

# French Austral Lands and Seas

## 2025 Conservation Outlook Assessment

### SITE INFORMATION

**Country:** France

**Inscribed in:** 2019

**Criteria:** (vii) (ix) (x)



The French Austral Lands and Seas comprise the largest of the rare emerged landmasses in the southern Indian Ocean: the Crozet Archipelago, the Kerguelen Islands, Saint-Paul and Amsterdam Islands as well as 60 small sub-Antarctic islands. This 'oasis' in the middle of the Southern Ocean covers an area of more than 67 million ha and supports one of the highest concentrations of birds and marine mammals in the world. In particular, it has the largest population of King Penguins and Yellow-nosed albatrosses in the world. The remoteness of these islands from centres of human activity makes them extremely well-preserved showcases of biological evolution and a unique terrain for scientific research. © UNESCO

### SUMMARY

#### 2025 Conservation Outlook

Finalised on 11 Oct 2025

##### GOOD WITH SOME CONCERNS

This large marine protected area has a good outlook for the future, although with some concerns. Facing very high threats posed principally by climate change, invasive alien species, disease, potentially unsustainable fishing and wildfire, the status of its World Heritage values and attributes could quickly decline. However, the site has strong protection and is being effectively managed by the TAAF (Terres australes et antarctiques françaises), even though a few issues such as governance, some management issues and sustainable use could be improved. Very ambitious projects to continue clearing the site of invasive alien species following on from previous successful projects are being planned and implemented. It is important that these ambitious projects will have similar ambitious and equally important follow-up.

## FULL ASSESSMENT

### Description of values

#### Values

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##### World Heritage values

► **Unique concentrations of seabirds and marine mammals** **Criterion:(vii)**

The French Austral Lands and Seas feature some of the largest concentrations of marine birds and mammals in the sub-Antarctic region, including one of the world's largest colony of King Penguins (*Aptenodytes patagonicus*, LC) on Ratmanoff in Kerguelen Islands (Barbraud et al., 2020) and Indian Yellow-nosed Albatross (*Thalassarche carteri*, EN) on the sheer cliffs of Entrecasteaux on Amsterdam Island. The second largest population of Elephant Seals (*Mirounga leonina*, LC) occurs on Courbet Peninsula in Kerguelen (World Heritage Committee, 2019).

► **Showcase of ecological processes in the Southern Ocean** **Criterion:(ix)**

As one of the largest marine protected areas in the world with large continental shelves and situated at the convergence of three ocean fronts, the site conserves extremely productive areas in the midst of a relatively poor ocean, allowing the development of a rich and diverse food web with a high representation of the biodiversity of the Southern Ocean and the ecological processes that occur in it. It protects all the key areas to support the life cycles of species in the territory, thus ensuring the maintenance of high concentrations of marine birds and mammals (World Heritage Committee, 2019).

► **Exceptional site for bird conservation** **Criterion:(x)**

The site is home to over 50 million birds of up to 47 species. Close to half of the global population of 16 of these species breed on these islands, with 8 endemic taxa and at least 11 globally threatened species. These include 5 species of albatross: Amsterdam Albatross (*Diomedea amsterdamensis*, EN), Indian Yellow-nosed Albatross (*Thalassarche carteri*, EN), Grey-Headed Albatross (*Thalassarche chrysostoma*, EN), Sooty Albatross (*Phoebastria fusca*, EN) and Snowy Albatross (*Diomedea exulans*, VU); 3 species of penguin: Northern Rockhopper Penguin (*Eudyptes moseleyi*, EN), Southern Rockhopper Penguin (*Eudyptes chrysocome*, VU) and Macaroni Penguin (*Eudyptes chrysolophus*, VU); MacGillivray's Prion (*Pachyptila macgillivrayi*, CR); White-chinned Petrel (*Procellaria aequinoctialis*, VU) and Southern Pintail (*Anas eatoni*, VU). 99% of the global population of Kerguelen Tern (*Sterna virgata*, NT) is resident in the site (State Party of France, 2018; World Heritage Committee, 2019, IUCN Red List 2024).

► **Exceptional site for marine mammal conservation** **Criterion:(x)**

Large populations of Pinnipeds, including the second largest colony of Southern Elephant Seals (*Mirounga leonina*, LC) and the third largest colony of Sub-Antarctic Fur Seals (*Arctocephalus tropicalis*, LC) in the world, attest to the abundance of prey in the surrounding waters. An important area for whales and dolphins with 13 species regularly visiting the site and 6 species breeding, these include Killer Whales (*Orcinus orca*, DD) and Commerson's Dolphin (*Cephalorhynchus commersonii kerguelenensis*), an endemic subspecies which occurs around Kerguelen (State Party of France, 2018; World Heritage Committee, 2019).

##### Other important biodiversity values

► **High level of endemism in other species groups**

The site has a high percentage of endemic plants and invertebrates which have adapted to the extreme climatic conditions of the islands, including some species of flies which have evolved to become

wingless. The vast marine zone is also extremely rich with a number of endemic marine species. The very impressive intact sphagnum peatlands on the Amsterdam Island, not occurring on any other southern Indian Ocean island, contain a high number of little-known sphagnum species of which three endemic species have been newly described (State Party of France, 2018).

## Assessment information

### Threats

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#### Current Threats

Very High Threat

Climate change is a very high threat, which may already have affected one of the flagship values of the property, i.e. the largest population of King Penguins on Ile aux Cochons. Invasive alien species continue to pose a high threat, even if the eradication programme on Amsterdam has been very positive (but more time and effort is needed to determine if it has been successful). The appearance of avian flu (in addition to other diseases) is affecting bird populations as well as elephant seals. Recent wildfire on Amsterdam presents another threat to part of the property, although the full extent of damage of the most recent fire still requires full evaluation. Concerns on sustainable fishery management and bycatch remain ongoing although various management measures are being implemented to reduce the negative impact on the OUV.

