/WWF/ministère de l'Écologie et du Développement durable, République française; Laboute, P. et Richer de Forges, B. (2004). *Lagons et récifs de Nouvelle-Calédonie*. Éditions Catherine Ledru, Nouméa.
- v) **Consultations:** 5 external reviewers. Extensive consultations were undertaken during the field visit including with: the office of the High Commissioner, the President of New Caledonia, the Presidents of the North and South Provinces, the customary Grands Chefs, Petits Chefs and Chefs de Clans; other representatives and members of local communities, relevant Government and Province Departments, wildlife associations and industry; and scientists.
- vi) **Field visit:** Dan Laffoley, October-November 2007
- vii) **Date of IUCN approval of this report:** April 2008

2. SUMMARY OF NATURAL VALUES

New Caledonia is a territory of the State of France and is made up of a main island, the "Grande Terre", the Loyalty Islands to the east, the Isle of Pines to the south, Bélep Island to the north, volcanic offshore islands (Walpole, Matthew and Hunter), and the atolls of Huon, Surprise, Beautemps-Beaupré, Chesterfield and Bellona. This comprises an Exclusive Economic Zone of approximately 1,368,588 km². Located in the Southwest Pacific, the reef structures and associated ecosystems of New Caledonia stretch across 5° of latitude (between 18° and 23° south), and 6° degrees of longitude (between 162° and 168° east). With over 23,400 km² of lagoons and 8,000 km of reef structures, this reef system represents one of the largest and most varied reef formations in the world.

The nominated property, the Lagoons of New

Caledonia: Reef Diversity and Associated Ecosystems, is a serial property consisting of six marine clusters that represent the main diversity of coral reefs and associated ecosystems in New Caledonia - from mangroves along the coast to offshore barrier reefs. The additional information provided by the State Party confirms that only the core areas of the nominated property are proposed for inscription in the World Heritage List and that the surrounding marine and terrestrial buffer zones are designed to enhance the protection and integrity of the core areas. The total area of the serial property is 1,574,313 ha and includes almost 60% of New Caledonia's lagoons and coral reefs. The marine core areas of the nominated property and their marine and terrestrial buffer zones are summarised in Table 1.

The largest core area, the Grand Lagon Nord, is very open and important for birds. It is separated from the

Table 1: Core areas of the nominated property and their buffer zones (The figure given for the marine core area of the Grand Lagon Sud includes the Baie de Prony outlier, as outlined in the additional information provided by the State Party, whereas the figures given for the marine and terrestrial buffer zones of the Grand Lagon Sud exclude the extensions outlined in the additional information. These figures need to be confirmed by the State Party.)

Name of the area	Province	Marine core areas (ha)	Marine buffer zones (ha)	Terrestrial buffer zones (ha)
Grand Lagon Sud	Province Sud	314,513	313,100	15,800
Zone Côtière Ouest	Province Sud	48,200	32,500	171,300
Zone Côtière Nord et Est	Province Nord	371,400	100,200	284,500
Grand Lagon Nord	Province Nord	635,700	105,700	6,400
Atolls d'Entrecasteaux	Nouvelle-Calédonie	106,800	216,800	-
Atoll d'Ouvéa et Beautemps-Beaupré	Province îles Loyauté	97,700	26,400	14,400
Total		1,574,313	794,700	492,400
TOTALS		-	-	1,287,100

Atolls d'Entrecasteaux by a 40 km channel. The atolls of the Loyalty Islands are built up as fringing reefs around raised limestone or seamounts of volcanic origin. The Grand Lagon Sud extends 60 km from the shore in a very varied coral complex covered by islets. The lagoon basins have a variety of substrates derived from terrestrial sediments nearer the coast, or from degraded corals and shells further out, providing a soft muddy bottom, coral sands, or a mixture of the two ecosystems. The Grand Lagon Sud cluster also includes the small Baie de Prony core area (13 ha) which is globally important for the presence of certain reef structures and associated habitats: hydrothermal vents in very shallow waters with large chimney structures of over 30 meters high, rising to within a few meters of the surface, associated with especially well developed coral formations that thrive in the sheltered but turbid waters – reaching massive sizes not found elsewhere. These unique formations are protected through the Réserve de l'aiguille de Prony.

The nine main forms of reef contained within the nominated property include fringing reefs, single barrier reefs, globally rare double barrier reefs, lagoon-enclosing atolls, raised atolls and coral islets, and display a wealth of habitats. The marine vegetation is seagrasses and algal beds. 12 species of seagrasses are found, mainly on the muddy sands of shallow lagoons and inlets. 322 species of algae from 46 families are recorded, but it is estimated that 1,000 species may exist.

