

Ramsar and World Heritage Conventions: Converging towards success

How cultural values and community participation contribute to positive conservation outcomes for internationally designated wetlands

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Cover photo: Fishermen crossing Loktak lake, known for its inhabited floating islands called 'Phumdis', Keibul Lamjao National Park, Manipur, India (Credit: Tshering Zam)

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List of abbreviations

CBNRM	Community-based natural resource management
CBO	Community-based organisation
CE	Common Era
CEPA	Communication, capacity building, education, participation and awareness
ha	Hectare
IUCN	International Union for Conservation of Nature
km	Kilometre
LAC	Limits of acceptable change
MIDAs	Multi-Internationally Designated Areas
MEAs	Multilateral Environmental Agreements
NGO	Non-governmental organisation
ODMP	Okavango Delta Management Plan
OKACOM	Permanent Okavango River Basin Commission
OUV	Outstanding universal value
SOC	State of Conservation
UN	United Nations
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous People
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHC	World Heritage Convention

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Background

Wetlands and humans have a long history of interaction. Cultural practices and traditions can play a significant role in securing the conservation and wise use of wetlands. Across the globe and on a daily basis, people interact with their natural environment and deliver wetland conservation through sustainable traditional and cultural management practices.

World Heritage properties are formally recognised by the United Nations, and specifically by the United Nations Educational, Scientific and Cultural Organization (UNESCO), on the basis of being representative of cultural and natural heritage considered to be of Outstanding Universal Value (OUV) to humanity. The unique feature of the 1972 World Heritage Convention is that it explicitly recognizes both natural and cultural heritage. As of July 2017, the World Heritage List includes 1,073 properties across 167 States Parties.

Contracting Parties to the Ramsar Convention select sites for designation if they are representative, rare or unique examples of wetland types or if they are internationally important for conserving biological diversity. The List of Wetlands of International Importance, also known as the Ramsar List, represents the largest global network of protected areas with 2,280 “Ramsar Sites” covering more than 2.2 million km² (as of July 2017).

Since its adoption in 1971 in Ramsar (Islamic Republic of Iran) the Convention on Wetlands has recognised the cultural importance of wetlands. Although the Ramsar Convention retains strong links with waterbird conservation, the cultural dimensions have been progressively strengthened through successive resolutions adopted by the Conference of the Parties, such as Resolution IX.21 Taking into account the cultural values of wetlands. However, these resolutions have respected the obligations under other international agreements, such as those adopted by UNESCO, and have also urged the Ramsar Secretariat to continue to develop collaborative mechanisms with the World Heritage Centre.

Both of these Conventions recognise that the involvement of indigenous and local communities can often lead to improved governance and more effective management of protected wetlands. The World Heritage Committee has given increasing consideration to community participation and added ‘communities’ as one of the five strategic objectives of the Convention (the Budapest Declaration, 2007). In 2015, at its 20th session, the General Assembly of States Parties to the World Heritage Convention adopted the Policy Document for the Integration of a Sustainable Development Perspective

into the Processes of the World Heritage Convention which emphasizes that the recognition of rights and the full involvement of indigenous peoples and local communities is at the heart of sustainable development. The recent revisions to the *Operational Guidelines* adopted by the World Heritage Committee at its 39th session in 2015 include a reference to the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) with regard to the engagement of indigenous peoples in the conservation of world heritage. UNESCO is currently developing its policy on engaging with indigenous peoples which was submitted to its Executive Board in 2017 (Rössler, 2016; UNESCO WHC, 2017; UNESCO, 2017¹).

The Ramsar Convention has also recognized the importance of participation and the involvement of indigenous and local communities in delivering wise use of wetlands. In 2015 the Contracting Parties adopted Resolution XII.2 *The Ramsar Strategic Plan 2016-2024*. The Strategic Plan recognizes that the wise and customary use of wetlands by indigenous peoples and local communities can play an important role in their conservation. This has been translated in goals and targets for the Convention. Goal 2 urges all Parties to commit themselves to efforts to protect and effectively manage the existing Ramsar Sites and enable the full and effective participation of stakeholders, including indigenous peoples and local communities. Similarly, Target 10 under Goal 3 is that the traditional knowledge, innovations and practices of indigenous peoples and local communities relevant for the wise use of wetlands and their customary use of wetland resources are documented, respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention, with a full and effective participation of indigenous peoples and local communities at all relevant levels. These commitments have been captured in Resolution XII.9 *The Ramsar Convention’s Programme on communication, capacity building, education, participation and awareness (CEPA) 2016-2024*. The CEPA Programme calls for participation in wetland management of stakeholder groups with cultural, spiritual, customary, traditional, historical and socio-economic links to wetlands or those communities who depend on wetlands for their livelihoods to be given a high priority.

In many cases the provisions of the two Conventions can be mutually supportive and strengthen the protection of the vital links and synergies between the cultural and natural heritage of an area. The Conventions are the only two site-based global intergovernmental agreements and as such they work together to share in delivery of the overall goal of conservation of cherished natural areas. By working

¹ www.unesco.org/new/en/indigenous-peoples/related-info/unesco-policy-on-indigenous-peoples/, see also unesdoc.unesco.org/images/0024/002489/248900e.pdf

together the two Conventions can demonstrate the highest standards and quality of practice and act as exemplars for the management of protected sites. Having multiple forms of international recognition has the potential to increase resilience and can facilitate greater engagement and participation of local communities (Schaaf and Clamote Rodrigues, 2016). Through collaboration and participation it is possible to share lessons learned from the management of World Heritage properties and Ramsar Sites in light of ever increasing threats, and the cultural heritage ingrained in wetlands can be secured for future generations of humankind. In this vein, this report builds on ongoing efforts to draw lessons and to provide guidance for sites with multiple international designations. Following the study of Schaaf and Clamote Rodrigues (2016), it specifically focuses on relationships between culture and wetlands of international importance.

The compilation of this report has drawn on multiple information sources. The descriptions of the case studies draw upon information published on the World Heritage List website (whc.unesco.org/en/list/) including Advisory Bodies Evaluations, maps, Decisions, Mission Reports, Periodic Reporting, State of Conservation Reports and Statements of Outstanding Universal Value. The Ramsar Sites Information Service (rsis.ramsar.org/) has been accessed to provide overview descriptions of the Sites. Descriptions of individual Ramsar Sites have been informed by information presented in the most recent Ramsar Information Sheets (RIS). The authors have also drawn on a wider literature base to provide additional detail where required. The lessons learned have been interpreted and synthesised by the authors based on the evidence provided in the case studies and also on information presented in relevant publications. Due to space limitations, only the key citations are provided as reference sources.



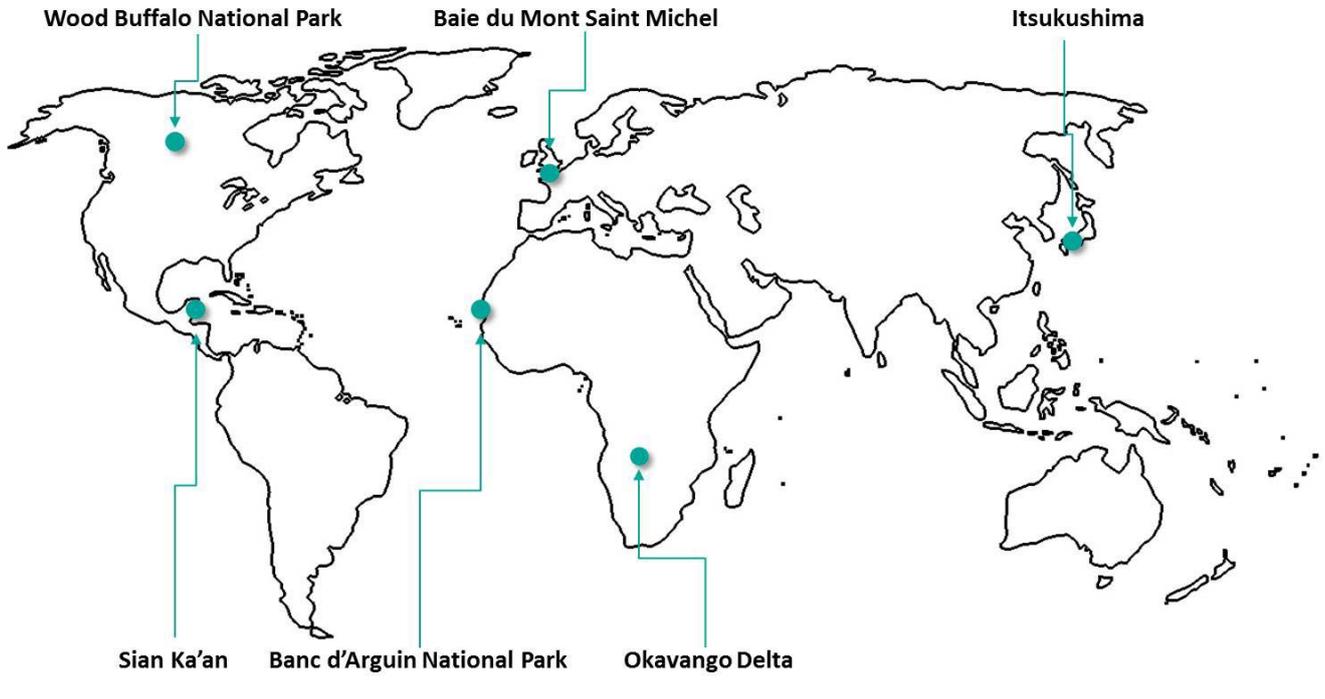
Case studies

As of 2016, there were 97 areas across the globe that were considered to be of high global significance and had been listed under both the Ramsar Convention and the World Heritage Convention. These are termed Multi-Internationally Designated Areas (MIDAs) (for more information see Schaaf and Clamote Rodrigues, 2016). Six case studies are presented here in order to illustrate how cultural values and practices, including those that draw on traditional knowledge and community participation have contributed to sustainable development and positive conservation outcomes. The case studies are listed below with their site/property numbers and year of designation/inscription in parenthesis.

The case studies represent a cross section of World Heritage properties which have been inscribed on the World Heritage List under cultural or natural criteria. All presented properties demonstrate close links between people and the environment. The Ramsar Sites represent areas that qualify on criteria which consider rare or unique wetland types, important species and communities, waterbirds, fish or other taxa. The purpose of presenting the case studies is to illustrate the benefits and challenges of managing MIDAs and to provide site managers and policy-makers with positive examples and lessons learned on how best to manage wetlands wisely and to protect areas of outstanding natural and cultural heritage.