#### ► Invasive Non-Native/ Alien Species

Very High Threat

*(Predation, competition and erosion caused by alien invasive species)*

Inside site, throughout(>50%)

##### Other invasive species names

**Black Rat (*Rattus rattus*), Norway Rat (*Rattus norvegicus*),  
House Mouse (*Mus musculus*), European Rabbit  
(*Oryctolagus cuniculus*), Domestic Cat (*Felis catus*),  
Reindeer (*Rangifer tarandus*), Dandelion (*Taraxacum  
officinale*), etc.**

Invasive black and Norway rats, mice, rabbits and cats, and to a lesser extent reindeer on parts of Kerguelen, impact biodiversity values. Invasive plants including dandelions and a few grasses have also had a high impact. Some invertebrate introductions have had a major negative impact on endemic invertebrates. Trout on Kerguelen have also been introduced, with unknown impact on the ecosystem. In 2022, there were 68 invasive plant species recorded in Crozet, 63 in Kerguelen and 103 in the islands of St Paul and Amsterdam, and 7 invasive invertebrates in Kerguelen (6 insects and an earth worm) (Evaluation for the IUCN Green List, 2023).

A biosecurity strategy was adopted in 2022 and constitutes a milestone for the implementation of the management plan of the nature reserve and the environmental policy led by the French austral lands and seas authority. Operations to eradicate or control rats, rabbits and cats have been successfully undertaken on a number of islands, with the biggest success being the eradication of black rats and rabbits from Ile Saint-Paul in 1997, although unfortunately eradication of mice was not achieved (Micol & Jouventin, 2022). Cows, sheep and mouflon, introduced to a few islands, have all been removed. From April-September 2024 a very ambitious plan to eradicate Norway rats, cats and mice from Amsterdam was undertaken (TAAF, 2024a).

#### ► Invasive Non-Native/ Alien Species, Pathogens

Very High Threat

*(Diseases affecting seabird colonies and plants, and alien species acting as vectors for these diseases)*

Inside site, widespread(15-50%)

Avian influenza has recently affected populations of marine mammals (mainly Elephant seals) and a number of bird species on Crozet and Kerguelen (TAAF, 2025a). Avian cholera and other diseases appear to be affecting the Indian Yellow-nosed Albatross (*Thalassarche carteri*) (Jaeger et al., 2018) as well as possibly the Amsterdam Albatross (*Diomedea amsterdamensis*); Northern Rockhopper penguin (*Eudyptes moseleyi*) and Sooty Albatross (*Phoebastria fusca*) (Weimerskirch, 2004). In addition,

introduced vertebrates may transport pathogens such as avian cholera, and introduced aphids may transmit phyto virus to endemic plants (State Party of France, 2018). A second national action plan 2018-2027 is being implemented to improve the conservation status of the Amsterdam albatross (Chaigne, 2018). Vaccination strategies and elimination of vectors (introduced vertebrates) as well as strategies to protect humans from avian influenza are being implemented (RNN & TAAF, 2018; TAAF, 2025a).

### ► **Fishing, Harvesting & Controlling Aquatic Species**

**High Threat**

*(Long-line fishing)*

Inside site, localised(<5%)

Outside site

At the time of inscription, seven vessels were authorised to carry out longline fishing in the Kerguelen and Crozet zone and one vessel was authorised to fish in the Saint Paul and Amsterdam zone (State Party of France, 2018; IUCN, 2019). Currently, 8 vessels are authorized for longline fishing in the Kerguelen and Crozet EEZ. A new management plan is to be set up on the next fishing campaign and for 3 years until September 2028 (IUCN consultation, 2025). A limitation of the number of authorized fishing vessels is scheduled, excluding any additional ship to be authorized or even lower this number. In Saint-Paul and Amsterdam, 2 additional smaller vessels have been authorized since the time of inscription, but a management plan is also under revision to better supervise the fishery and set up a better model for economic income and environmental impacts mitigation.

Conservation measures put in place prior to the property's inscription have reduced the very high mortality of seabirds caused by longline fishing in Kerguelen and Crozet (more than 15,000 seabirds from 1996 to 2006, and still 1,236 individuals estimated being killed or wounded in 2007/2008; State Party of France, 2018; IUCN, 2019). Although albatrosses fly beyond the French EEZ (Weimerskirch et al., 2018a), they are unlikely to be killed by the legal fishery, as mainly white-chinned and a few grey petrels are the residual victims of the fishery (109 birds estimated being killed or wounded in 2023/2024; MNHN, 2024).

Although the level of fish bycatch in commercial fishing activities remains significant, especially for skates and sharks, with a recommendation that areas with high by-catch rates should be avoided (CCAMLR, 2024), new scientific insights have been obtained on skate species caught in Kerguelen and Crozet thanks to a dedicated research programme conducted from 2022 to 2025 (Faure, 2023; Faure et al., 2023; Faure et al., 2024; Faure et al., 2025). The results have improved understanding of the impacts of the fishery on the 3 different species of rays populations, and helped to develop management measures (e.g. move-on rules, condition assessment and best-practice handling by fishermen on-board fishing vessels). New management measures, including incentives on interannual individual fishing quotas, are envisaged to mitigate catches of lantern sharks (*Etmopterus* sp.) during the next few years.

Pressures on deep-sea benthic habitats are also difficult to quantify (upcoming scientific publications from the MNHN will provide better insights on historical impacts, evaluated to be low on VME communities; MNHN, comm.pers.), and there are still issues with depredation behaviour by killer whales and sperm whales (Tixier et al., 2016; Tixier et al., 2020). The next management plan aims to encourage fishing companies to collaborate on mutual projects to cope with this problem.

At the same time, illegal fishing appears to be under control (CCAMLR, 2024).

### ► **Recreational Activities, Other Human Disturbances**

**Very Low Threat**

*(Risk of pollution or disturbance)*

Inside site, localised(<5%)

With only three small bases on each main island, the impact of human activity on the site (with an average of some 340 people visiting/year for logistic support, scientific studies and national reserve operations, including around 170 residents at the 3 bases for at least part of the year) is minimal but not inexistent. The threat of an oil spill when transporting heating oil to each base, and the risk of fire (see below) are probably the greatest risks despite very strict security measures. Very occasional ships passing through the property (mainly the Marion Dufresne that visits the islands four times/year, and passing warships and fishery vessels) could have a catastrophic accident causing pollution, although this is unlikely. Keeping human disturbance from the inhabited bases to a minimum and managing waste and light pollution, as well as a programme to rehabilitate the old bases to make them more environmentally friendly, is in place. The very rare tourism - authorization can be requested by occasional sailors - is

carefully controlled and is not an issue (State Party of France, 2018; IUCN, 2019).

