

# PAN

PLANO DE AÇÃO NACIONAL PARA  
CONSERVAÇÃO DAS ESPÉCIES AMEAÇADAS



## MIGRATORY SHOREBIRDS (2<sup>nd</sup> 5-year cycle)

EXECUTIVE SUMMARY

PAN  Aves  
Limícolas Migratórias

Shorebirds are species that feed on the small invertebrates found in the silt of wetlands. They are found primarily in intertidal areas such as estuaries, marine beaches, lagoon shores, and coastal lagoons. This group includes plovers, sandpipers, snipe and oystercatchers; many of which are migratory species.

Migrations occur in autumn and spring, when hundreds of thousands of birds move generally from the northern hemisphere to the southern hemisphere to escape winter at their breeding sites and rest at stopover and wintering sites in several countries. In Brazil, shorebirds migrate through coastal and Pantanal areas, which also provide natural resources for several animal groups and ecosystem services that are essential for human well-being.

Wintering, stop-over and staging sites bring together high concentrations of birds. The environmental conditions in these areas are critical for the continuity of their journeys, which can exceed 32,000 km per year. The supply and quality of food available at each site must be high for birds to accumulate enough energy to fly for extended periods; for instance, sandpipers such as the Whimbrel and Hudsonian Godwit can fly for 5 to 11 days without stopping.

In the Americas, shorebirds are among one of the groups of birds that suffered the greatest population decline since 1970. This is due to populations depending on several stopover sites along their route. If just one of these sites becomes unavailable (as a result of environmental changes), the birds may be unable to complete their migration, thus interrupting their life cycle and causing considerable population loss. Furthermore, sites of great importance are located throughout various countries, which have different practices, cultures and policies, making it difficult for effective conservation actions to be

carried out. All these variables increase the impact that these migratory birds suffer annually.

To align policies and actions aimed at the conservation of migratory species with other countries, Brazil signed the Convention on the Conservation of Migratory Species of Wild Animals (CMS). This means that Brazil is committed to protecting species listed as threatened in the Appendix I (conserving and restoring their habitats), as well as participating in informal conservation initiatives for species listed in the Appendix II. Other international shorebird conservation initiatives with which Brazil is involved are the Memorandum of Understanding on the Conservation of Southern South American Migratory Grassland Bird Species and their Habitats, the Arctic Migratory Bird Initiative (AMBI), the Midcontinent Shorebird Conservation Initiative (MSCI) and the Atlantic Flyway Shorebird Initiative (AFSI).

The National Action Plan (NAP) for the Conservation of Migratory Shorebirds aims to “Expand and ensure the conservation of NAP targeted shorebirds and their habitats in Brazil, promoting cooperation between civil society, public authorities and the productive sector”. During the first 5-year-cycle (2012-2018), the network of collaborators and the basic knowledge about the species increased, and a map of strategic areas for shorebird conservation in Brazil was created. Now in its second cycle (2019-2024), the NAP is coordinated by the National Center for Wild Bird Research and Conservation (CEMAVE/ICMBio) and a technical advisory group comprised of specialists from federal, state, academic and non-governmental organizations located throughout all regions of the country, as well as several collaborators working on its implementation.



Jorge Dantas

## Target Species

The NAP for Migratory Shorebirds includes 27 shorebird species, out of which five species are threatened at a national level (MMA 2022), three are included in Appendix I and 25 in Appendix II of the CMS, three are the focus of AMBI, eight of MSCI, and 11 of AFSI.

### Red Knot (*Calidris canutus*) Vulnerable (VU)

**Length:** 23 to 25 cm

**Characteristics:** In Brazil it is greyish in colour; the red of the crop is visible in the breeding plumage, and red patches can also be seen on the breast during the migratory season in Brazil.

**Global distribution:** Breeds in the extreme north of North America and Asia and migrates south to southern USA, the Caribbean, South America, and Europe, Africa and Australia, depending on the subspecies.

**National distribution:** Only the subspecies *Calidris canutus rufa* is found in Brazil. It can be found along most of the coastline. The highest concentrations are found in Pará (Salgado and Bragança), Maranhão (APA Reentrâncias Maranhenses), where they spend the austral summer, and in the Parque Nacional da Lagoa do Peixe (Rio Grande do Sul), which is the main stop-over area for the population migrating south to Tierra del Fuego. Other areas of strategic importance for migration are located along the northeast and southeast coasts.