Country	Ramsar Site name	World Heritage property name	Name used in this document	URLs for site
Botswana	Okavango Delta System (#879, designated 1996)	Okavango Delta (#1432, inscribed 2014)	Okavango Delta	rsis.ramsar.org/ris/879 whc.unesco.org/en/list/1432/
France	Baie du Mont-Saint-Michel (#709, designated 1994)	Mont-Saint-Michel and its Bay (#80bis, inscribed 1979)	Baie du Mont-Saint-Michel	rsis.ramsar.org/ris/709 whc.unesco.org/en/list/80/
Canada	Peace-Athabasca Delta (#241, designated 1982) and Whooping Crane Summer Range (#240, designated 1982)	Wood Buffalo National Park (#256, inscribed 1983)	Wood Buffalo National Park	rsis.ramsar.org/ris/240 rsis.ramsar.org/ris/241 whc.unesco.org/en/list/256
Mauritania	Parc National du Banc d'Arguin (Banc d'Arguin National Park) (#250, designated 1982)	Banc d'Arguin National Park (#506, inscribed 1989)	Banc d'Arguin National Park	rsis.ramsar.org/ris/250 whc.unesco.org/en/list/506/
Mexico	Sian Ka'an (#1329, designated 2003)	Sian Ka'an (#410, inscribed 1987)	Sian Ka'an	rsis.ramsar.org/ris/1329 whc.unesco.org/en/list/410
Japan	Miyajima (#2056, designated 2012)	Itsukushima Shinto Shrine (#776, inscribed 1996)	Itsukushima Shinto Shrine	rsis.ramsar.org/ris/2056 whc.unesco.org/en/list/776

Case study locations





Two guides with makoro dugout canoes, Okavango Delta, Botswana (Credit: Pete Niesen / Alamy Stock Photo)

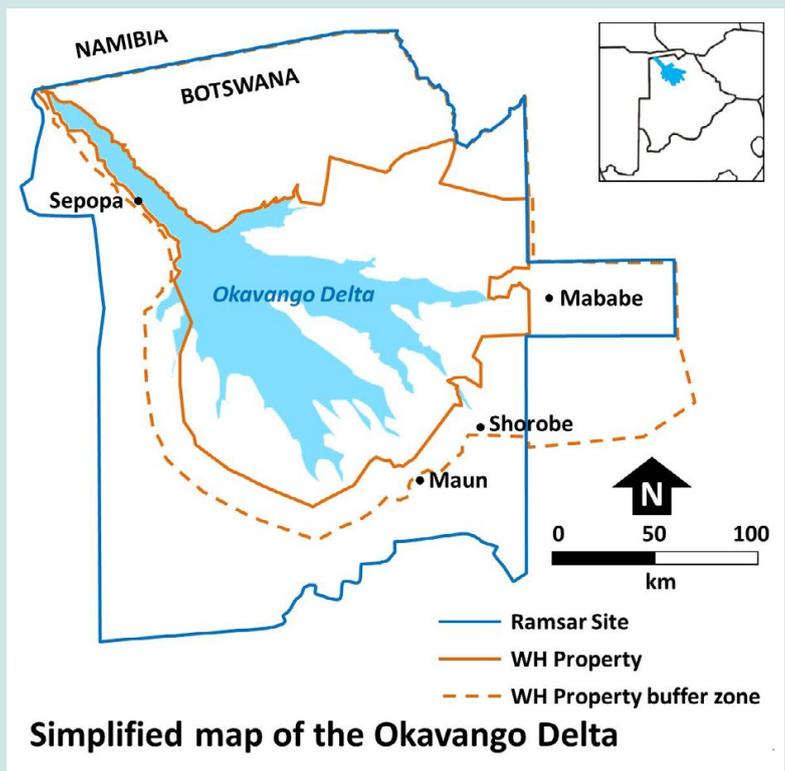
Okavango Delta, Botswana

Summary

The Ramsar Site covers 5,537,400 ha and extends 90km beyond the World Heritage property boundary in the north and south-east. The northern boundary of the Ramsar Site follows the border between Namibia and Botswana and the Kwando River. The World Heritage property covers a smaller area of 2,023,590 ha which is surrounded by a buffer zone of 2,286,630 ha.

The maintenance of the seasonal flood-pulse which drives the ecology of the Delta supports a vast diversity of species, maintains a vital tourist resource and secures a traditional way of life and the livelihoods of the indigenous peoples of the area. The traditional tribal land ownership and indigenous low-level subsistence use through hunting, fishing and gathering have helped to protect the ecological character of the site.

The dual designations under the Ramsar and World Heritage Conventions have contributed to the protection and management of the natural environment, especially with regard to invasive species, water resources and extractive industries. Whilst these designations and the associated management planning embrace traditional land uses, areas of cultural significance and indigenous communities, further work is required to ensure that cultural values are more fully embedded in the protection and management of the site.



Site Description

The Okavango River occupies a basin with no outlet to the sea that extends over parts of Angola, Namibia and Botswana. Approximately 95% of the basin's run-off is generated in the headwaters in Angola before flowing to the south along the Cubango and Cuito Rivers. Below their confluence the Okavango River extends along the border between Namibia and Angola before flowing to the south east into the Delta.

The Delta is a dynamic mosaic of permanent and seasonal swamps and lakes, channels and floodplains. The site is an outstanding example of the interplay between climatic, geomorphological, hydrological, and biological processes that drive and shape an ecosystem where the biota is adapted to the annual cycle of rains and flooding. The site was designated as a Wetland of International Importance on 12 September 1996 and inscribed as a World Heritage property in 2014 at the 38th session of the UNESCO World Heritage Committee.

World Heritage and Ramsar designations

The Okavango Delta was inscribed on the World Heritage List as a 'natural site' on the basis of three criteria. The permanently clear waters and abundant nutrients transform the dry Kalahari Desert into a landscape of exceptional beauty and sustain a remarkable diversity of habitats and species. Annual flooding revitalizes the wetlands following the peak of the dry season resulting in an extraordinary juxtaposition of wetland in an otherwise arid landscape (Criterion vii²).

The Delta is an outstanding example of the complexity, inter-dependence and interplay of climatic, hydro-geomorphological and biological processes. The continuous transformation of features such as islands, channels, floodplains and lakes influences the dynamics of the Delta including adjacent dryland grassland and woodland habitats (Criterion ix). The result is that the property sustains robust populations of endangered large mammals including cheetah, white and black rhinoceros, wild dog and lion. The Delta is also the core area for world's largest population of elephants, numbering around 200,000. The Delta's habitats are species-rich with 1,061 plant species, 89 fish, 64 reptiles, 482 bird and 130 mammal species. The Delta is further recognized as an Important Bird Area, harbouring 24 species of globally threatened birds, including six species of vulture, the southern ground-hornbill, wattled crane and slaty egret. Thirty-three species of water birds occur in numbers that exceed 0.5% of their global or regional population (Criterion x). The Delta has been inhabited for centuries by small numbers of indigenous hunter-gatherers who have had no significant impact on the ecological integrity of the area. Maintenance of the site's Outstanding Universal Value is contingent on reinforcing the recognition of the cultural heritage of the indigenous inhabitants of the Delta and integrating the traditional subsistence uses and access rights into management planning for ecosystem conservation.

The Okavango Delta was designated as a Wetland of International Importance under the Ramsar Convention on the basis of six criteria. The Delta is a unique inland wetland complex (Criterion 1) which supports 20 IUCN Red-Listed plant species of which seven are at very high to extremely high risk of extinction. More than 50% of its plant species are endemic, and it maintains terrestrial species that are absent from the surrounding savannah habitat as they require the prevailing conditions of humidity or soil moisture (Criterion 3). In addition, the Site hosts numerous critically endangered species such as those listed under Criterion x above as well as red lechwe, hippopotamus, leopard and sitatunga (Criterion 2). During the migration cycle the site is an important refuge for several species, including elephant, zebra and wildebeest, and it forms the most important breeding site for the slaty egret (Criterion 4). The Delta routinely attracts more than 20,000 waterbirds (Criterion 5) and supports more than 1% of the biogeographic population of 13 bird species including the great white pelican, squacco heron, saddle-billed stork, fulvous whistling duck, African pygmy goose and the black-winged pratincole.

The description of the site's ecological character reflects the importance of the social and cultural values of the Delta. The diverse livelihood activities, such as *molapo* (flood recession) farming, arable farming and hunting, gathering and fishing, are strongly associated with the ethnicity of the various indigenous communities, including the WaYei, Hambukushu and San. Whilst most of the communities depend on the tourist industry for cash income, the timing of the peak tourist season between harvest and ploughing season does not interrupt the traditional subsistence farming, but allows households to remain economically active throughout the year.

The role of cultural values, practices and traditions in wetland conservation

The Delta comprises a mosaic of protected lands. A significant part of the Delta is protected within the Moremi Game Reserve, and the remainder is composed of Wildlife Management Areas and Controlled Hunting Areas managed by community trusts or private tourism concession holders. Legal protection is afforded through Botswana's Wildlife Conservation and National Parks Act of 1992 and an associated Wildlife Conservation Policy. Some 95% of the Ramsar Site is communally-owned, falling under the Tribal Land tenure system and significant areas are cultural landscapes which embrace sacred sites and traditional land uses. A management plan for the Ramsar Site (the Okavango Delta Management Plan or ODMP) was published in 2008, prior to World Heritage designation, and aims "to integrate resource management for the Okavango Delta that will ensure its long-term conservation and that will provide benefits for the present and future well-being of the people, through sustainable use of its natural resources". However, the development of the ODMP was a 'top-down' process and its scope and utility could benefit from further integration of cultural values and indigenous knowledge. The wider

² The World Heritage Convention's Outstanding Universal Value criteria are indicated by Roman numerals. Ramsar Site designation criteria are indicated by Hindu-Arabic numerals throughout.



Mbukushu women carrying fishing baskets, Okavango Delta, Botswana (Credit: Frans Lanting Studio / Alamy Stock Photo)

water resources across the Okavango River Basin are jointly managed through a tri-partite agreement between Botswana, Namibia and Angola known as the Permanent Okavango River Basin Commission (OKACOM).