► **Fire & Fire Management**

**High Threat**

(Wildfires)

Inside site, scattered(5-15%)

Although the State Party periodic report (2023) states that "the increase in the frequency and intensity of droughts is likely to increase the risk of natural fires. None, however, have been recorded in recent years", this report omitted mention of the fire on the cliffs of Entrecasteaux from February-March 2021 (TAAF, 2021), which affected the entire colony of Yellow-nosed Albatross *Thalassarche carteri* (EN), representing some 65% of the global population and already under pressure from avian cholera (Jaeger et al., 2018). On 13 January, 2025 another fire destroyed a large area (as of February 2025, 50% of the island), burning sphagnum bog and populations of the only tree on the island *Phylica arborea*. The fire reached the base which had to be evacuated, and essential electrical, water and communication equipment as well as the nursery propagating *Phylica arborea* for reintroduction was destroyed (TAAFB, 2025). The impact of the fire on fur seals during this period cannot be ascertained yet, however, the French southern and Antarctic lands authority carried out two technical missions in February and in April 2025 to assess the origin of the fire (still unknown) and the environmental impact of the fire on biodiversity in relations with the scientific partners (IUCN consultation, 2025).

► **Fishing, Harvesting & Controlling Aquatic Species**

**High Threat**

(Patagonian toothfish (and lobster) fisheries)

Inside site, extent of threat not known

**Other targeted species names**

Outside site

**Patagonian Toothfish (*Dissostichus eleginoides*), Lobster (*Jasus polensis*)**

Patagonian toothfish (*Dissostichus eleginoides*) supports valuable fisheries across the Southern Ocean under the management of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Revenue from the highly lucrative Patagonian Toothfish catch is a source of revenue for the TAAF. This includes within the property and the surrounding French Exclusive Economic Zone (EEZ). A juridical exception (la "Déclaration du Président") allows the TAAF to set-up their own regulations within the EEZ although most of the CCAMLR management principles and rules are applied, in particular related to fisheries management (French scientists from the MNHN, who assess TAAF toothfish fisheries, take part in all CCAMLR scientific meetings and working groups). Nevertheless, some rules are specific to the TAAF, like the HCR (Harvest Control Rule) objective of maintaining 60% of the toothfish spawning biomass in 35 years, which is more ambitious than the lower objective of 50% defined by the CCAMLR.

Total Allowable Catches (TAC) are set annually by the TAAF receiving substantiated recommendations from the National Natural History Museum (MNHN) in Paris, who analyse detailed data collected from the fishery (especially thanks to systematic fisheries controllers on-board each fishing vessel) and process the modelling (according to a more prudent GSY model, IUCN consultation 2025) and stock assessment of the fishery under complete specifications of the CCAMLR (the MNHN presents scientific articles on these assessments every year at the CCAMLR scientific committee). The TAAF also receive general advisory guidance from an independent Scientific Council composed of scientists.

This management system appeared to be satisfactory at time of inscription (State Party of France, 2018; IUCN, 2019). However, concern over low recruitment of Patagonian Toothfish stocks throughout the Antarctic (Ortscheidt, 2023; CCAMLR, 2024) resulted in an alert from the MNHN in its last recommendations report in 2024. Two scenarios were presented to the TAAF, based on two different hypothesis on the recruitment series used in the stock assessment. Considering the ongoing CCAMLR framework and the remaining uncertainties related to available data, the scenario with the use of historical recruitment series in stock assessment was considered by the TAAF to set up the TAC for the 2024-2025 fishing campaign, leading to a reduction of the Kerguelen TAC of 410 tonnes (-8,17 %), thus equal to 5,540 tonnes (TAAF, 2024). For a more cautious approach, members of the Scientific Council of the reserve asked to reduce total allowable catches (TAC) to a range of 3,500-4,000 tonnes for 2025 (CS, 2024). Following the recommendation of the MNHN, the TAC initially set to 5020 tonnes in 2022 for three fishing campaign has been reduced to 4610 tonnes for the campaign starting in September 2024 (IUCN consultation, 2025). Additionally, the TAAF have set-up several measures to better estimate this crucial

recruitment index (funding and carrying out the 1.3 M€ POKER V scientific campaign in September-October 2024 to study 2-4 years old toothfish nurseries in Kerguelen, and preparing annual similar campaigns and other recruitment assessment methods for the 3 next years) and mitigate the impact of the fishery on the youngest stages of toothfish caught by fishing vessels (thanks to radical technical measures – spatial closures of areas with higher young toothfish biomass -and strong incentives against fishing companies to target younger stages of toothfish, planned to be set-up in the upcoming management plan). The new triennial Patagonian toothfish management plan was adopted in 2025 (2025-2028) and will include specific objectives and means to better evaluate the stocks (e.g. yearly POKER campaign, study of toothfish nurseries).

The Patagonian Toothfish fisheries at Crozet and Kerguelen have received MSC certification in 2013 and 2017 (renewed in 2018 and 2024) (MSC, 2024) however, the MSC also note that seven ships operate the Patagonian Toothfish fishery, when from 2023 there were eight (TAAF, 2022), even if this new ship hasn't led to an increase of the TAC nor to the global fishing effort of the fishery (in number of hooks deployed by campaign) during the 3 last fishing campaigns. On the other hand, the lobster pot fishery at Saint-Paul and Amsterdam received MSC certification in 2020 (MSC, 2020) although there are still issues concerning the determination of the TAC of this fishery, and the number and type of boats allowed (CS, 2024).