As the New Caledonia archipelago is near to the global centre of coral reef biodiversity, the diversity of reefs and habitats within the nominated property is high and sustains a very wide range of life. Some 5,055 marine species have been recorded including 1,695 fish from 199 families, 900 cnidarians (corals, jellyfish), 841 crustaceans, 802 molluscs, 254 echinoderms (starfish, sea cucumbers, etc.), 220

alcidians (sea squirts), 203 worms, 151 sponges, 14 sea snakes, 4 turtles and 22 marine mammals. Further research may double some of these totals as species new to science are still being discovered. Less than a third of the crustaceans has been described and the recorded invertebrates are estimated to be 30-40% of those actually present.

Threatened emblematic fish species that occur in the nominated property are giant groupers, humphead wrasse, black-spotted stingray, porcupine ray, seahorse and big-eye tuna. Threatened shark species recorded include: New Caledonia catshark and great white, oceanic white-tip, grey reef, tawny nurse, whale and leopard sharks. Molluscs are abundant, especially around the atolls, including emblematic species such as bellybutton nautilus, trumpet triton, giant clam and southern giant clam. Humpback whales cruise mainly the south and southeast of the island, breeding especially in the Grand Lagon Sud. Other whales recorded include: blue, sei, minke, Antarctic minke, fin, Bryde's, sperm, pygmy sperm, dwarf sperm, Blainville's beaked and Cuvier's beaked whales. Among dolphins are the killer whale, false killer whale, melonheaded whale, Pacific pilot whale, common dolphin, Risso's, bottlenose, Indian Ocean bottlenose, bridled and spinner dolphins. The population of dugongs present in New Caledonia is Oceania's largest population and the third largest in the world. It is concentrated along and breeds on the northwest and southwest coasts. Marine turtles include the green, which breeds on the islands, hawksbill, occasional olive ridley and loggerhead turtles. The last forms 10-20% of the Pacific population. The 14 species of sea snakes live mostly in the lagoons, particularly the great North and South lagoons.

New Caledonia is important for birds and an Endemic Bird Area with 105 species, 23 being found only in New Caledonia. Seabirds occur in great numbers,

including in the nominated property: 50% of the global populations of the wedge-tailed shearwater and black noddy are found there and some 10% of the world populations of the great frigatebird, lesser frigatebird, Dougall's tern and black-naped tern. Threatened sea birds are the Chatham albatross, Campbell albatross, southern royal albatross, Polynesian storm petrel, white-necked petrel, Gould's petrel, providence petrel and Buller's shearwater.

3. COMPARISONS WITH OTHER AREAS

This marine serial property has been nominated under all four natural criteria. The nomination highlights the rich and diverse natural beauty of the property resulting from the combination of coastal and oceanic landscapes with a background of forested mountains. The tropical lagoons and coral reefs of New Caledonia are considered by many divers and marine experts to be some of the most beautiful reef systems in the world due to their wide variety of shapes and forms within a comparatively small area. This ranges from extensive double barrier systems, offshore reefs and coral islands, to the near-shore reticulate reef formations in the west coast zone. This beauty continues below the surface with dramatic displays of coral diversity, massive coral structures, together with arches, caves and major fissures in the reefs. The high transparency of the waters as well as spectacular islands and shorelines further contribute to the aesthetic appeal of the property. The property's natural beauty surpasses or equals that of existing marine World Heritage properties inscribed under criterion (vii), such as the Great Barrier Reef of Australia and the Belize Barrier Reef.

The property is nominated under the earth science criterion based on the occurrence of geodynamical processes that sculpture the surface of the Earth – including obduction, subduction, erosion, sedimentation and variations in sea levels. However, these processes are common to most reefs worldwide and displayed at greater scales in the Great Barrier Reef of Australia, which is inscribed under criterion (viii). They are also represented in other World Heritage properties such as the Galapagos Islands (Ecuador), where they occur together with active volcanism, and in particular Macquarie Island (Australia). In addition, other marine properties that surpass or equal the nominated property in earth science values were previously not inscribed under criterion (viii), such as the Islands and Protected Areas of the Gulf of California (Mexico).

In terms of biological and ecological values, the coral reefs of the New Caledonia Archipelago, at 1,574,313 ha in area, are the second most extensive reef system in the world and form the world's most diverse assemblage of reef structures in one location. The coral reef complex has a great diversity of forms

including all the major reef types from fringing reefs to atolls, as well as associated ecosystems in both coastal and oceanic situations. In terms of ecological and biological processes, the reef complex within the nominated property is globally unique in that it is "free-standing" in the ocean, not following a continental shoreline such as the Australian and Meso-American reefs, and encircles the island of New Caledonia, providing a variety of different kinds of oceanographic exposure, including both warm and cold currents. The careful selection of the series of six large clusters of the property represents the full range of the diverse and distinctive features of the New Caledonian reef complex. Together with the reefs of Fiji, they are the most significant coral reefs in Oceania, with a great diversity of reef and lagoon types and associated ecosystems such as seagrasses and mangroves. The south-west reefs in particular are subject to cool currents and upwelling that are likely to protect them more than many other reefs worldwide from the impacts of climate change and coral bleaching.