Continued attention is required to reinforce the traditional land uses and cultural heritage. There is a clear premise for such work through national recognition of the property's cultural context (Satau & Crawhall, 2017). Attempts are being made to address these issues and others including the demands placed on the Delta through tourism. A report in 2009 by the Department of Wildlife and National Parks suggests that more than 40,000 people visit the Delta each year. Therefore the enforcement of appropriate land use planning, that considers tribal lands and wider ecological integrity, is necessary to maintain the positive impacts that sustainable tourism has on rural livelihoods. The ODMP, through the overall description of the site, emphasizes the diversity and importance of cultural and ethnic groups, their differing resource uses and livelihoods and the importance of specific sacred, ceremonial and artistic sites. Furthermore, the ODMP states that degradation of the wetland and its resources might ultimately lead to cultural degradation. The role of community-based organizations (CBOs) and indigenous stakeholder groups is highlighted in the delivery of objectives, which consider aspects of the cultural heritage, and are delivered through a programme of community-based natural resource management (CBNRM) which provides a framework for CBOs and community trusts to manage land for both consumptive and non-consumptive tourism. Limits of acceptable change (LAC) are proposed to monitor tourism activities and to deliver responsive management actions. Different LAC categories are defined in the management plan, with significant historical and cultural sites such as graves, rock-art and ceremonial sites listed under the 'pristine' category. The impacts of tourism on specific cultural receptors are considered further under the strategic objectives defined in the ODMP.

3 whc.unesco.org/en/soc/3453

The communal ownership of tribal land ensures that the majority of the land of the Delta is held in trust for local communities by the Tawana Land Board (TLB). Some land is leased as concession areas to safari operators for hunting or photographic purposes. The Moremi Game Reserve is wholly utilized for non-consumptive tourism and is unique insofar as it was founded by the indigenous tribe and still supports traditional resource use such as grass and reed cutting. The Bayei, the Tawana, the Hambukushu, the Herero and the Banoka ethnic groups are of notable significance as their lifestyles depend upon wetlands. They are ethnically distinct from other communities in Botswana, having different languages, social structures and relationships. The hunter-gatherer activities of these indigenous people have been practiced at a sustainable subsistence level for centuries and form a distinct element of the area. However, it has been noted that the shift from a traditional economy to a cash economy as a result of tourism represents a cultural change and a shift towards modernity and western market-based values (Mbaiwa, 2011).

Future outlook

Notwithstanding the dual designations and the protection under national legal instruments, the Delta still faces several challenges. Water is a precious resource and close liaison with OKACOM is critical to ensure that any future developments in the Okavango watershed do not adversely affect the site. The Reactive Monitoring of the World Heritage Convention has noted concerns over potential impacts arising from Namibia's water augmentation plans, Angola's possible irrigation scheme, and mineral prospecting and mining operations outside the World Heritage property's buffer zone³. Concerns have also been raised regarding the fluctuating populations of large animals, even though the exact picture remains unclear. However, both poaching (for bush meat) and livestock fencing (to prevent the spread of disease) have

been implicated. As with many wetlands, there is also the threat of invasive species, especially the floating aquatic fern *Salvinia molesta*. Both local communities and tour guides in the safari camps have been successfully trained in monitoring and control of invasive species. Where *Salvinia* infestations have been observed, biological control through the use of a host-specific weevil and physical removal have been successful.

Through sustainable practices and monitoring activities, the traditional organisational structures and land management of the local communities contribute positively to the conservation of the Delta. The delivery of sustainable tourism is dependent on the tribal land tenure system and the inclusion of all indigenous communities. A major consideration for the future is to ensure that tourism does not compromise the traditional cultural identity and livelihoods of the Delta. The robust weaving tradition of the tribes in the Ngamiland district serves as an example of how traditional practices can be maintained in parallel with local economic prosperity through sales to tourists.

Work is still needed to better align the dual interests under both Ramsar and World Heritage designations. This is acknowledged in the State Parties State of Conservation report to the World Heritage Committee and actions are planned through the support of the World Heritage Fund, including updating the ODMP, to address this. Similarly, the possibility of re-nominating the site as a mixed World Heritage property in order to recognise its cultural heritage values within the World Heritage Convention is subject to ongoing research, but progress is contingent on resources and capacity. Overall, it has been recognised that further work is required to ensure that cultural values are more fully embedded in the protection and management of the site:

“Recognition of outstanding natural values by the Convention is enhanced by the national recognition of the cultural context, cultural values and human cultural diversity within the site – each of which contribute to the long term sustainability of this exceptional site. For millennia, the Okavango Delta has played a major role in nurturing both human cultural diversity and knowledge systems, as well as the unique biological diversity and inland water ecosystems.”

(Satau & Crawhall, 2017)

Lessons learned

The Okavango Delta is an example of an ecosystem that has both influenced and that is being managed through adherence to traditional land uses and tribal structures whilst also benefiting from present-day management practices. The key lessons learned include:

- The community-based approach to tourism and protected area management has made a positive contribution to rural livelihoods, maintained traditional indigenous cultures, benefited national income and underpinned the monitoring and management of the area.
- Although they are not fully aligned geographically, the two designations are mutually supporting and reinforcing, insofar as they are both seeking to maintain the Delta as an internationally important wetland system for wildlife through the consideration of differing ecological elements of the site.
- The reports developed by the State Party on the State of Conservation of World Heritage properties and submitted to the World Heritage Committee provide a sound reporting mechanism which identifies and allows for the tracking of conservation actions and outcomes.
- The implementation of the ODMP, and subsequent National Commitments to the World Heritage Commission, are guided by the site-based multi-sector committee responsible for generating the State of Conservation Report.
- The future development of the ODMP provides a further opportunity to pursue both synergies and complementarities in the specific designation criteria and to ensure that the cultural heritage as well as the natural significance is secured and that the local traditional knowledge systems of the Delta are more fully integrated in its governance.



School children hiking through the bay of Mont-Saint-Michel abbey, France (Credit: Hemis / Alamy Stock Photo)

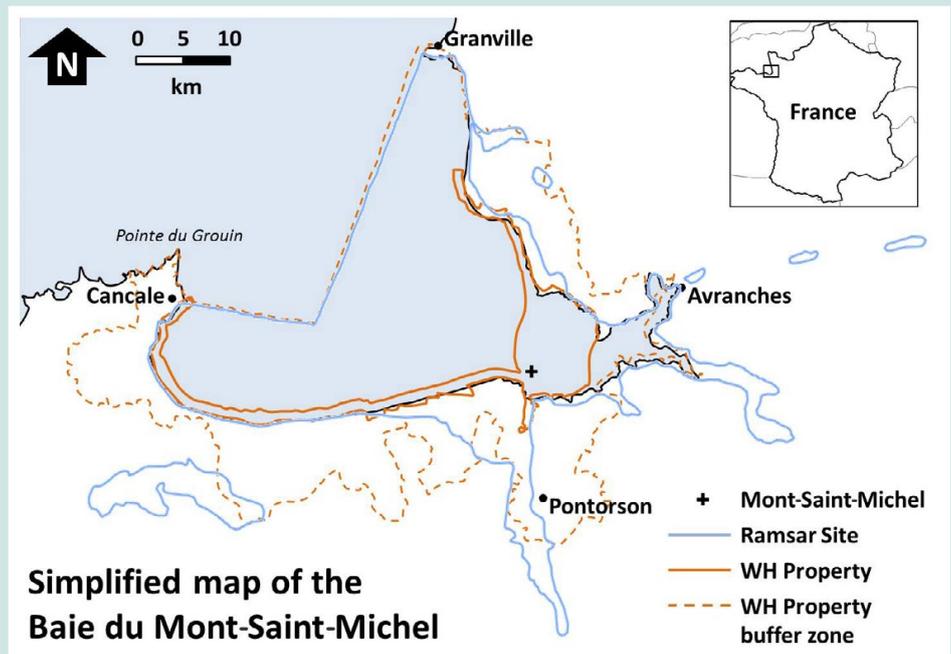
Baie du Mont-Saint-Michel, France

Summary

The Baie du Mont-Saint-Michel has an exceptional tidal range exceeding 13 metres which exposes a vast expanse of diverse habitats including salt marshes, sand and gravel flats, bivalve reefs of *Sabellaria alveolata* and rocky islets. These habitats support up to 100,000 wintering wading birds as well as many other rare and protected species. The area is also of significant cultural importance due to the presence of the “Wonder of the West” on the imposing rocky islet, an 11th-to-16th century Gothic-style Benedictine abbey, dedicated to the archangel Saint Michael, and its accompanying labyrinthine village.

The Ramsar Site covers 62,000 ha and extends into the Baie du Mont-Saint-Michel from Cancale in the west to Pointe du Roc at Granville in the east, and inland along river valleys of the Le Couesnon and La Sélune. The Ramsar Site also includes a series of non-contiguous areas to the south west and the east. The World Heritage property covers a smaller area of 6,560 ha focused around the rocky islet and is surrounded by a buffer zone extending over some 57,510 ha which closely matches the Ramsar Site boundary in the bay but covers a broader terrestrial area.

Despite the World Heritage designation being based on cultural criteria alone, the importance of maintaining the maritime character and protecting the surrounding environment forms an essential component of the continued delivery of the Outstanding Universal Value of the area. The Ramsar Site designation, in combination with other national and European provisions, is considered an essential element for maintaining the overall character of the bay and perpetuating the interdependencies between humans and the natural environment.



Site Description

The Baie du Mont-Saint-Michel is located between Brittany and Normandy on the northern French coast. The bay is characterized by the second highest tidal range in Europe which reaches 16m on the highest tides and averages between 10-11m. The intertidal zone covers an area in excess of 240km² comprising a mosaic of mudflats, sandbanks, gravel beds, *Sabellaria* reefs and salt marshes. The surrounding habitats include dune systems, cliffs and a distinct rocky islet. The abbey of the Mont-Saint-Michel, built between the 11th and 16th centuries, is perched atop a rocky promontory in the south east corner of the bay.

The area is considered to be one of the best examples of Quaternary sedimentation in the world, includes the largest area of salt marsh in France and supports in excess of 100,000 wintering waders along with numerous other species of conservation importance. The site was designated as a Wetland of International Importance on 14th October 1994 and inscribed as a World Heritage property in October 1979 at the third session of the UNESCO World Heritage Committee.

World Heritage and Ramsar designations

The inscription of Mont-Saint-Michel and its Bay on the World Heritage List as a 'cultural site' was on the basis of fulfilling three criteria. Under Criterion i, the area can be considered a masterpiece of human creative genius representing a unique aesthetic achievement as a result of the exceptional combination of the natural site and the human architecture. Mont-Saint-Michel also presents an unrivaled combination of the abbey with its fortified village occupying a narrow space upon the rocky islet, which not only provides an unforgettable silhouette but is also an exceptional example of medieval civilization (Criterion iii) and one of the most significant places for medieval Christianity (Criterion vi).