► **Changes in Physical & Chemical Regimes, Changes in Temperature Regimes, Changes in Precipitation & Hydrological Regime**

**Very High Threat**

Inside site, throughout(>50%)  
 Outside site

*(Increasing land and ocean temperature, drought and ocean acidity)*

Climate change impacts both marine and terrestrial species. Temperature variation may impact breeding success of birds and marine mammals (i.e. need to go further for feeding), and is one hypothesis for the decline of the King Penguin population on Ile aux Cochons (Weimerskirch et al. 2018b; Kintisch, 2020), as well as the Northern Rockhopper Penguin on Amsterdam (RZSS, 2017). Change in ocean acidity will also impact marine life, and rising ocean surface temperatures could reduce the upwelling of nutrients around the islands that are essential to food chains (including the amount and distribution of prey species which could cause rapid changes in their population (e.g. Cherel et al., 2018), Changes in temperature and humidity may favour introduced species over native (State Party of France, 2018; IUCN, 2019).

**Potential Threats**

**Low Threat**

Tourism is not a threat to the property although could be if numbers were to increase (for which no plans currently exist). Important management effort is being put into biosecurity to ensure that new introductions of invasive species do not occur, although new invasives, as well as new disease, will always pose a threat to the natural values of the property.

► **Recreational Activities**

**Very Low Threat**

*(Tourism)*

Inside site, extent of threat not known

No more tourists are allowed to embark on the Marion Dufresne since 2020. Visits to the islands are rare, very strictly controlled and need an administrative authorization (less than one authorisation request per year) (IUCN consultation, 2025). There are no plans to re-establish tourism to the islands, given how extremely vulnerable the ecosystems are (State Party of France, 2018).

► **Invasive Non-Native/ Alien Species, Pathogens**

**Low Threat**

*(Introduction or re-introduction of alien invasive species)*

Inside site, extent of threat not known

The risk of new introductions, or even re-introductions of alien species which have been eradicated, is always possible even with the great management effort being put into biosecurity to ensure that new introductions do not occur. However, even the best measures may not be 100% effective as long as there is human presence. On a positive side, some islands are very strictly off-limits to any human visitation, scientific or otherwise (State Party of France, 2018).

## Overall assessment of threats

High Threat

The overall level of threat must be considered high at present, with climate change probably posing one of the most intractable problems. The appearance of avian flu (in addition to other diseases) is affecting bird populations as well as Elephant Seals and collaborative management by the TAAF together with the IPEV and the scientific laboratories is ongoing including strict sanitary measures to protect human population and animal species from any virus spread, and the development of new scientific programmes to study avian influenza. Management programmes related to the eradication, control and prevention of alien invasive species should help reduce this threat, provided that they are maintained long-term. Concern over unsustainable fisheries including bycatch, and recent wildfires are both major threats to World Heritage values. Fortunately very low human visitation and good management on preventing the introduction of more alien invasive species reduces these potential threats, but this is dependent on current management and policy.

## Protection and management

### Assessing Protection and Management

#### ► Involvement of stakeholders and rightsholders, including indigenous peoples and local communities, in decision-making processes

Mostly Effective

The islands are uninhabited and State-owned. Temporary residents include scientists, TAAF managers, technical staff and the military (around 170 pers/year), all exercising a specific mission on the islands. The different communities need to adjust to each other's needs and objectives, especially regarding logistics, and are presided over by the District Officer (State Party of France, 2018).

#### ► Legal framework

Highly Effective

The French austral lands and seas were designated as a national nature reserve in 2006 and enlarged in 2016 to cover almost 673 000 km<sup>2</sup>. The national nature reserve was extended to the totality of the French EEZ in 2022, and covers now 1 662 000 km<sup>2</sup> (7 700 km<sup>2</sup> of which constitute the terrestrial part). The entire site is legally well-protected, starting with the legal decree creating the national nature reserve in 2006, its second extension in 2016 and a final one in 2022. Zoning is excellent as the islands and their entire EEZ are enacted as national natural reserve with clear designation of a third of the property designated under integral protection (IUCN categories Ia and Ib) and a strong legislation on activities of the remaining areas of the EEZ (State Party of France, 2018; IUCN, 2019).

#### ► Governance arrangements

Some Concern

Governance is outlined in the Management Plan, with a well-planned management system advised by two authorities (State Party of France, 2018, IUCN, 2019): (1) a consultative committee, composed of 16 members: representatives of civil and military authorities, scientists, environmental organizations, representatives from the fishing industry and the Préfet of la Réunion as the French Indian Ocean regional maritime authority. This committee advises on the functioning, management and application of measures laid out by the law in order to ensure the conservation, protection and improvement of the reserve, including fishing activity. (2) A scientific committee that advises on fishing quotas, species manipulation, ethical questions and scientific studies. The main stakeholders in the reserve are the scientists and fishing operators. Ultimately the scientific council of the reserve advise on fisheries management plans carried out inside the reserve, while the national museum of natural history (MNHN) makes annual recommendations regarding fishing quotas and management. The fishing quota is decided upon by the TAAF. This can result in some conflict, especially if the TAAF deviates from scientific advice, as the TAAF is not obliged to follow it.

► **Integration into local, regional and national planning systems (including sea/landscape connectivity)**

**Mostly Effective**

The property is so far removed from any other land mass (with the nearest island being Réunion at 2,850 - 3,400km away), there is no sea/landscape connectivity. The site is part of the national French network of protected areas and well-integrated in the national planning system, even if just 15% of its funding comes from the central Government. The area covered by the national reserve allows France to meet its targets set by the French national strategy for protected areas, that are to classify 30% of the national natural territory as protected areas, and participating to the 10% of which are highly protected. Furthermore, the fisheries rules are directly linked or need to be compatible with binding measures of the regional fisheries management organisations for conservation and sustainable management for highly migratory or straddling fishes (Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Southern Indian Ocean Fisheries Agreement (SIOFA)). For regional and national planning monitoring systems of the area, the Préfet of Réunion is a member of the first consultative committee.

► **Boundaries**

**Highly Effective**

The boundaries of this largest ever marine reserve inscribed for World Heritage are effective, and the management of the surrounding EEZ, where reserve regulation is applied as a defacto buffer zone enhances the site's protection.