The excellent ecological condition of the reefs is remarkable. Whilst there is some evidence of coral bleaching and damage, most likely a legacy from cyclone Erica in 2003, overall the property has very high ecological quality. The property's live coral cover averaged 27.5% in 2004, which compares well with many other reefs. In particular the large number and diversity of large fish (single and in shoals) and top predators such as sharks, barracuda, etc is an important indication of balanced ecological and biological processes in an intact and productive marine environment. This distinguishes the nominated property from many reef systems elsewhere, which have experienced severe coral bleaching events and/or have lost their large fish and top predators.

The nominated property is of outstanding importance for the *in situ* conservation of biodiversity and threatened species. The property includes areas that have been identified as a Conservation International Biodiversity Hotspot and a WWF Global 200 Ecoregion. A comparison of New Caledonia with key coastal and island World Heritage properties in terms of bird, fish and coral diversity is set out in Table 2. The barrier reefs and atolls in New Caledonia are the location for the world's most diverse concentration of reef structures, 146 types based on a global classification system, and they equal or even surpass the much larger Great Barrier Reef in coral and fish diversity. The New Caledonian reef complex has fewer recorded invertebrate species than the Great Barrier Reef, but more than the Belize Barrier Reef. It provides habitat to a number of threatened fish, turtles, and marine mammals, including the third largest population of dugongs in the world. It is a marine site of exceptional diversity with a continuum of habitats from mangroves to seagrasses and a wide range of reef forms. The long term conservation of this remarkable diversity, including its resilience to climate change impacts,

Table 2: Comparison of New Caledonia with key coastal and island World Heritage properties in terms of bird, fish and coral diversity

Name of property	Total area (ha)	Criteria	Bird species	Fish species	Coral species
Great Barrier Reef, Australia	34,870,000 (95% marine)	vii, viii, ix, x	242	1500	400
Shark Bay, Australia	2,197,300 (31% marine)	vii, viii, ix, x	230	323	95
Belize Barrier Reef, Belize	96,300 (50% marine)	vii, ix, x	187	500	100
Cocos Island, Costa Rica	199,790 (97% marine)	ix, x	87	300	32
Galapagos Islands, Ecuador	14,066,514 (95% marine)	vii, viii, ix, x	57	460	120
Sian Ka'an, Mexico	528,000 (23% marine)	vii, x	339	175	83
Coiba Island, Panama	430,825 (50% marine)	ix, x	147	760	58
Tubbataha Reef, Philippines	33,200 (99% marine)	vii, ix, x	46	441	396
Aldabra Atoll, Seychelles	34,200 (41% marine)	vii, ix, x	65	287	210
East Rennell, Solomon Islands	37,000 (plus marine)	ix	43	759 (island group)	300 (island group)
Socotra, Yemen	410,460 (32% marine)	x (nominated)	192	730	283
New Caledonia, France	1,574,300 (100% marine)	vii, viii, ix, x	105	1695	510

is supported by the property's large size, excellent ecological condition and low human pressures.

4. INTEGRITY

4.1 Legal status

The Government of New Caledonia has committed to the protection of the nominated property through a congressional resolution (Resolution No. 243 of 15 December 2006) and written statements from the President of New Caledonia and Presidents of the North and South Provinces. The property is protected by fisheries legislation, which is being further improved and enforced with strong penalties. 50% of the main island and all offshore islands are held in custom through local chiefs and villages. The strong cultural links of the Kanak people with the land and sea through their traditions and management have so far prevented significant impacts on the coral reefs and associated ecosystems.

No IUCN Protected Area Management Category has been assigned to the serial property; however, in practical terms most clusters are Managed Resource Protected Areas (Category VI) with some fisheries legislation and very low human pressures. There are however smaller marine protected areas within the serial property that have assigned management categories – for example the 17,150 ha Réserve

marine intégrale Yves Merlet in the Grand Lagon Sud (Category 1a) and the 2,322 ha Réserve spéciale marine de Bourail in the Côtère Ouest (Category 1b).