Baie du Mont-Saint-Michel qualified for inclusion on the List of Wetlands of International Importance on several criteria. The tidal range and the diversity of habitats can be considered exceptional, making it a unique example of a coastal wetland type in the Normandy and Brittany regions (Criterion 1). The marine environment supports a permanent population of bottlenose dolphin (Criterion 4) whilst the expanse of sand flats and salt marshes, which are the largest in France (Criterion 3), regularly support more than 100,000 wintering waterbirds including important numbers of dunlin, curlew, oystercatcher, grey plover, knot, wigeon, brent geese and godwits (Criterion 5).

The description of the ecological character of the Ramsar Site includes specific reference to the Bay's unique social and cultural values. The Ramsar Information Sheet for the Site explicitly highlights the interdependency between

the natural landscape and the architectural heritage of the Abbey, the biological interest of the bay, the geological sedimentation evolution and the economic values associated with current land uses including shellfish farming, tourism and agriculture.

The role of cultural values, practices and traditions in wetland conservation

An outline management plan produced by the Conservatoire du Littoral, a public administrative body established by the French Government under the *Ministère de la transition écologique*, emphasises the essential interactions between the sea, the coast, the rivers and the human activities which give the bay its unique character. However, it is acknowledged that increasing pressures, including from tourism and off-shore wind farm development, need to be reconciled with the bay's Outstanding Universal Value. The development of a management plan requires a collective approach in order to develop and integrate a shared vision across the State Party and its various bodies, local and regional government, civil society and other economic actors. By reaching out across these different sectors a collaborative and participatory approach to resolve issues of knowledge-sharing, governance, conservation and development can be achieved.

Management planning for the Baie du Mont-Saint-Michel clearly recognises the need to integrate three vital elements:

- Protect the landscape and ecological potential of the bay.
- Reconcile the diversity of human uses which underpin the dynamic nature of the bay.
- Preserve the integrity of the bay as a whole.

The human interactions with the natural environment comprise part of the ecological character of the bay and contribute to its cultural values. The high rates of primary production in the bay support extensive shellfish and sea fishing activities; agricultural land management surrounds the tidal areas of the bay and extends onto the saltmarsh meadows; the stunning built structures and the attractive landscape attracts a growing number of tourists; and the diverse coastline provides opportunities for diverse leisure activities including kayaking, sailing, hiking and cycling. However, all these activities exert increasing and cumulative pressures on the biological richness of the bay. In addition, concerns have been raised regarding the impacts of wind turbines on the bay's aesthetic value. Through a collaborative and participatory approach, including workshops and photographic exhibitions, different sectoral representatives, civil society and the government have been made more aware of the need to understand the interactions between these various activities and of the need to find more sustainable approaches in order to maintain the Outstanding Universal Value of the bay.



Monk sitting in a cloister at Mont-Saint-Michel abbey, France (Credit: Hemis / Alamy Stock Photo)

Future outlook

It could be argued that, without robust management measures in place, the bay may become a victim of its own cultural significance. Tourists are placing ever-increasing pressures on the site, not just through their physical footprint within the labyrinth of thoroughfares but through the need for parking and access to the islet. More widely, the need to generate sustainable energy through wind turbines threatens the landscape aesthetic. However, these issues have been recognised formally by the State Party and actions have been taken to establish a wind turbine exclusion zone, to redesign the access route to the islet and to manage car parking in order to reduce impacts on the site.

All of these issues are to be embedded into the management plan that recognises the interdependencies between the natural and human elements of the bay. The first “Conference of the Bay” (*Conférence de la baie*) was held in December 2016 to progress the management planning process. The Conference invited representatives from the environmental and cultural sectors including nature conservation and heritage organisations, historians, heads of state services, local authorities officers, economic actors, religious congregations and parliamentarians from Brittany and Normandy. At the Conference, the *Préfète de la Région Normandie*, Nicole Klein, recognised the need to engage in a participatory management process that embraced the various human and cultural elements of the site, by stating that:

“The founding idea of the Conference of the Bay is to involve all stakeholders in the reflections on the future of the Bay of Mont-Saint-Michel: the State, Norman and Breton territorial communities but also socio-professional actors and representatives of civil society.”

Within this forum it will be possible to share views and exchange information in order to develop a coordinated strategic vision for the bay that raises the collective awareness of the universal value to humanity of the cultural and natural heritage of the area. As Erick Goupil, President of the Schéma de Cohérence Territoriale (Inter-SCoT) harmonised territorial plan for Normandy and Brittany, has stated:

“The management plan must convince not compel.”

Lessons learned

The Baie du Mont-Saint-Michel represents a spectacular juxtaposition of a masterpiece of human creative genius alongside dynamic and diverse wetland habitats supporting a rich wildlife. The following key lessons can be learned from this example:

- The Outstanding Universal Value and the ecological character of the area depend on the relationships between the human and natural elements.
- Maintaining the correct balance between these components is essential for the future of the area and should form a key component of any site management planning.
- The ongoing management planning process recognises this need and acknowledges that a sustainable future is only possible if all the cultural aspects, including heritage, socio-economics and development, are understood by all stakeholders.
- For a management plan to be successful, this knowledge should be integrated with an understanding of the sensitivity of the various ecological components and processes in the context of a collaborative and cooperative approach.



Northern Lights (Aurora borealis) over Pine Lake in moonlight, Wood Buffalo National Park, Alberta, Canada (Credit: Age Fotostock / Alamy Stock Photo)

Wood Buffalo National Park, Canada

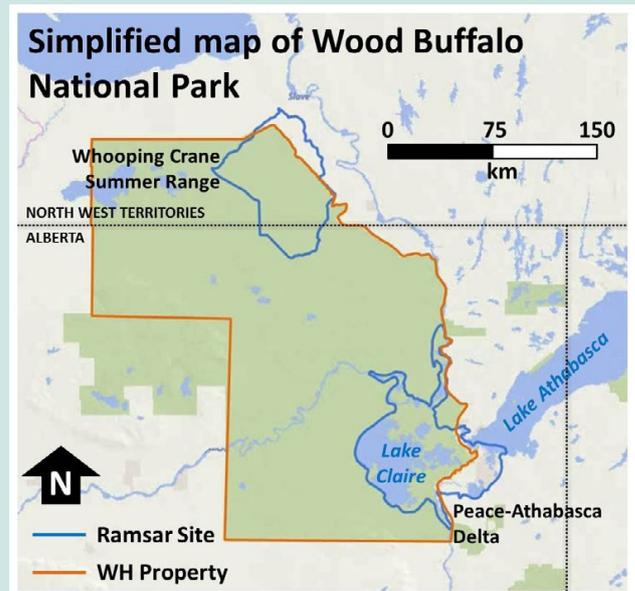
Summary

Situated on the Boreal plains in the north-central region of Canada, Wood Buffalo National Park includes one of the world's largest inland delta systems located at the confluence of the Peace-Athabasca river systems and is home to the world's largest population of free-roaming wood bison. The area contains two Ramsar Sites covering a combined area of more than 2 million hectares, primarily within the 4,480,000 ha World Heritage property.

Wood Buffalo National Park is an outstanding example of ongoing ecological and biological processes encompassing some of the largest mostly undisturbed grass and sedge meadows left in North America. The large inland delta, salt plains and gypsum karst add to the Park's uniqueness. North of the Peace-Athabasca Delta, the Whooping Crane Summer Range Ramsar Site is comprised of a complex of marshes, shallow ponds, streams, lakes and bogs located near the northern limit of the Boreal Forest Region and west of the Canadian Shield. It is the only remaining natural nesting place of the endangered whooping crane.

The Park is composed of three river deltas and three large freshwater lakes with rich growths of aquatic vegetation and linked to Lake Athabasca by meandering river channels. Underlain by discontinuous permafrost, there are large expanses of open grass and sedge meadows interspersed with hundreds of perched wetland basins, giving rise to thousands of kilometres of shoreline during spring high water. The area is one of the most important nesting, resting and feeding areas for numerous species of waterbirds in North America. Up to 400,000 birds occur during spring migration, and more than one million occur in the fall. The delta meadows provide grazing for large herds of free-roaming bison, one of over 40 other mammals recorded.

The dual designations help safeguard the ecological character of the site and contribute to the delivery of several of the criteria which underpin the Outstanding Universal Value of the area. Maintaining and strengthening the cultural and traditional practices and knowledge of eleven local indigenous peoples (First Nations and Métis) living in the Park are vital in order to deliver on the wider conservation management objectives.



Site Description

Located within the Boreal Forest Region, Wood Buffalo National Park spans the boundary of Alberta and the Northwest Territories of Canada, extending over an area of more than 44,800 km². It is Canada's largest national park, the second largest national park in the world and considered an icon of the Canadian wilderness. The Park sustains the world's largest herd of wood bison and provides critical wetland habitats for the endangered whooping crane. Eleven First Nations and Métis peoples conduct traditional harvesting and wider activities which contribute to the significant cultural value of the area. Two Ramsar Sites are present within the Park, the Peace-Athabasca Delta in the south east and the Whooping Crane Summer Range in the north east. The Peace-Athabasca Delta comprises three large rivers and a series of freshwater lakes, meandering channels and wetlands. The entire delta complex is underlain by discontinuous permafrost resulting in an extraordinary series of perched basins and mosaics of wet meadows, flooded lakes and bare shorelines. The Whooping Crane Summer Range comprises a mosaic of marshes, shallow pools, streams, bogs and lakes.

World Heritage and Ramsar designations

Inscribed on the World Heritage List as a result of outstanding ecological and biological processes, Wood Buffalo National Park encompasses some of the largest remaining undisturbed grass and sedge meadows in North America. The site qualifies under three Outstanding Universal Value criteria. The superlative concentrations of migratory wildlife and the exceptional inland delta, salt plains and gypsum karst are all equally internationally significant (Criterion vii). The Park represents the largest intact example of the Great Plains-Boreal grassland ecosystem and is the only place where the predator-prey relationship between wolves and wood bison has continued unbroken over time (Criterion ix). The northern reaches of the Park, within the Whooping Crane Summer Range Ramsar Site, represents the only breeding grounds in the world for whooping cranes (Criterion x). The sheer size of the Park contributes to the protection of entire ecosystems and the delivery of *in situ* conservation that form the basis for the Park's Outstanding Universal Value.

The Peace-Athabasca Delta, whilst only representing a relative small area of the larger National Park, still qualifies for inclusion on the List of Wetlands of International Importance through several criteria. The area is one of the largest boreal inland deltas in the world (Criterion 1) and supports species at risk, such as the wood bison (Criterion 2). The Delta, lying at the intersection of all four major North American migratory flyways, is also one of the most important waterfowl nesting and staging areas in North America for ducks and geese on their way to their breeding grounds further north (Criterion 4). In spring up to 400,000 birds may use the Delta, and more than one million birds congregate in the area in the autumn (Criterion 5). The Whooping Crane Summer Range Ramsar Site qualifies as an example of a rare natural mosaic of wetland types

(Criterion 1) supporting internationally important numbers of waterbirds (Criterion 6). The area also qualifies based on the number of species, including 47 species of mammal, and range of ecological communities (Criteria 2, 3 and 4).