► **Overlapping international designations**

**Highly Effective**

The property adheres to all international conventions supporting protection of its biodiversity: CITES (Convention on International Trade in Endangered Species of Flora and Fauna), CMS (Convention on Migratory Species), CCAMLR (Convention on the Conservation of Antarctic Marine Living Resources), ACP (Agreement on the Conservation of Albatrosses and Petrels), IWC (International Whaling Commission) and Ramsar (of which the original nature reserve designated in 2006 is a Ramsar site from 2008) (State Party of France, 2018; IUCN, 2019). Both Ramsar site and World Heritage site are managed under the same management authority (State Party of France, 2024)

► **Implementation of World Heritage Committee decisions and recommendations**

**Highly Effective**

In 2019, the World Heritage Committee recommended to maintain strict monitoring and control over tourism, invasive alien species and continued monitoring of fishing activities (Decision 43 COM 8B.6). All this is addressed in the 2018-2027 Management Plan (State Party of France, 2024).

► **Climate action**

**Mostly Effective**

This is addressed in the Management Plan (RRN & TAAF, 2018). Efforts to decarbonise infrastructure (solar panels, wind generators) are in progress (State Party of France, 2024). The integration of these new infrastructures into the landscape must be carefully monitored, particularly following the fire in Amsterdam and the forthcoming reconstruction project.

► **Management plan and overall management system**

**Mostly Effective**

According to the decree establishing the RNN (2006-1211), management of the RNN is entrusted to the Préfet, the Senior Administrator of the TAAF. The Prefect is supported by the Direction de l'Environnement, which is structured around three complementary departments (knowledge, conservation and support for public policies). Two heads of department also act as deputies to the director and act as interim directors when necessary. The environmental coordination unit and all the teams in the department play an active role in managing the site.

A second management plan (RNN & TAAF, 2018) was approved after public consultation for 2018-2027 (which followed the first produced in 2011), providing a roadmap for the entire territory of Kerguelen, Crozet and Saint-Paul et Amsterdam Islands and its surrounding EEZ. The long-term objectives as well as operational objectives and planned activities are detailed and sound (State Party of France, 2018; IUCN, 2019). Specific Action Plans for targeted species (Chaigne, 2018; RZSS et al., 2018) also exist. In

addition, the Préfet adopts a number of rules, notably on fishing, anchorage and tourism (State Party of France, 2024). The implementation of the management system relies on the commitment of the Préfet who has ultimate authority on management in the reserve, guided by advisory councils (State Party of France, 2024) which the Préfet is not obliged to follow.

► **Law enforcement**

**Highly Effective**

One district chief officer on each island group (Crozet archipelago, islands of Kerguelen, St Paul & Amsterdam islands) is tasked with law enforcement. Every fishing boat has an independent observer that monitors the catch. Patrols to detect illegal fishing are undertaken by the national navy which patrols the EEZ using two frigates and helicopter, a patrol ship operated by TAAF and two other ships supplying the French Antarctic base, make an average of 235 patrol days in the region. A bilateral agreement with Australia using satellite technology to identify illegal fishing is effective and another agreement with South Africa to include joint enforcement was signed in 2016. A decline in the seizure of around 20 illegal fishing boats in the 1990's- to early 2000's, to the last seizure being made in 2013 around Crozet Island shows that this is effective (State Party of France, 2018; IUCN, 2019).

► **Sustainable finance**

**Mostly Effective**

Financial resources are acceptable, but a strategy to raise more funds through sponsorship is underway (State Party of France, 2024). In 2023 and 2025 the entire budget was around 32,4€ and 36,32€ (TAAF 2023, 2024c). The budget dedicated to the reserve and the UNESCO site management mainly comes from national fundings (French Ministry of the Environment, French office for biodiversity, annual national calls for projects) and European fundings (ex : RECI and MARIO programmes). Indeed, the TAAF has also received funds from the European Commission (tapping into funds reserved for developing overseas territories, not available to mainland Europe). This was very successful for funding the ambitious eradication programme on Amsterdam, but unfortunately no further funding proposal was prepared to continue this programme (IUCN Consultation, 2025), which is essential as it takes many years of monitoring and additional work if necessary to ensure a successful result. Since COVID-19 some of the dynamics have changed. Fish stocks bring in additional income for the general budget of the TAAF. While this income is primary used for the sustainable management of fisheries, considering the declining stock of Patagonian Toothfish this may be of some concern.

► **Staff capacity, training and development**

**Mostly Effective**

The reserve appears therefore to be well-staffed and equipped. At time of inscription, TAAF personnel numbered (in equivalent full-time positions) 75 staff for the headquarters in La Réunion and an antenna office in Paris, including 17 military personnel, which assure the management and authority (finances and logistics). In the reserve itself, 89 TAAF staff are deployed of which 11 are based on the fishing boats to control the fisheries. In addition, in 2022 there were about 35 to 40 staff employed by the nature reserve (23 in 2017) with at least a BAC+5 in ecology or biology, and a few have a doctorate (State Party of France, 2024). Staff numbers fluctuated in 2023 and 2024 with 45 and 41 staff at headquarters and 133 and 88 in the reserve in 2023 and 2024 respectively (TAAF 2023, 2024c).

While some staff are only employed for one year while out on the islands and there doesn't seem to be further opportunities for them, there is a motivated and professional core group that periodically go out to the islands to manage and develop capacity. Each person spending a year out in the islands has one month overlap with the previous job holder to be trained, meaning that they spend 13 months on one of the most remote places on earth (State Party of France, 2018; IUCN, 2019). There has been turnover with the Director of the reserve, with two Directors and deputies leaving since inscription. The appointment of a new Director in April 2025 has brought renewed stability to the management team (IUCN consultation, 2025).

► **Education and interpretation programmes**

**Highly Effective**

Since most people will never visit the property, education and interpretation is done "ex situ" via the press and media, mostly showing the inaccessible character of the islands, the beauty of its landscape and its remarkable biodiversity. Linking to national events like the "Fête de la nature", brochures presenting the reserve, biosecurity, a summary of the management plan, and annual activities have

been published. Reserve staff regularly participate, both in Réunion and in mainland France, in public events (festivals, expositions) showing the need to conserve the southern territories and to present current activities. Journalists have been invited for a rotation on the Marion Dufresne II and two videos about the reserve have been made, with new documentaries including the marine values of the reserve carried out in the framework of the enhancement of the inscription on the World Heritage List (State Party of France, 2018). The website <https://reserve-australes.taaf.fr/> is very effective in transmitting information.