The next few years will be critical to enhance the legal framework for the protection and management of the property because the new governance arrangements provided through the 1999 'Organic Law' create a high level of autonomy for the three Provinces that make up New Caledonia (North, South and Loyalty Islands). These governance arrangements will be supported by new legislation, and additional financial resources for enforcement, which will lead to improved environmental management approaches. In addition, co-management arrangements with the Kanak communities are currently being established for all clusters of the property, which are strongly rooted in the Kanak culture and traditional management practices.

The additional information provided by the State Party notes considerable progress in reviewing and enhancing the laws and regulations on industrial development, including mining, with a strong emphasis on environmental protection. The revised legal framework is to be adopted by the President of New Caledonia in 2008. This, together with the improved environmental management practices of the nickel mining industry, will help avoid mining activities and impacts in the buffer zones and prevent any mining

impacts on the core areas.

4.2 Boundaries

The boundaries of the serial property are well set out in the nomination, can be readily recognised, and are understood and supported by the local communities. The general rationale for boundary delineation is the 100 fathom line at sea, and the highest foreshore and the intersection of mangroves for transversal limits on land. The property includes all the key areas that are essential for maintaining its natural beauty and the long term conservation of its remarkable reef diversity, and the individual clusters are of sufficient size to maintain the natural processes necessary for the long-term ecological viability of the property's coral reefs and associated ecosystems.

However, following discussions with the State Party during the field visit, IUCN proposed changes to the boundaries of the core zone and buffer zones of the Grand Lagon Sud. IUCN recommended including the Réserve de l'aiguille de Prony as a core area in the Grand Lagon Sud cluster, as it protects unique hydrothermal vents in very shallow waters, and extending the marine and terrestrial buffer zones of the Grand Lagon Sud to the main island. The State Party accepted these proposed changes and provided in its additional information a revised map showing these changes (see Map 3 annexed to this report). IUCN thus considers that the boundaries of the core areas and buffer zones are sufficient to maintain the values and integrity of the property.

4.3 Management

The nominated property is managed by the three Provinces (North, South and Loyalty Islands) and the Government for the Atolls d'Entrecasteaux in the far north. All offshore islands and 50% of the main island are held in custom through local chiefs and villages, with individual land ownership on the main island most prevalent in the south around the capital of Nouméa. An overall management framework for the nominated property has been developed and agreed by the Federal and Provincial Governments. This framework was developed through a participatory process and with full involvement of local stakeholders and respect of customary rights. The implementation of the management framework is supported by specific legislation on fisheries, land/water use planning, urban development and mining. Legislation on fisheries and mining are currently being reviewed to strengthen their environmental components. The overall management framework will be complemented by specific management plans for each of the six clusters of the property which are under preparation with full involvement of local stakeholders and respect of customary rights.

Seventy staff support management and conservation

activities in the core areas. The operational budget for the nominated property is about €1.1 million/year (US\$ 1,702,668). Additional support is available from the Institute for Research and Development, the University of New Caledonia, the South Pacific Community, the Centre for the Environment, L'Aquarium des Lagon, Operation Whale, WWF and regional organisations. Over a five year period € 548,890 (US\$ 849,616) will be contributed by CRISP, IFRECOR, PROE and WWF. BirdLife International and Conservation International are presently fundraising to obtain additional support for the nominated property.

State support for surveillance of the property is provided by the army (Gendarmerie and navy). The Gendarmerie has at its disposal 20 vessels including 2 ships, 1 boat, and 17 smaller vessels for the small units spread over the territory. The navy has two patrol ships and a smaller vessel. Three vessels are available for monitoring and research, and a further boat is being built. Surveillance is also supported by local communities through customary means.

4.4 Threats and human use

Human population density is low in New Caledonia, with around 74% of the 250,000-300,000 inhabitants living in the Nouméa region, resulting in low pressures on the coral reefs and associated ecosystems. There are however a number of existing and potential threats to the values and integrity of the property that need careful monitoring and management.

Mining

Direct and indirect impact from mining is by far the most significant threat to the nominated property. New Caledonia has a long history of nickel mining and this industry is the major employer and source of revenue. Past mining has scarred the landscape and left a legacy of significant environmental degradation. However, the industry is currently undergoing considerable change in both legislation and environmental management practices. The nominated property includes core areas that have not been impacted by mining and have adjacent watersheds with minimal mining activity. The priority management issue is to avoid mining activities and impacts in the buffer zones and to prevent any mining impacts on the core areas.

As part of the transformation underway in New Caledonia, new mining legislation is being drafted to strengthen the environmental component and establish strict environmental standards. The new legislation, which should come into force in 2008, will include comprehensive laws and regulations for mining activities, including post mining rehabilitation requirements and a sliding scale of penalties on the industry if they fail to comply. Thus, overall management of mining will be radically improved, and current schemes are already required to meet the new

standards in advance of the new legislation coming into force. Major companies like SLN Nickel and Goro Nickel are already promoting more environmentally friendly approaches based on new technologies to extract the mineral.