The role of cultural values, practices and traditions in wetland conservation

The First Nations and Métis peoples have a long-standing and ongoing relationship with the land and eight First Nations reserves are present within the Park. Archaeological finds reveal that the human interactions extend back thousands of years. People from the Beaver, the Slavey, the Chipewyan and the Cree communities have inhabited the area for generations and to them the land represents a reservoir of knowledge that connects the inhabitants of today with their ancestors. Many of them continue their culture and traditional ways of life, including hunting and trapping and the gathering of berries and medicinal herbs.

Since the establishment of the National Park, the role of the traditional uses has represented a sometimes contentious rights-versus-privilege based issue. Rights have been formally recognised through a Supreme Court of Canada decision and this has led to collaborative revision of the Park's management practices grounded in mutual recognition, respect and trust. This approach has resulted in the incorporation of traditional knowledge with contemporary science in projects like the Peace-Athabasca Delta Ecological Monitoring Program, a response to growing concerns about the cumulative impact of development (flow regulation, pulp and paper mills, oil and gas exploration and extraction, forestry, and agriculture) and climate change on the delta. This Program includes First Nations and Métis governments, traditional harvesters, government, and non-governmental organizations and uses both science and traditional knowledge to measure, evaluate and communicate the state of the delta. Park management practices are also informed by the Co-operative Management Committee which consists of local First Nations and Métis governments and park management who work together on a variety of topics including: management planning, wildlife management, monitoring initiatives, tourism, hiring, harvesting and other items related to the management of Wood Buffalo National Park and of mutual interest.

Visitors to Wood Buffalo can connect not just with nature but the unique culture, history and people of the area. Through personal contacts, visitors can have meaningful interactions and experience first-hand the life, history and traditional ways of the local First Nations and Métis peoples. The added value that such important and traditional connections provide to visitors is part of the management vision for the Park:

“Wood Buffalo National Park is a cultural landscape valued by local Aboriginal peoples because of their complex and enduring relationship with the land. Wood Buffalo National Park has a respectful and meaningful relationship with local



Dawn skies reflected in a beaver pond, Wood Buffalo National Park, Alberta, Canada (Credit: Age Fotostock / Alamy Stock Photo)

Aboriginal people and in the spirit of working towards a shared vision, they will help to guide the long-term direction and management of park resources; identifying issues and establishing protocols that guide and contribute to the ongoing monitoring of cultural resources and ecological integrity.”

Future outlook

Despite protection of the park, concerns have been raised about potential negative impacts on the delta and its inhabitants. A petition from the Mikisew Cree First Nation resulted in a World Heritage Committee Decision requesting the State Party of Canada to invite a joint World Heritage Centre/IUCN Reactive Monitoring mission to better understand the situation. The findings and subsequent recommendations of this mission (UNESCO & IUCN, 2017) emphasised the mutual reinforcing of the dual designations and they have also catalysed political support and commitments. The Government of Canada fully recognises that in order to maintain the importance of the Park a shared vision is required which embraces First Nations and Métis peoples and their cultural traditions and, as result of the Reactive Monitoring mission, a collaborative action plan will be developed to take this forward. However, to ensure that the site's cultural and natural heritage are secured, a wide range of complex issues need to be addressed. These include the negative effects of flow regulation activities associated with operation of dams on the Peace River; the potential cumulative impacts on ecological processes and the hydrological regime of the Peace-Athabasca Delta of existing and planned hydropower development; and the impacts of existing and planned oil sands projects in the Athabasca oil sands region, as well as their associated tailings ponds, including the impact on movement of migratory birds and the ecosystems that support the traditional ways of life of First Nations and Métis peoples.

Lessons learned

Across Wood Buffalo National Park, cultural traditions are intertwined with the natural landscape. A variety of key lessons can be learned from this example, including:

- As recognized explicitly in the management plan, cultural traditions need to be maintained and integrated into the ecological management of the Park. Building and improving relationships with partners and stakeholders is identified as one of the main objectives of the plan.
- There is a strong appreciation that by engaging with stakeholders and partners in an open, transparent and equitable manner it is possible to foster appreciation and understanding for Wood Buffalo National Park and the heritage of the system.
- Park management is best undertaken when both traditional knowledge and contemporary science are used to inform decision making, and when local First Nations and Métis governments and park managers work co-operatively. The Co-operative Management Committee and initiatives such as the Peace-Athabasca Delta Ecological Monitoring Program demonstrate this evolving management philosophy which benefits areas designated under both Conventions.
- The World Heritage Centre/IUCN Reactive Monitoring mission resulting from a World Heritage Committee Decision has been a key instrument in ensuring that the mutually reinforcing nature of the dual designations is clearly acknowledged and that indigenous rights and perspectives are genuinely integrated into the governance and management of the Park.



Fishermen and their traditional boats, Banc d'Arguin, Mauritania (Credit: Hermes Images, AGF Srl / Alamy Stock Photo)

Banc d'Arguin National Park, Mauritania

Summary

Fringing some 30% of the Atlantic coast of Mauritania, the park comprises a mosaic of sand-dunes, coastal swamps, small islands, mangroves, sea grass beds and shallow coastal waters. Stretching for some 150km from Cap Blanc in the north to Cap Timiris in the south, the Park is the largest coastal park in Africa with a surface area of 12,000 km². The site is a stunning example of the juxtaposition of the harsh desert environment and the vibrancy of the marine zone. The boundaries of the Ramsar Site and the World Heritage property overlap and follow the National Park boundary.

Permanent upwelling, nutrient rich seawater stimulates high rates of plankton production which drives a highly productive coastal ecosystem. Much of the marine waters of the Park remain less than 5m deep up to 40km from the coast. Over 400km² of tidal mudflats support upwards of 2 million shorebirds, the largest and most important concentration of Palaearctic birds in the world. For instance, over two thirds of the world population of bar-tailed godwits and almost half of the global population of red knots visit the site. In addition to the diversity and number of waterbirds, the endangered green sea turtle and leatherback turtle, bottlenose dolphin and Atlantic hump-backed dolphin are all present in the marine waters. The local people, the Imraguen, live in scattered villages within the park and use traditional fishing methods, which are increasingly under threat from immigrant and industrial fishing activities.



Site Description

Lying on the coastline of Mauritania, the Park represents a transition zone between the Sahara desert to the east and the Atlantic Ocean to the west. The coastal waters in this part of West Africa are influenced by the cold Canary Island ocean current and a permanent upwelling of nutrients and minerals which generate high levels of plankton production, as well as by the warmer South Equatorial current which follows the intertropical convergence front as far as Cap Blanc. The highly productive waters, combined with the shallow (typically less than 5m deep) submarine tidal bank which extends 80km from the shoreline, generate an ecosystem teeming with life.

The coastline is a mosaic of windblown sand dunes, marshes, mangroves, tidal mudflats, channels and creeks, sandbanks and small islands. Over 190 plant species have been recorded within the park and the extensive wetland habitats provide the biggest fish feeding and spawning area in West Africa. The extensive shallows are a result of the wind blown transport of sand from the desert being progressively deposited on top of sediments deposited in relict estuaries. The supply of wind-blown sediment combined with upwelling waters nourishes the wetland and underpins the diverse food webs of the area.

World Heritage and Ramsar designations

The Ramsar site was designated in 1982 and covers 1,200,000 ha. The scale and diversity of the wetland habitats qualifies the site under Criterion 1. The site qualifies for designation under several criteria but specifically is globally significant for numbers of waterbirds (Criterion 5), with more than 20 different species exceeding the 1% threshold value (Criterion 6). The presence of the endangered green sea turtle and species of cetaceans, seals, rays and sharks further qualifies the area under Criteria 2 and 8.

The resident people, the Imraguen, and their traditional fishing practices, along with many Neolithic archaeological sites are formally recognised as part of the overall ecological character of the Ramsar Site. The Mauritanian Institute for Oceanographic and Fisheries Research (IMROP) has been working with the National Park of Banc d'Arguin (PNBA) to better understand the capture fisheries. Specific management measures have been established to encourage these traditional fishing practices and to ensure the sustainability of fish stocks.

The global importance of the Banc d'Arguin for nesting and migratory wading birds and its productive mosaic of diverse habitats qualified the site for inscription as a World Heritage property in 1989. The boundaries of the World Heritage property match those of the Ramsar Site. The rich and diverse marshes covered with seagrass beds, and the maintenance of a marine and coastal environment sufficiently rich and diverse to support important communities of fish, birds and marine mammals qualifies the site as being of Outstanding Universal Value under Criterion ix.

The diversity and magnitude of the wetlands provide shelter to more than two million migratory birds from northern Europe,

Siberia and Greenland. The nesting bird population number and diversity ranges between 25,000 and 40,000 pairs belonging to 15 bird species. The shallows and islands support 45 fish species, 11 species of shellfish and numerous mollusc and crustacean species. The site also contains several species of marine turtles, notably the endangered green sea turtle, and the bottlenose dolphin and the Atlantic hump-backed dolphin are frequently observed (Criterion x).

The role of cultural values, practices and traditions in wetland conservation

Neolithic archaeological sites and vestiges of the Almoravid civilisation (from around the year 1000 CE) found on some of the scattered islands in the park are testament to the longevity of the human-environmental interactions in this part of West Africa. The local Imraguen people relate many of their customs to the natural environment. Until the 1990's these nomadic people moved their small villages of makeshift huts to follow the movements of large shoals of fish, especially mullet, along the coast, maintaining an age-old life style, based almost exclusively on harvesting migratory fish and utilising traditional sail boats and techniques unchanged since they were recorded in the 15th century by Portuguese explorers. Further afield in the desert areas, some nomadic camel and goat herding is practiced but this has declined in recent years as a result of desertification.

Some 1,000 Imraguen live in seven villages within the park, many at Cap Timiris. Because of a complete absence of freshwater they are dependent on supplies collected outside the park or from those provided, expensively, by the navy. Traditionally the men deal with the fishing whilst the women are involved in producing roe, tishtar (small pieces of dried and crumbled mullet) and mullet oil, with techniques and knowledge passing from mother to daughter. However, traditional fishing without using boats and the sustainable non-polluting method using canoes is threatened by the pressure of illegal industrial fishing boats and from fishermen, mainly from Senegal, in motorised canoes and using gill nets to catch sharks and rays for the lucrative Far East market. The World Heritage Committee (UNESCO 2016) through its adopted decisions encouraged the State Party to continue involving the local communities in the surveillance and management of the property and requested that a permit system and a ban on motorized boats be put in place to reduce overfishing by immigrant non-resident communities.