► **Tourism and visitation management**

**Highly Effective**

Until 2020, c. 50 tourists/year visited the property and visits to the islands were few and strictly controlled, with a guide to sensitise the visitors and ensure that they follow the rules. Since 2020, no tourists visited the island due to Covid-19 (State Party of France, 2024). It is still possible for tourists, with their own vessels, to ask for an administrative authorization to moor on the waters and to disembark on land, although this is very rare (about one demand a year). It is very unlikely that a commercial operator would be interested in bringing people to the islands as the islands are too remote (many days of travel in a rough sea with nothing in sight), nor would the management plan allow this (State Party of France, 2018; IUCN, 2019).

► **Sustainable use**

**Some Concern**

Two highly valuable marine resources occur within and around the property: the Patagonian Toothfish (*Dissostichus eleginoides*) at Crozet and Kerguelen, and Lobster (*Jasus polensis*) and miscellaneous fish species at Amsterdam and St Paul. The commercial fisheries operating in the EEZ, which is the marine part of the nature reserve, are strictly monitored (TAAF operator on board ships, surveillance by the French Navy, etc.). Generally, unsustainable fisheries and bycatch remain a high threat to the OUV and require careful management. Total Allowable Catches (TAC) are set annually by the TAAF receiving substantiated recommendations from the National Natural History Museum (MNHN) in Paris, who analyse detailed data collected from the fishery (especially thanks to systematic fisheries controllers on-board each fishing vessel) and process the modelling and stock assessment of the fishery under complete specifications of the CCAMLR (the MNHN presents scientific articles on these assessments every year at the CCAMLR scientific committee). The TAAF also receive general advisory guidance from an independent Scientific Council composed of scientists.

This management system appeared to be satisfactory at time of inscription (State Party of France, 2018; IUCN, 2019). However, concern over low recruitment of Patagonian Toothfish stocks throughout the Antarctic (Ortscheidt, 2023; CCAMLR, 2024) resulted in an alert from the MNHN in its last recommendations report in 2024. Two scenarios were presented to the TAAF, based on two different hypothesis on the recruitment series used in the stock assessment. Considering the ongoing CCAMLR framework and the remaining uncertainties related to available data, the scenario with the use of historical recruitment series in stock assessment was considered by the TAAF to set up the TAC for the 2024-2025 fishing campaign. For a more cautious approach, members of the Scientific Council of the reserve asked to reduce total allowable catches (TAC) to a range of 3,500-4,000 tonnes for 2025 (CS, 2024). The opinion of the scientific council was not forwarded by the TAAF. However the TAAF have set-up several measures to better estimate this crucial recruitment index (funding and carrying out the 1.3 M€ POKER V scientific campaign in September-October 2024 to study 2-4 years old toothfish nurseries in Kerguelen, and preparing annual similar campaigns and other recruitment assessment methods for the 3 next years) and mitigate the impact of the fishery on the youngest stages of toothfish caught by fishing vessels (thanks to radical technical measures – spatial closures of areas with higher young toothfish biomass -and strong incentives against fishing companies to target younger stages of toothfish, planned to be set-up in the upcoming management plan). The future Patagonian toothfish management plan, which is under assessment, will be adopted in 2025 (2025-2028) and will include specific objectives and means to better evaluate the stocks (e.g. yearly POKER campaign, study of toothfish nurseries).

The absence of a reduction plan for rays and sharks is a notable shortcoming in assessing the quality of the management of the property as is the absence of an assessment of the dynamics (biomass assessment) of fish caught in the Saint Paul and Amsterdam area.

## ► **Monitoring**

**Mostly Effective**

The first Management Plan had clear indicators for monitoring progress, that have been further refined in the second Management Plan and include indicators for management and conservation (including indicators on the biodiversity values presented for World Heritage inscription). These include demographic studies on birds, pinnipeds, and alien species with clear timelines. There are also long-term floristic studies (particularly after eradication of one or more invasive species), and monitoring of marine environments, in close conjunction with the many scientists visiting the islands. The Scientific Committee judged about 90 actions presented in the first Management Plan as being achieved (15%), partially achieved (72%) or not achieved (13%) and a series of measurable actions has been prepared in the second Management Plan 2018-2027 (State Party of France, 2018). The evaluation of this second management plan will begin in 2026.

## ► **Research**

**Highly Effective**

The site has a very strong focus on scientific research, with about 200 scientists/year undertaking research in about 60 different programmes examining all aspects of its terrestrial and marine values, in particular long-term studies on bird and marine mammal populations, and studying the effects of global change. With collaboration between the Museum national d'histoire naturelle (MNHN), the Centre national de recherche scientifique (CNRS) and the Institut polaire français Paul-Emile Victor (IPEV) as well as many universities, a large number of publications on all aspects of subantarctic zone have been published. The geographic, geological, oceanographic and ecological situation of the area has made it a unique site to study species evolution on islands and the impact of global change on ecosystems. Scientific research is carefully regulated by a Scientific Committee of the reserve as well as requiring approval from the National Committee for the Protection of Nature (CNP). This scientific research is used to inform management decisions (State Party of France, 2018).

## ► **Effectiveness of management system and governance in addressing threats outside the site**

**Some Concern**

The Management Plan addresses threats outside the site, although tensions in fisheries management—such as balancing the long-term sustainability of fish stocks with present-day fishing interests—have been noted (CP, 2024). However, it is important to highlight that striving for a balance between ecosystem conservation and sustainable economic development remains central to the management approach.

## ► **Effectiveness of management system and governance in addressing threats inside the site**

**Mostly Effective**

The site is effectively managed by the TAAF, responsible for all aspects outlined in the management plan. While the fires on Amsterdam of 2021 and 2025 (potentially human-caused) cannot be blamed on poor management, they dealt a great blow to the effective management of the site with the total evacuation of all staff from Amsterdam. The TAAF ensures the management and authority (finances and logistics) of the reserve, including staff based on the fishery vessels to control fishing activities. The National Nature Reserve has its own technical staff, specialized in botany, biology (birds, marine mammals, invasive species) who are in charge of implementing the management plan. A five-year programme funded by the EU and France strengthened invasive alien species management and improving biosecurity in all activities. There is some concern about this programme continuing, as further funding has not been applied for (IUCN Consultation, 2025). Although recommendations of the scientific council of the reserve for fisheries management plans and the national museum of natural history regarding fishing quotas and management are systematically taken into consideration by the local authority, the most recent advice to further reduce quotas was not implemented. The site was first inscribed in 2018 on the IUCN Green List for Protected and Conserved Areas. Its status was renewed in 2024 for another 5 years.