A major development by Goro Nickel is underway adjacent to the Grand Lagon Sud cluster. This proposal is at public enquiry stage with final permits yet to be signed. To conserve the values and integrity of the nominated property, this development project will need to ensure that the warm water discharge and its chemical composition into the Canal de Havannah do not affect the fragile coastal and marine ecosystems associated to this area. In the north, further major expansion of mining activities will occur with potential impacts on the Zone Côtière Nord et Est. SLN Nickel has expressed interest to exploit licences in future, some within the buffer zone of the Grand Lagon Nord. However, it is important to note that in New Caledonia a licence in itself does not entitle the licence holder to exploit mineral reserves, but merely to ask for the permission to exploit.

The additional information provided by the State Party confirms the position of the President of New Caledonia and the Presidents of the North and South Provinces, that no mining activities will be permitted which impact on the values and integrity of the nominated property. Given the new legislation and written statements from the Presidents, mining is not considered an imminent threat to the nominated property at this point in time, but remains a high risk. Therefore, IUCN considers a follow-up mission is required in 2010 to assess the implementation of the new mining legislation and the environmental performance and impact of mining activities.

Fishing

Fishing pressure on the coral reefs and associated ecosystems in the nominated property is low and generally seen to not be having significant impacts on the quality of the resource at the moment – although some species are considered to perhaps be less numerous than a few years back. Professional fishers exist in very low numbers. It is unclear what additional pressure illegal or unreported fishing is having on the fish stocks, but the presence of a large number and diversity of large fish, including top predators, indicates that fishing pressure is generally low. The additional information provided by the State Party notes that fisheries legislation has already been reviewed and enhanced in the North Province and is in the process of review in the South Province, with enhanced legislation to be adopted in 2008. It is also proposed to prohibit fishing of the napoleon wrasse in 2008 as this species, as all other herbivorous fish species, is important in the face of climate change to maintain reef health and ensure the most rapid recovery from bleaching events. IUCN therefore

recommends that full protection should also be given to all other herbivorous fish species.

Tourism

New Caledonia is relatively isolated in the Pacific and outside the capital of Nouméa, is expensive to visit and has very limited tourist facilities. This has so far prevented the development of mass tourism. Tourism is currently small scale with about 170,000 tourists per each year. However, some conflicts are already occurring, notably in relation to whale watching in the Grand Lagon Sud. Other risks arise from the increasing number of visiting cruise ships, which require careful planning and management. A recent study recommended that New Caledonia should aim for a small-scale ecotourism market, but opening up the Grand Lagon Sud to increasing tourist pressure remains a high risk given its adjacent location to Nouméa. Tourism is likely to increase in the future and needs to be well planned and managed.

Aquaculture

Aquaculture in New Caledonia is geographically constrained to the west coast due to a lack of suitable coastal areas elsewhere. As a result mass expansion of the industry is unlikely. It is subsidised by the Government and represents the second largest export industry after nickel mining. However, so far it is small scale and low intensity, with shrimp farms located behind the mangroves, and has minimal impacts on the coral reefs and associated ecosystems. As reef resilience to climate change impacts decreases with increasing nutrient loads from aquaculture (and agriculture), careful monitoring and management of this industry is required.

Climate change

Climate change impacts on the nominated property include a rise in sea temperature and sea level, ocean acidification, and possibly an increased intensity and frequency of cyclones. The latter is of concern given that in 2003 cyclone Erica destroyed 10-80% of live coral cover. Coral bleaching is also a severe threat given that the reefs suffered bleaching events in 1997, 2000 and 2002. Recent studies show that reefs with intact populations of herbivores (especially fish) may recover up to five times faster from coral bleaching than those where these species have been fished out. A key management issue will therefore be to rigorously protect the herbivorous fish biomass on the reefs to maintain reef resilience. Strong and proactive fisheries management is required to achieve this.

In summary IUCN considers that the property meets the necessary conditions of integrity as set out in the Operational Guidelines. However, in light of the rapidly evolving nature of the governance and legislative framework for New Caledonia and

the potentially high risk of mining impacts, IUCN recommends that a mission to the property be invited by the State Party in 2010 to assess progress with the implementation of community-based management plans, the enforcement of newly adopted fisheries regulations and the environmental performance and impact of mining activities in the buffer zones of the serial property.

5. ADDITIONAL COMMENTS

5.1 Justification for serial approach

When IUCN evaluates a serial nomination it asks the following questions:

a) What is the justification for the serial approach?