Competition, and the high prices available for shark and ray fins, attracted some Imraguen to abandon their traditional practices and to take up motorised shark hunting. However, under pressure from the Government and NGOs in the early 2000s, the fishermen of the Imraguen agreed voluntarily to hand over their nets in return for cash, one euro per metre of net returned, to preserve the shark and ray species in the Banc d'Arguin National Park. Whilst this return to traditional fishing activities has generated positive conservation outcomes and the environmental benefits are recognised by the Imraguen, concerns have been raised by the local community. A 71 year old fisherman, Soueilim Ould Bilal, summed up the situation:



Portrait of an Imraguen fisherman drinking tea, Banc d'Arguin, Mauritania (Credit: SuperStock / Alamy Stock Photo)

“In just one day, I used to capture 400 rays with my nets which are going to be banned from now on. What I will receive (as compensation) I will get only once. I used to get money every day from this fishing.”

However, the Imraguen recognise the need to defend and protect this precious environment, and pride in their traditional ways lies at the heart of the Imraguen thinking. As a tribal elder stated:

“If an Amrig (member of Imraguen tribe) gives you his word he will stick to it.”

Through training and knowledge exchange, efforts are also being made by European-based NGOs to improve the quality of the traditional fish products produced by the Imraguen, and especially the salt-cured roe or *bottarga*. As the quality of the products improves opportunities are being pursued to find alternative markets, both nationally and internationally, and to directly manage the sale of transformed products in order to maintain traditional practices and improve the prosperity of the local communities. In March 2016, the World Heritage Centre organised a regional workshop in the park on the role of local communities in the sustainable management and conservation of World Heritage properties. The valuable contributions of the Imraguen to this workshop enabled a better understanding of the importance of consulting and involving local communities in order to improve the state of conservation of World Heritage properties.

Future outlook

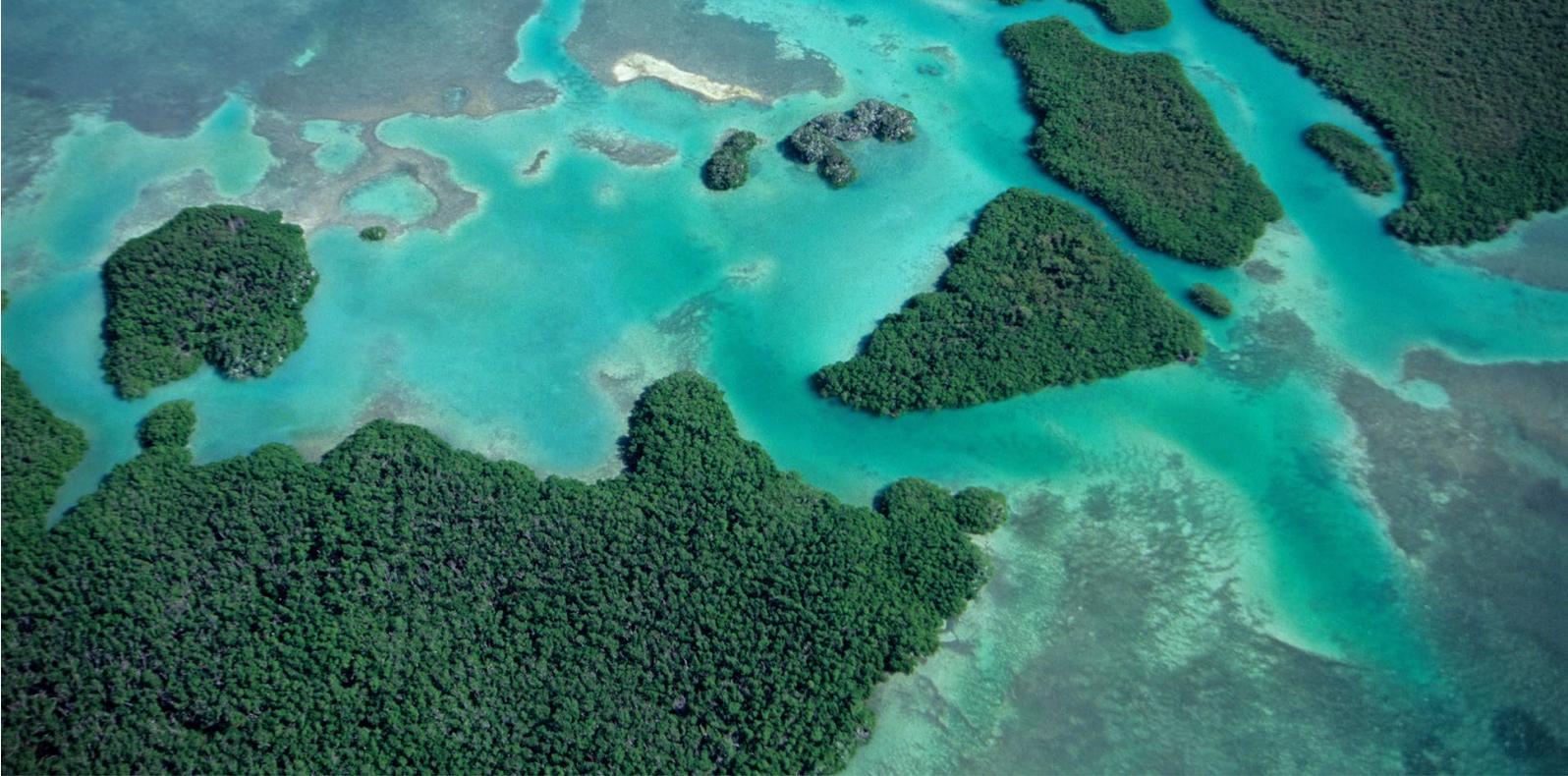
The Park remains threatened with unsustainable over-fishing by international industrial-scale exploitation of the waters beyond the seaward boundary and by pirate fishing fleets from neighbouring countries within the Park. The traditional, sustainable fishing methods practiced by the Imraguen are permitted within Park limits under a law

passed in 2000. Effective surveillance and monitoring remains a challenge across such a vast area and management capacity and resources are lacking. However, the continued efforts to engage with the Imraguen people, and for them to actively participate in surveillance and the management of the fish stocks, bodes well for the future of the site.

Lessons learned

Even in areas with a very low human population density, as is the case in the Banc d'Arguin National Park, problems can arise and wetland wildlife can be degraded. This case study has demonstrated that these problems may not be a result of actions of the local community but may arise due to external pressures and forces. Therefore it is important to capture some key lessons learned.

- It is considered essential to combine the local and indigenous knowledge of the Imraguen community with wider science to ensure that the traditional fishing techniques remain sustainable and guarantee the conservation of the area.
- The local communities are crucial in the surveillance of non-traditional fishing techniques, the implementation of a permit system and in the management and conservation of the area.
- The decisions adopted by the World Heritage Committee as part of the reporting on the state of conservation of properties inscribed on the World Heritage List are assisting site managers with defining and prioritising conservation actions on the ground. By encouraging the State Party to involve local communities in the management of the Banc d'Arguin National Park the World Heritage Committee decisions are contributing to the ongoing conservation of the area.
- By developing opportunities to generate improved prosperity, supported by information exchange and knowledge sharing, it is possible to protect cultural traditions, improve human well-being and protect the biodiversity of the area.



Aerial view of Red mangrove (*Rhizophora mangle*) coastal lagoon, Sian Ka'an, Mexico (Credit: Nature Picture Library / Alamy Stock Photo)

Sian Ka'an, Mexico

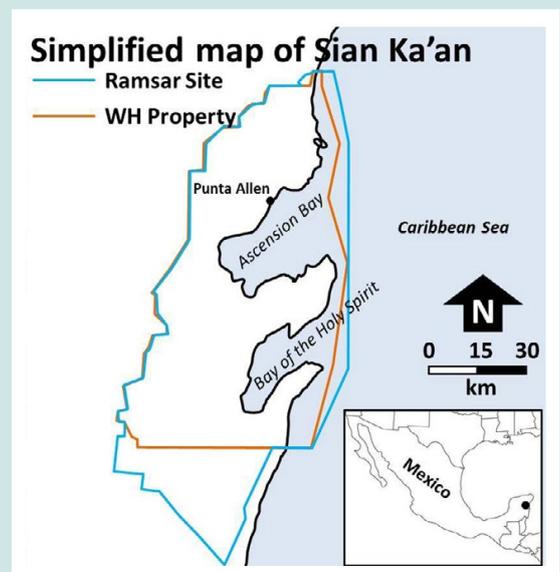
Summary

Located on the east coast of the Yucatán peninsula, Sian Ka'an contains tropical forests, mangroves and marshes, as well as a large marine area intersected by a barrier reef. It provides a habitat for a rich flora and a fauna comprising more than 300 bird species, as well as a large number of the region's characteristic terrestrial vertebrates, which cohabit in the diverse environment formed by its complex hydrological system.

The Ramsar Site covers 652,193 ha and includes the barrier reef, two large shallow bays, swamps, marshes, mangroves, low flooded forests and a unique interconnected subterranean freshwater system. The Site supports a range of threatened and endemic species including more than 300 bird, 100 mammal and 40 amphibian and reptile species. The ecological character of the Ramsar Site includes the rich Mayan cultural and archaeological elements.

Based on natural criteria, the World Heritage property covers a slightly smaller area of 528,000 ha and with a roughly equal split between one third tropical forest, one third marshes and mangroves and one third coastal lagoons and reefs. The diversity of life is exceptional, with the property providing a home for numerous charismatic species such as jaguar, puma, ocelot, Central American tapir and manatee. Noteworthy and rare natural phenomena include the "Cenotes", water-filled natural sinkholes hosting specialised communities and the "Petenes", tree islands emerging from the swamps. Both of these systems are connected by the extensive underground freshwater system providing significant contributions to *in situ* conservation.

Both site designations acknowledge the cultural values of the site and especially the linkages to the indigenous Mayan culture, buildings and land management practices.



Site Description

Located on the eastern Caribbean coast of the Yucatan peninsula in Quintana Roo, Mexico, Sian Ka'an is one of the largest complexes of wetland habitats in Central America. The site comprises a mosaic of barrier reef, lagoons, bays, dunes, sinkholes, swamps, marshes, mangroves and an extensive underground river system. The area is also the setting for the ancient Mayan culture and contains remains of 25 Mayan buildings, temples and shrines; it is the centre for the indigenous communities known as the Santa Cruz Mayas. In the language of the Mayan peoples, Sian Ka'an means 'Origin of the sky' or 'Where the sky is born'.