## **Overall assessment of protection and management**

**Mostly Effective**

Overall assessment of protection and management of the site is good with some concerns. The strong legal protection framework and excellent management plan for a ten-year period from 2018-2027 is positive, and the appointment of a new Director in April 2025, after a turnover of senior staff (including two Directors of the Reserves since inscription) has brought renewed stability to the management team. Some concerns exist over governance and the role of the two advisory committees. The budget dedicated to the reserve and the site management comes mainly from national funds and European funds, while the management authority has also launched a process of revenue diversification to secure its actions. Very ambitious projects to continue clearing the property of invasive alien species, in particular the eradication project on Amsterdam, are excellent although eradication programmes require long-term follow-up, and there is some concern over the future funding of this project. While the fires of 2021 and 2025 (which as of February 2025 was still burning through the sphagnum moss on Amsterdam resulting in the total evacuation of all staff on the island) are not a result of poor management, they still dealt a great blow to the overall protection of the property. Scientific missions to understand the decline in some of the biodiversity values, generating recommendations for future management, are underway. Long-term surveillance efforts need to be maintained, in order to guarantee a low risk of IUU fishing, as well as the strict management of the fisheries operating in the EEZ to limit the pressures of the fishing activities on the environment.

► **Good practice examples**

The adoption of a biosecurity strategy constitutes a milestone for the implementation of the management plan of the nature reserve and the environmental policy led by the French austral lands and seas authority.

## State and trend of values

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### Assessing the current state and trend of values

#### World Heritage values

► **Unique concentrations of seabirds and marine mammals**

**Low Concern**  
**Trend:Deteriorating**

The outstanding concentrations of seabirds and marine mammals remain, even with the recently documented declines of the King Penguin population on Ile aux Cochons (Weimerskirch et al., 2018b; Kintisch, 2020) and the Indian Yellow-nosed Albatross on Amsterdam Island (Jaeger et al., 2018), which was also affected by the fire of 2021 (TAAF, 2021). The impacts of the Amsterdam fire of 2025 remains unclear, however it is expected that the impact of the fire on the distribution of birds and marine mammals will remain limited (for example, the fire did not affect the Entrecasteaux cliffs where the Yellow-billed Albatross breeds or the Peatland plateau where the Amsterdam Albatross breeds). The French southern and Antarctic lands authority plans to carry out in 2025 an assessment of the environmental impact of the fire on biodiversity and recognition missions carried out on February and March confirmed that seals are still on site.

The arrival of avian influenza is a serious concern, affecting seabird and Elephant Seal populations (TAAF, 2025a). While the concentrations of these animals remain outstanding, these documented declines, in addition to climate change or unsustainable fishing which could cause rapid changes in the prey base that would affect their population (e.g. Cherel et al., 2018), have raised concern over the future of these populations. It should be noted that historically pinnipeds were virtually exterminated from the islands, so the current large populations since exploitation stopped is very positive. Rebound of previously exploited cetaceans is slower (State Party of France, 2018, Labadie et al., 2018).

► **Showcase of ecological processes in the Southern Ocean**

**Low Concern**  
**Trend: Stable**

The site is very large: the national nature reserve declared in 2006 covers a terrestrial area of about 770,000 ha, plus 1,570,000 ha of maritime territory, with the addition of larger marine areas around the islands in 2016 increasing the size of the reserve to 67,296,900 ha. The remote situation of this protected area, buffered by the prefectural designation of March 2017 providing additional protection to the entire Exclusive Economic Zone (EEZ) of 98,211,900 ha. surrounding the reserves, ensures that the area will likely continue to be a showcase of ecological processes in the Southern Ocean (State Party of France, 2018; IUCN, 2019). However, serious and as yet unmanageable threats such as climate change, invasive alien species and fire could reverse the situation in the future.

► **Exceptional site for bird conservation**

**High Concern**  
**Trend: Deteriorating**

While 11 breeding species of bird occurring in the property are on the IUCN Red List, the area provides for the most part a safe haven for these threatened species with targeted management aimed at securing the populations, in particular the Amsterdam Albatross (EN) with a national Action Plan (Chaigne, 2018). Fortunately the fire of 2025 has not reached the breeding area of this species (IUCN Consultation, 2025). However, the population of Yellow-billed Albatross (EN) has been reduced by disease (Jaeger et al., 2018). While the fire of 2021 effectively destroyed the breeding site, the environment was regenerated the following year and the colony sites were full. The impact of the 2021 fire was therefore extremely low for the population. Populations of various seabird species have also declined due to avian influenza (TAAF, 2024). These issues have raised the level of concern for this value to high. At the same time, management plans and activities aimed at conserving all the bird species and their habitat within the site are in place (RNN & TAAF, 2018).

► **Exceptional site for marine mammal conservation**

**Low Concern**  
**Trend: Data Deficient**

Two of the three breeding species of pinnipeds in the site continue to increase after historically becoming practically extinct from the site due to exploitation in the past (State Party of France, 2018). The impacts of the Amsterdam fire of 2025 remains unclear, however it is expected that the impact of the fire on the distribution of marine mammals will remain limited. The French southern and Antarctic lands authority plans to carry out in 2025 an assessment of the environmental impact of the fire on biodiversity and recognition missions carried out on February and March confirmed that seals are still on site. The discovery that avian influenza is also affecting Elephant Seals on Crozet and Kerguelen (TAAF, 2024) is of concern.