The nominated property contains representative examples of the highest diversity of coral reef formations and associated habitats and species within a given area in the world. The serial approach is justified by the rationale of scientifically selecting representative areas that contain the main diversity of coral reefs and associated ecosystems, are intact and have adjacent watersheds with minimal mining activity. The selection of the present series of six large clusters thus provides the greatest opportunity to maintain the values and integrity of the nominated property.

b) Are the separate components of the property functionally linked?

The six marine clusters of the serial property are part of the larger reef and lagoon system that surrounds New Caledonia. As part of the overall reef system, the clusters are linked by the oceanographic conditions around the archipelago. More specific functional links include the seasonal movements of fish species between the different clusters and the movements of humpback whales between the north and south lagoons. Other large vertebrates such as dugongs are also thought to display some movement between the clusters, but this is less well documented.

c) Is there an overall management framework for all the components?

An overall management framework has been developed and implemented in all the core areas of the serial property. A full participatory management approach was used to develop this management framework. Priorities for conservation and sustainable development activities, identified through community planning processes, are guiding the implementation process.

IUCN concludes that the serial approach put forward

is justified in this case.

5.2 Cultural values

Although this nomination is focused on natural values, IUCN notes the important cultural values that are strongly associated with the nominated property. The strong cultural links of the Kanak people with the land and sea and their traditional management of natural resources have maintained the good quality of marine resources. These strong cultural links and their importance for safeguarding the values and integrity of the nominated property merit special mention.

6. APPLICATION OF CRITERIA

The property has been nominated under all four natural criteria. IUCN considers that the nominated property meets criteria (vii), (ix) and (x) based on the following assessment:

Criterion (vii): Superlative natural phenomena or natural beauty

The tropical lagoons and coral reefs of New Caledonia are considered to be some of the most beautiful reef systems in the world due to their wide variety of shapes and forms within a comparatively small area. This ranges from extensive double barrier systems, offshore reefs and coral islands, to the near-shore reticulate reef formations in the west coast zone. The richness and diversity of landscapes and coastal backdrops gives a distinctive aesthetic appeal of exceptional quality. This beauty continues below the surface with dramatic displays of coral diversity, massive coral structures, together with arches, caves and major fissures in the reefs.

IUCN considers the nominated property meets this criterion.

Criterion (ix): Ecological and biological processes

The reef complex within this serial property is globally unique in that it is "free-standing" in the ocean and encircles the island of New Caledonia, providing a variety of different kinds of oceanographic exposure, including both warm and cold currents. The coral reef complex has a great diversity of forms including all the major reef types from fringing reefs to atolls, as well as associated ecosystems in both coastal and oceanic situations. Extending over important oceanic gradients, it is one of the planet's best examples of the ecological and biological processes underlying tropical lagoon and coral reef ecosystems, themselves one of the most ancient and complex ecosystem types.

IUCN considers the nominated property meets this criterion.

Criterion (x): Biodiversity and threatened species

The property is a marine site of exceptional diversity with a continuum of habitats from mangroves to seagrasses and a wide range of reef forms. The barrier reefs and atolls in New Caledonia form one of the three most extensive reef systems in the world, and together with the reefs of Fiji, are the most significant coral reefs in Oceania. They are the location for the world's most diverse concentration of reef structures, 146 types based on a global classification system, and they equal or even surpass the much larger Great Barrier Reef in coral and fish diversity. They provide habitat to a number of threatened fish, turtles, and marine mammals, including the third largest population of dugongs in the world.

IUCN considers the nominated property meets this criterion.

IUCN considers, however, that the nominated property does not meet criterion (viii) based on the following assessment:

Criterion (viii): Earth's history, geological and geomorphic features and processes

The property is nominated under the earth science criterion based on the occurrence of geodynamical processes that sculpture the surface of the Earth – including obduction, subduction, erosion, sedimentation and variations in sea levels. However, these processes are common to most reefs worldwide and displayed at greater scales in the Great Barrier Reef of Australia, which is inscribed under criterion (viii). They are also represented in other World Heritage properties such as the Galapagos Islands (Ecuador), where they occur together with active volcanism, and in particular Macquarie Island (Australia). In addition, other marine properties that surpass or equal the nominated property in earth science values were previously not inscribed under criterion (viii), such as the Islands and Protected Areas of the Gulf of California (Mexico).

IUCN considers the nominated property does not meet this criterion.