World Heritage and Ramsar designations

The property was inscribed on the World Heritage List in 1987. The area had previously been declared a Biosphere Reserve by the Federal Government in 1986 and almost the entire site is under the land ownership of the Federal Government. The site was considered for inclusion on the World Heritage List as it is one of the most continuous and important expanses of wetland in Mesoamerica, with no direct comparator in the region. The relatively undisturbed character of the interface between the sea and the land along the coastline contributes to the overall aesthetics and beauty of Sian Ka'an. The complexity and juxtaposition of various wetland habitats create a variety of shapes, forms and colours providing fascinating land and seascapes (Criterion vii). The scale and diversity of the site contributes to the conservation of a variety of habitats and species of Outstanding Universal Value. Noteworthy and rare natural phenomena include the "Cenotes", water-filled natural sinkholes hosting animal communities adapted to these demanding conditions, and the "Petenes", which are tree-topped islands which emerge from the swamps. Both these rare systems are connected by a network of underground freshwater systems, jointly forming an invaluable and significant complexity of habitats (Criterion x). However, despite the diversity of the cultural heritage, at the time of inscription it was noted that, notwithstanding the importance of the cultural elements, the Mayan sites present would be unlikely to qualify in their own right under the Convention.

Sian Ka'an qualifies for designation as a Wetland of International Importance on the basis of three criteria. The presence of the diverse natural wetland types, including freshwater swamps, mangroves and coral reefs, many of which are the only representative examples in the region, qualify the site for designation under Criterion 1. The site supports numerous plant and animal species that are vulnerable and critically endangered, including mammals such as the jaguar, puma, ocelot, tapir and manatee, and reptiles such as the loggerhead, hawksbill and leatherback turtles (Criterion 2). The site is known to support more than 850 vascular plants, some 339 bird species, of which over 200 are breeding species, over 1,700 terrestrial and aquatic invertebrates, of which 20 species of insect are new

to science, and over 400 species of fish. This abundance of wetland life clearly demonstrates the importance of the area for maintaining the biological diversity of the region (Criterion 3). The 23 Mayan archaeological sites within its boundary, including the shrines at Xamach, San Miguel, San Juan, Xlahpak or Vigía del Lago and Tupak, form part of the ecological character of the Ramsar Site. In addition the traditional fisheries, especially for the Caribbean spiny lobster, and the use of forest resources are considered important elements of the social and cultural value of the site.

The role of cultural values, practices and traditions in wetland conservation

There is evidence that the area has been occupied by human settlements for more than 2,300 years. The Mayan sites registered in the reserve mostly date from the late post-classical period (1200 – 1500 CE). In the reserve area the Maya developed a self-sustained shifting agriculture and a system of irrigation canals. The agricultural practices were complemented by harvesting from the forests and wetlands, a practice still continued by several communities today. The people traditionally made use of some 185 forest and wetland plants for over 300 different uses in food, chewing gum resin, medicine, clothing, dyes, thatch palm leaves and all types of building materials. Conservation initiatives have encouraged the use of traditional skills and the development of economic activities, including embroidery, furniture carving, medicinal plant use and honey making, in order to help the Mayan culture to survive whilst developing sustainable alternative livelihoods. Community-owned and regulated fisheries, especially for the spiny lobster, involve some 70% of the residents living in the protected areas, such as the long-established Mayan fishing co-operative at Punta Allen. Through self-imposed zonation of no-fishing areas and seasonal catch restrictions, the lobster fisheries in Sian Ka'an are recognised through international certification from the Marine Stewardship Council for their sustainable practices.

Pursuing a sustainable approach to wetland management has enhanced the opportunities to secure the traditional land management practices of the Mayan communities. Many local residents have become allies in the management of the area as they have understood the competitive advantages of sustainable development and natural resource use. The maintenance of traditional practices is considered necessary for both the reserve and the local Mayan communities to thrive.

Future outlook

The area has a management plan which integrates the three protected areas (Ramsar Site, World Heritage property and Biosphere Reserve) and provides a platform for cooperation across government and non-government stakeholders. The plan sets out approaches to regulate certain activities such as fishing, tourism services and infrastructure development. The management plan has also introduced zoning of areas



Mayan ruins at Chunyaxché (Muyil) near Tulum, Yucatan Peninsula, Quintana Roo, Mexico (Credit: Witold Skrypczak / Alamy Stock Photo)

within the reserve in order to strengthen the sustainable use of natural resources. The presence of such a plan provides a robust framework in order to facilitate delivery of the objectives of the multiple designations. Evaluation of the management plan is due in 2020 (Schaaf and Clamote Rodrigues, 2016).

Notwithstanding the positive approach to site management, Sian Ka'an still faces challenges. The coastal area of the Yucatan peninsula is prone to frequent and severe tropical storms. However, the barrier reef serves as a breakwater which reduces wave energy and prevents beach erosion. Elsewhere in the region the destruction of the reef has also been accompanied by ensuing dramatic beach erosion (Mazzotti et al., 2005). The protection of the barrier reef provides a positive lesson of how conservation of habitats can contribute to disaster preparedness and risk reduction. Anthropogenic threats stem primarily from tourism and over-fishing, especially of spiny lobster, and, to a lesser extent, agricultural pollution, forest fires and invasive species.

As the popularity of the region has increased, pressures from tourism have grown. This has not only led to conflicts over natural resource exploitation, but it has exacerbated conflict between the Mayan traditional culture, conservation sponsored by major international NGOs and UNDP, and increasingly intrusive but, for some, profitable tourism. Whilst some groups favour small-scale, low-impact, community-based tourism, others, such as large-scale tour operators, are primarily interested in maximising profits. Increasing tourism can also result in social and cultural shifts in local communities and an abandoning of traditional practices in favour of more commercial practices. Many Maya have lent or leased their community-owned forest lands to timber companies, allowing the younger generation to abandon their traditional land in order to secure jobs as

building workers in the tourist resorts on the Riviera Maya coast, which has been growing at a rate of some 20% per year. Therefore, to mitigate the negative impacts of tourism, the management of the protected area needs to consider not just conservation management but also destination management. This requires a sophisticated approach to zonation, visitor access and regulation as well as addressing non-environmental factors relating to socio-economic changes in local communities.

Lessons learned

Sian Ka'an is rich in biological diversity and is culturally important for the Mayan people. The following key lessons can be derived from Sian Ka'an:

- Having a clear management plan that explicitly integrates the multiple designations and provides a robust framework to ensure that potentially damaging activities are regulated and that the overall area is zoned to ensure any development is sustainable.
- Management needs to ensure that the fringing barrier reef, and to a lesser extent the mangroves, are maintained not only for their biological diversity but also for the role they play in protecting natural and cultural heritage from tropical storms.
- There is a symbiotic relationship between the long-term protection of the natural heritage and the future of the traditional management practices, such as that exemplified by sustainable lobster fisheries. The one cannot thrive without the other.
- As tourism expands so does the potential for conflict, environmental degradation and social and cultural shifts in local communities. Therefore, future mitigation needs to consider not just conservation management but also "destination management" and a sophisticated approach to zonation, visitor access and regulation.



O torii Gate, the giant torii gate that is part of the Itsukushima Shinto Shrine complex, Itsukushima Island, Japan (Credit: Lucas Vallecillos / Alamy Stock Photo)

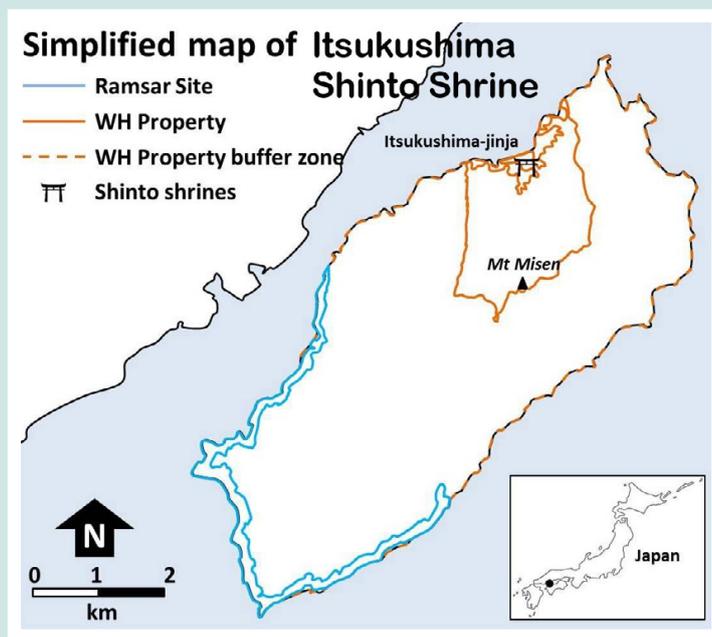
Itsukushima Shinto Shrine, Japan

Summary

The island of Itsukushima lies in the Seto Inland Sea some 10km south west of the city of Hiroshima. The island has been considered a holy place of Shintoism since the earliest times and is often referred to as “the island where god resides”. The island not only supports shrine complexes but it is also a combination of spiritual power and natural beauty, including extensive forests, relatively undeveloped sandy shores and the holy Mount Misen.

The World Heritage property covers 431.2 ha, with a wider buffer zone (2,634.3 ha) extending across the entire island and part of the sea in front of the Itsukushima Shinto Shrine. The property, inscribed due to its cultural values, comprises 17 buildings and three other structures forming two shrine complexes (the main Honsha shrine complex and the Sessha Marodo-jinja complex) and extends through a forested zone to Mount Misen. Shrines were probably established on the island in the 6th century, and the present shrine dates from the 13th century but is an accurate reflection of the 12th century construction style. The shrine is in the general tradition of Japanese Shinto architecture which embraces the trinity of man-made architecture in the centre, the sea in the foreground and the mountains in the background. The shrine is considered to be an outstanding architectural work which effortlessly integrates built elements with the natural setting.

The Ramsar Site is limited to a natural coastal strip covering 142 ha around the southern end of the island comprising sandy shores and intertidal marshes. Compared to other parts of coast of the Seto Inland Sea, the Site represents a well-preserved example of a coastal wetland. Spring water issuing from Mount Misen combines with the inflowing sea water to form brackish, grassy tidal marshes and sandy beaches. These habitats provide an ideal habitat for the endangered dragonfly *Orthetrum poecilop miyajimaensis*, a sub-species endemic to the island.