## Summary of the Values

► **Assessment of the current state and trend of World Heritage values**

**Low Concern**  
**Trend: Data Deficient**

Given the recent negative impacts of avian influenza and the large fires on Amsterdam, the current state and trend of World Heritage values range from Deteriorating to Stable to Data Deficient. Documented declines of the King Penguin population on Ile aux Cochons and the Indian Yellow-nosed Albatross on Amsterdam Island are under study and addressed in the Management Plan. The remote situation of this site and its size, buffered by the additional protection of the surrounding Exclusive Economic Zone, indicates that despite these pressures, the property should continue to be a showcase of ecological processes in the Southern Ocean. The three breeding species of pinnipeds do not currently appear to be in danger, following a massive increase of these species after historically becoming nearly extinct due to exploitation in the past.

► **Assessment of the current state and trend of other important biodiversity values**

**Low Concern**  
**Trend: Stable**

Additional important biodiversity values pertaining to plants and invertebrates, both terrestrial and marine, are being intensively studied and in general the conservation trends are for the most part stable or improving (State Party of France, 2018). However, the recent fires on Amsterdam have impacted its spectacular sphagnum bog (TAAF, 2025b). Although the Plateau des Tourbières has not been directly impacted, the dry vegetation at low and medium altitude that was affected by the fire. This is vegetation that is dynamic and resilient (as was observed following the last fires in 1974 and 2021).

## Additional information

### Benefits

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#### Understanding Benefits

##### ► Importance for research, Contribution to education

For decades now the French Subantarctic Islands have served as an important research base for a wide breadth of scientific studies, ranging from a global observatory in measuring air quality, to terrestrial and marine studies of almost every sort of taxon imaginable. A full bibliography of all the studies which have been produced from these islands, many informing management of the site, would be massive, and many young scientists have started their careers after a year in one of the most inhospitable places on earth.

##### ► Fishing areas and conservation of fish stocks

Commercial fishing is a major source of income generation that provides substantial funding for the conservation of the site, as well as being a major employer for fishermen from La Réunion, a French territory.

Over-exploitation is carefully controlled through intensive monitoring and science-based quotas evaluated yearly (State Party of France, 2018).

##### ► Provision of jobs

Employment through working for the TAAF or for the local fisheries.

#### Summary of benefits

While conservation of unique biodiversity for future generations is not listed as a benefit, this should surely be a major benefit, and may be more important in the future than we can imagine today. The site is of great importance for science and educating the next generation of researchers, and its sustainable use fisheries programme provides benefits to companies as well as jobs to fishermen from Réunion which is an important contribution to this island's economy. In addition, management of the reserve, including provisioning the military/scientific bases on the island, provides jobs to a significant number of people.

### Projects

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#### Compilation of active conservation projects

| Nº | Organization | Brief description of Active Projects | Website |
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|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | French austral lands and seas (TAAF - Reserve Naturelle Terres Australes Françaises)                                                                                                                          | A five-year project funded by the EU and French Office of Biodiversity, aimed at managing invasive species from Comores and Tromelin to Amsterdam. The project to eradicate Norway Rat, Domestic Cat and House Mouse from Amsterdam Island was undertaken from April-September 2024, where large amounts of poison covered the island, and results look positive. However, continued work is needed, and there is concern that a follow-up project was not initiated to ensure that all this effort has not gone to waste. | <a href="https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/projet-reci/">https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/projet-reci/</a>                                                                                           |
| 2 | French austral lands and seas (TAAF - Reserve Naturelle Terres Australes Françaises)                                                                                                                          | Since 2010, <i>Phyllica arborea</i> has been the focus of a restoration programme run by the French austral lands and seas authority as part of the management of the French Austral Lands and Seas Nature Reserve. The aim is to plant young individuals in the wild in order to recreate healthy, connected woodlands in the species' original range.                                                                                                                                                                    | <a href="https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/phylica-arborea/">https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/phylica-arborea/</a>                                                                                   |
| 3 | IPEV                                                                                                                                                                                                          | The SALMEVOL program is managed by IPEV is studying the evolutionary ecology of Salmonidae spp., particularly their success on Kerguelen by species introduced 60 years ago. Programme SALMEVOL (IPEV-1041)                                                                                                                                                                                                                                                                                                                | <a href="https://institut-polaire.fr/fr/programmes_soutenus/ecologie-evolutive-de-la-colonisation-des-iles-kerguelen-par-les-salmonides/">https://institut-polaire.fr/fr/programmes_soutenus/ecologie-evolutive-de-la-colonisation-des-iles-kerguelen-par-les-salmonides/</a>                                                                         |
| 4 | Université de Bourgogne Franche-Comté Institut méditerranéen de biodiversité et d'écologie marine et continentale (IMBE) French austral lands and seas (TAAF - Reserve Naturelle Terres Australes Françaises) | This program's objective is to set up a long term monitoring of the coastal benthic ecosystems, temperature and salinity, in order to measure the effects of climate change.                                                                                                                                                                                                                                                                                                                                               | <a href="https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/programme-proteker-suivi-des-habitats-benthiques/">https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/programme-proteker-suivi-des-habitats-benthiques/</a>                 |
| 5 | French austral lands and seas (TAAF - Reserve Naturelle Terres Australes Françaises)                                                                                                                          | Following the first National action Plan for the Amsterdam Albatross (2011-2015), the species reached fifty-one breeding pairs in 2018 for the first time since it was described in 1981. As a result, it was decided in 2018 to implement a second 10-year NPA with 17 actions. The long-term aim of this plan is to improve the conservation status of the Amsterdam albatross by eliminating or reducing the threats to the species' reproduction and survival at both marine and terrestrial levels.                   | <a href="https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/plan-national-dactions-en-faveur-de-lalbatros-damsterdam/">https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/plan-national-dactions-en-faveur-de-lalbatros-damsterdam/</a> |

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| 6 | Centre d'études biologiques de Chizé (CEBC) Institut polaire français Paul-Emile Victor (IPEV) French austral lands and seas (TAAF - Reserve Naturelle Terres Australes Françaises) | For 60 years now, the Ornithoeco program aims to monitor 32 species of birds and marine mammals in order to understand how the climate affects them and what could be to the future effects of climate change. | <a href="https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/ornithoeco-suivi-oiseaux-et-mammiferes-marins/">https://taaf.fr/missions-et-activites/protection-de-lenvironnement/actions-de-terrain-et-programmes-menes/ornithoeco-suivi-oiseaux-et-mammiferes-marins/</a> |
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