7. RECOMMENDATIONS AND STATEMENT OF OUTSTANDING UNIVERSAL VALUE

IUCN recommends that the World Heritage Committee adopt the following decision:

The World Heritage Committee,

1. *Having examined Documents **WHC-08/32.COM/8B** and **WHC-08/32.COM/INF.8B2**,*
2. *Inscribes **The Lagoons of New Caledonia:***

Reef Diversity and Associated Ecosystems, France, on the World Heritage List on the basis of criteria (vii), (ix) and (x);

3. *Adopts the following Statement of Outstanding Universal Value:*

Values

The tropical lagoons and coral reefs of New Caledonia are an outstanding example of high diversity coral reef ecosystems and form one of the three most extensive reef systems in the world. They are the location for the world's most diverse concentration of reef structures, with an exceptional diversity of coral and fish species and a continuum of habitats from mangroves to seagrasses and a wide range of reef forms, extending over important oceanic gradients. They still display intact ecosystems, with healthy populations of top predators, and a large number and diversity of large fish. They are of exceptional natural beauty, and contain diverse reefs of varying age from living reefs through to ancient fossil reefs, providing an important source of information on the natural history of Oceania.

Criterion (vii) – Superlative natural phenomena or natural beauty: The tropical lagoons and coral reefs of New Caledonia are considered to be some of the most beautiful reef systems in the world due to their wide variety of shapes and forms within a comparatively small area. This ranges from extensive double barrier systems, offshore reefs and coral islands, to the near-shore reticulate reef formations in the west coast zone. The richness and diversity of landscapes and coastal backdrops gives a distinctive aesthetic appeal of exceptional quality. This beauty continues below the surface with dramatic displays of coral diversity, massive coral structures, together with arches, caves and major fissures in the reefs.

Criterion (ix) – Ongoing biological and ecological processes: The reef complex within this serial property is globally unique in that it is “free-standing” in the ocean and encircles the island of New Caledonia, providing a variety of different kinds of oceanographic exposure, including both warm and cold currents. The coral reef complex has a great diversity of forms including all the major reef types from fringing reefs to atolls, as well as associated ecosystems in both coastal and oceanic situations. Extending over important oceanic gradients, it is one of the planet's best examples of the ecological and biological processes underlying tropical lagoon and coral reef ecosystems, themselves one of the most ancient and complex ecosystem types.

Criterion (x) – Biological diversity and threatened species: The property is a marine site of exceptional diversity with a continuum of habitats

from mangroves to seagrasses and a wide range of reef forms. The barrier reefs and atolls in New Caledonia form one of the three most extensive reef systems in the world, and together with the reefs of Fiji, are the most significant coral reefs in Oceania. They are the location for the world's most diverse concentration of reef structures, 146 types based on a global classification system, and they equal or even surpass the much larger Great Barrier Reef in coral and fish diversity. They provide habitat to a number of threatened fish, turtles, and marine mammals, including the third largest population of dugongs in the world.

Integrity

The serial property comprises six marine clusters which are also protected by marine and terrestrial buffer zones that are not part of the inscribed property. It includes all the key areas that are essential for maintaining its natural beauty and the long term conservation of its remarkable reef diversity, and it is of sufficient size to maintain associated biological and ecological processes. The property still displays intact ecosystems with top predators, and a large number and diversity of large fish.

Requirements for Protection and Management

The property is currently protected by fisheries legislation, which is being further improved, and co-management arrangements with the Kanak communities are currently being established for all clusters. Management plans are currently being prepared for all clusters with full involvement of stakeholders. Continued efforts to protect and manage the property and its surroundings are required to maintain the present intactness of the coral reef ecosystems. Protecting and managing large areas in the form of no-take zones and proactive management of water quality and fisheries regulations will help maintain reef resilience in the face of climate change. Enhanced surveillance and monitoring are required to address potential impacts from fishing and mining and, to a lesser extent, from agriculture and aquaculture. Tourism is likely to increase in the future and needs to be well planned and managed. Sustainable financing strategies are required to ensure the necessary equipment, human and financial resources for the long term management of the property.

framework for mining activities outside the property aiming to avoid negative environmental impacts on the property;

4. Commends the State Party, and especially the North and South Provinces and the Kanak community of New Caledonia, for their outstanding work towards establishing community-based management plans using traditional knowledge and good practices in land and sea management, backed by regulatory controls as well as for their strong commitment in establishing a regulatory
5. Requests the State Party to address the following points for effective protection and management of the property:
 - a) Develop and implement, as part of proposed co-management arrangements, an action plan for enhancing surveillance and monitoring which should involve actions and support from the State, Government, Provinces and local communities, and to allocate adequate equipment, human and financial resources for its effective implementation;
 - b) Ensure that the management planning process consider the effective implementation of actions to maintain reef resilience, including strong proactive management of water quality and fisheries regulations. Full protection should be given, in particular, to all herbivorous fish species as these species are critical in the face of climate change to maintain reef health and ensure the most rapid recovery from bleaching events; and
 - c) Develop and implement a zoning scheme for the property to ensure that regulations are made easy to understand for sea users and that large areas are managed for reef resilience in the form of no-take zones, appropriately linked to existing marine protected areas and traditional Kanak taboo areas;
 6. Further requests the State Party, in light of the rapidly evolving nature of the governance and legislative framework for New Caledonia, to invite a mission to the property in 2010 to assess progress with the implementation of community-based management plans, the enforcement of newly adopted fisheries regulations and the environmental performance and impact of mining activities in the buffer zones of the serial property.