Site Description

Lying in the northwestern part of Hiroshima Bay, the island of Itsukushima is some 10km long and up to 4km wide. Much of the island is forested and, in comparison to other coastal areas in Japan, the population density is relatively low. The island has been widely acknowledged as being one of the three most scenic areas in Japan, annually attracting up to 3 million tourists.

The island of Itsukushima is believed to be the dwelling place of a god and is venerated by the local inhabitants in the surrounding coastline and islands. Since ancient times, the locals have felt that the spirit of god is manifest in the shape of the surrounding mountains, with Mount Misen (530m) being the most important mountain. It is said that local people deified the god dwelling in the island as:

*“Itsukushima no kami
(the god of Itsukushima)”*

and had originally worshipped this god from the opposite coast across Hiroshima Bay without landing on the island itself due to their belief that the land was sacred.

Around 811CE, and possibly earlier, points of worship were established on the margins of the island, and eventually, primitive buildings and shrines were constructed. Over time these developed, into a compound of main buildings and shrines. The shrine buildings which began to appear along the waterside emphasized the frontal views with the natural environment providing a backdrop, and, in particular, Mt. Misen and its ridge profile. Consequently, the entire area, from the water of Hiroshima Bay, through the large shrine gate in the foreground to the mountains in the background, came to be recognized as a unified natural environment surrounding the sacred shrine buildings.

The World Heritage property buffer zone includes the entire island of Itsukushima, including all of the Ramsar Site, and a portion of the sea area in front of the Itsukushima Shinto Shrine. These areas are also designated and protected under national and local laws including the Law for the Protection of Cultural Properties, the Natural Parks Law, the City Planning Law and the Forest Law. These laws control actions that could impact upon the current state of the structures, landform or vegetation with the aim of preserving both the natural and historic environment of the island.

World Heritage and Ramsar designations

The site was inscribed on the World Heritage List for its cultural importance. The shrine buildings are considered to be an outstanding work combining man-made and natural elements. The built structures exhibit great artistic and technical value and are positioned so as to combine the sea along with the backdrop of the mountains. The result is a creative masterpiece which integrates perfectly the human

and natural forms (Criterion i). The setting of shrine buildings as the central part of a trinity with the sea in the foreground and mountains in the background is now widely recognized as a standard of beauty against which other examples of scenic beauty have come to be understood. It also provides invaluable information regarding the understanding of the evolving spiritual culture of the Japanese people and the concept of scenic beauty (Criterion ii).

The buildings of the Itsukushima Shinto Shrine are outstanding examples of the ancient type of Japanese shrine architecture which seamlessly integrates with the surrounding landscape (Criterion iv) and which contributes to the understanding of the ancient shintoism and expression of Japanese religion (Criterion vi).

The coastal strip comprising the Ramsar Site qualifies under two criteria: Criterion 2 and Criterion 9. By supporting 100% of the global population of the vulnerable endemic dragonfly *Orthetrum poecilops miyajimaensis* the coastal wetland habitats are considered internationally important. The ecological character of the Site also acknowledges the wider importance of the historical and cultural landscape of the island and that protection of human heritage contributes to the wise use of the wetland habitats.

The role of cultural values, practices and traditions in wetland conservation

Extending from the built environment to the sea and to the mountains, the cultural heritage of Itsukushima integrates human and natural elements not just in the immediate vicinity of the shrine buildings but across the entire island. Therefore, the legal protection afforded to the island, primarily on the basis of the cultural heritage, inherently seeks to protect both the human-made and natural components. Similarly, the cultural values are intrinsically embedded in the forested mountain landscape and the coastal wetland habitats.

The recognition of the cultural value of the island has protected the valuable natural coast from development and conversion. Without this cultural link it is possible that, as for 60% of the adjacent coast around the Seto Inland Sea, the coastal habitats would have been lost and *Orthetrum poecilops miyajimaensis* would be extinct.

Future outlook

Under a variety of legal instruments, the entire island of Itsukushima is protected from any actions that would alter the existing state of landforms or vegetation with the aim of preserving both the natural and historic environment. Two management plans have been established to prevent tourism and associated urbanization compromising the Outstanding Universal Value of the natural and historic landscape: the Preservation Management Plan of Itsukushima as a Special Historic Site and a Special Place of Beauty, set up by the Miyajima Town Government, and the Management Plan of the Setonaikai National Park, including the nominated



Rowing boat during the Kangen-sai Festival, the largest annual festival observed at Itsukushima Shrine and one of Japan's three major boat rituals (Credit: Keren Su/China Span / Alamy Stock Photo)

area, set up by the Environment Agency. Therefore with continued proactive management, and especially giving due consideration to the management of tourism, the unique combination of cultural and natural heritage at Itsukushima should be assured.

Lessons learned

Japanese spiritual life is deeply rooted in Shintoism which centres on polytheistic nature worship, the origin of which goes back to primitive times. The combination of built and natural elements underpins the unique value of the Itsukushima Shinto Shrine. The management and protection of this spiritual, cultural and natural site provides some important lessons for other sites, including:

- The value of the island is an expression of the strong linkages between natural and built elements. By explicitly recognising these links and safeguarding them, legal instruments and proactive management are securing the site for future generations.
- Establishing a buffer zone in order to protect the wider environment and to secure essential aesthetic and wider cultural aspects of the landscape is vital to the long-term conservation of both the World Heritage property and the Ramsar Site.
- The establishment and implementation of a combination of laws to protect the heritage value across the island, including forest protection, city development and cultural aspects, provides useful legal backing for the maintenance of the Outstanding Universal Value and the ecological character of the wetlands.
- The management of tourists and limiting access, both in terms of physical access to areas and in terms of overall numbers, will be crucial to ensure that the cultural value is secured whilst also supporting the conservation of the wider natural heritage.



Lessons learned

Dual designation as a World Heritage property and a Ramsar Site can deliver benefits and help to address management challenges. The case studies have demonstrated some of the challenges these areas face, and illustrated a variety of solutions and sustainable approaches for protecting cultural values, practices and traditions. Ultimately, the outcome that is being sought through both designating and reporting instruments is improved conservation outcomes and the wise use of wetlands which protects cultural heritage.

Whilst it is noted that the two designating instruments have different objectives, utilise different criteria for designation and employ distinct *modi operandi*, there is an inherent complementarity and potential for lessons to be learned and experiences to be shared among site managers and policy makers. The dual forms of international recognition can be both mutually supporting and increase the resilience of areas to a range of external pressures and threats. Lessons learned, which can benefit both site managers and broader policy-makers are presented below in three categories: conserving cultural values and practices; encouraging participatory approaches; and synergies between the Conventions. Many of these lessons learned reflect previous recommendations developed for MIDAs (Schaaf & Clamote Rodrigues, 2016).

Conserving cultural values and practices

Develop and implement management plans

The development, implementation and updating of a site management plan are essential. A good management plan needs to reflect and harmonise the differing requirements of the two designations into a single, coherent plan in order to secure the conservation of the site. This is vital in order to moderate any potential tensions between maintaining the cultural heritage of a site and maintaining natural significance.

Adopt appropriate legal instruments

Legal instruments, where properly enforced, play a vital role in ensuring that the cultural heritage of a site is genuinely recognised and that, where necessary, a rights-based approach to management of natural resources can be secured in order to protect traditional practices, knowledge and spiritual connections. Similarly, the appropriate legal instruments, or combinations thereof, can be applied to maintain the ecological character of a site and to secure its heritage for future generations.

Ensure livelihoods are protected

Sound management and wise use should seek both to protect traditional values and practices and to develop opportunities to generate improved prosperity and livelihoods of local communities, supported by good information exchange and knowledge sharing. With due consideration and planning it can be possible to protect cultural traditions, improve human well-being and protect the biodiversity of an area.

Promote sustainable tourism

The cultural value of a site can be both a positive tourism opportunity and a management challenge. Sustainable, well-managed tourism can make a positive contribution to rural livelihoods, maintain traditional indigenous cultures, benefit national income and underpin the monitoring and management of an area. It is important to ensure that tourism management avoids creating social and cultural shifts in local communities and an abandonment of traditional practices, and to mitigate any negative impacts of tourism through appropriate destination management and controls on visitor numbers and practices.

Encouraging participatory approaches

Integrate indigenous and traditional knowledge within management planning

For a management plan to be successful, indigenous and traditional knowledge should be integrated in order to understand fully the sensitivity of the various ecological and cultural components and processes. This integration within a management plan needs to build on and improve relationships among partners and stakeholders in a respectful, participatory, collaborative and cooperative manner.

Consider the zonation of sites

Within the management planning process it can be important to use participatory approaches in order to consider zonation. Such approaches can assist in optimising the protection of critical natural and human heritage.

Comprehend socio-cultural traditions

To fully comprehend socio-cultural traditions, beliefs and practices requires strong linkages to be established with the local community. Bottom-up as well as top-down approaches to decision-making should be employed to ensure appropriate community and stakeholder participation and involvement. A sustainable future for a site is only possible if all the cultural aspects, including heritage, socio-economics and development, are understood by all stakeholders.

Integrate communities within site management activities

Seek to integrate local communities into site monitoring and surveillance activities in order to deliver more sustainable management outcomes.

Synergies between the Conventions

Seek to achieve mutually supporting outcomes

The two designating processes operate in different ways. Undoubtedly, when considered in a synergistic and integrated manner the processes can be mutually supportive and reinforcing, and improved resilience can be achieved through complementarities in the designation and reporting criteria.

Learn from reporting mechanisms

When appropriate, the States Parties to the World Heritage Convention have to prepare state of conservation reports. The reports generated allow the World Heritage Committee to assess the conditions at the properties, enact decisions and to advise on the necessity of adopting specific measures to resolve problems. There is no comparable systematic reporting mechanism under the Ramsar Convention.

Update Ramsar Information Sheets

Contracting Parties to the Ramsar Convention have been urged by the Conference of Parties to update the information on individual Ramsar Sites at a frequency of not more than every six years. Despite not being formally recognised in the designation criteria, cultural values are considered part of the ecological character of a Ramsar Site. Updates to the Ramsar Information Sheet should consider the Outstanding Universal Value of a corresponding World Heritage property and ensure that these elements are reflected in the description of the ecological character of the Site.

Maintain the relationships that underpin the Outstanding Universal Value and the ecological character

Often the Outstanding Universal Value of the World Heritage property and the ecological character of the Ramsar wetland rely on the inter-relationships between the human and natural elements. This can be manifest in a symbiotic relationship between the long-term protection of the natural heritage and the safeguarding of the future of the traditional management practices. The one cannot thrive without the other.



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