Map 1: Location of the nominated property

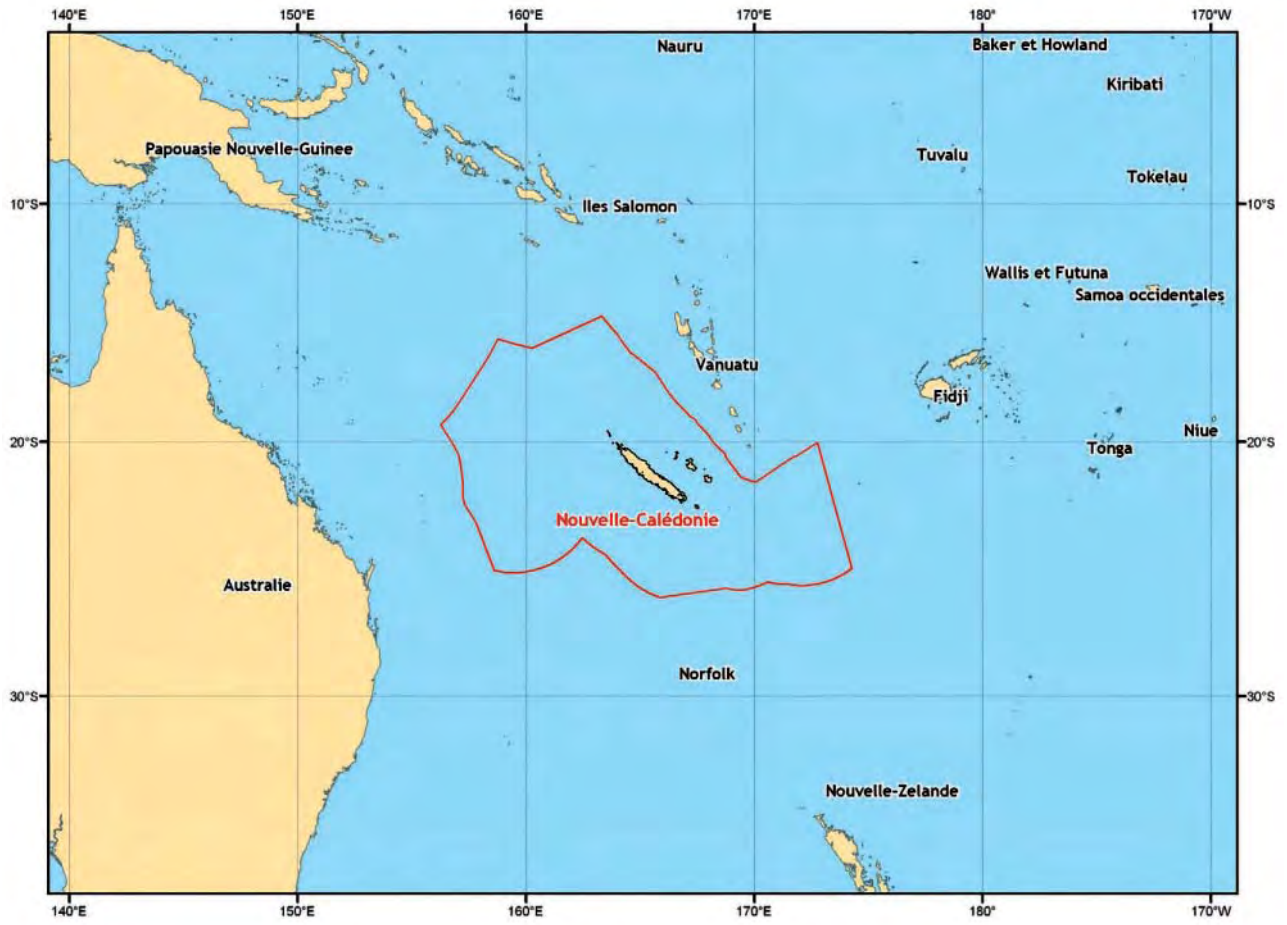


Figure 1 : Positionnement de la Nouvelle-Calédonie dans le Pacifique Sud-Ouest

Map 2: Boundaries of the nominated property