**Natural history:** Coastal and gregarious species, found on sandy or muddy beaches in groups of between 300 and 10,000 individuals. They migrate long distances, with few stopover points. Traditional wintering sites host large flocks, but are thousands of kilometers apart, such as Bahía Lomas (Chile), San Antonio (Argentina), Lagoa do Peixe and Maranhão (Brazil) and Delaware Bay (USA). They mature between 2 and 3 years old, with a longevity of 16 years. Travel between the south coast of Brazil and west-central USA can be almost direct, taking around 6 days and covering over 8,000 km.

**Population and threat observations:** Population records, with over 2,000 individuals, have been recorded in the Brazilian states of Maranhão and Rio Grande do Sul. The population of the subspecies *rufa* declined by 80% between 1985 and 2011 in Tierra del Fuego and individuals wintering on the northeast coast of Brazil declined by 55% between 2005 and 2011, making the species vulnerable at a country level. The subspecies *C. c. rufa*, which is the only one found in Brazil, is also listed in Appendix I of the CMS.



Ciro Albano

### Semipalmated Sandpiper (*Calidris pusilla*) Endangered (EN)

**Length:** 13 to 15 cm

**Characteristics:** Small size, with a brownish grey back. Black bill and feet. Females slightly larger.

**World distribution:** Breeds in Siberia (Russia), Alaska (USA) and Canada. Occurs along the Pacific coast from Mexico to Peru and along the Atlantic coast from Yucatan to Argentina. Abundant in Central America and northern South America.

**National Distribution:** Occurs along the entire coastline, with

90% of the population in the north and northeast coast, mainly between the Parque Nacional do Cabo Orange (Amapá) and the APA Delta do Parnaíba (Maranhão/Piauí).

**Natural history:** Breeds between June and August, migrating to Central and South America afterwards. Forages along the muddy banks of estuaries and mangroves, where they feed on invertebrates. To reach Brazil, they use the Atlantic flyway in a north-south and south-north direction. They fly non-stop for up to 4,000 km and can form flocks of up to 350,000 individuals.

**Population and threat observations:** The global population has declined by 80% in 25 years. The main causes were (a) the reduction of horseshoe crab (*Limulus polyphemus*) eggs, which comprises the species' main food source during migration in the USA, and (b) hunting, mainly in Suriname and French Guiana. In Brazil, habitat loss and degradation are the major threats. The species is listed in Appendix I of the CMS.



Ciro Albano

**Buff-breasted Sandpiper (*Calidris subruficollis*)**  
**Vulnerable (VU)**

**Length:** 18 to 20 cm

**Characteristics:** Small and slender, cinnamon brown colour with yellow legs.

**Global distribution:** Breeds in the Arctic regions of Russia, Alaska and Canada, and migrates to Argentina, Uruguay and southern Brazil.

**National distribution:** High concentrations are observed in Rio Grande do Sul between late September and early April, mainly at Ilha da Torotama (900 individuals), Parque Nacional da Lagoa do Peixe (2000 individuals) and the Taim region.

**Natural history:** After breeding, adults migrate along the central flyway of North and South America to the coastal grasslands of Rio Grande do Sul, Uruguay and Argentina, where they remain for 6-7 months. Juveniles migrate later and use the Atlantic flyway to South America. On the South American continent, they use open, seasonally flooded fields with short grass, but can also be found foraging in agricultural areas. In the pampas they benefit from livestock grazing, which helps to keep the grass short.

**Population and threat observations:** World population estimated at 56,000 individuals. The main threats to the species are habitat degradation (throughout their entire occupation in various areas), mainly due to oil exploration, mining, wind energy (wind turbines) and the conversion of native pastures into monocultures. As a result of their use of arable areas, they are also exposed to contamination by pesticides. This species is listed in Appendix I of the CMS.



Julio C. Silveira

**Short-billed Dowitcher (*Limnodromus griseus*)**  
**Endangered (EN)**

**Length:** 25 to 29 cm

**Characteristics:** Medium sized with a long bill. Brownish-grey colouration, lighter on the belly which turns reddish in breeding plumage. The white back is visible in flight.

**Global distribution:** Breeds in the USA (including Alaska) and Canada; migrates to southern USA, Central America and coastal South America.

**National distribution:** Common along the north and northeast coast, especially in the states of Amapá, Pará and Maranhão.

In the Complexo Litorâneo da Bacia Potiguar (Rio Grande do Norte) there are groups of more than a thousand individuals and more than 8,000 in the Golfão Maranhense.

**Natural history:** In Brazil, they occupy coastal and inland wetlands during migration and prefers areas of muddy substrate bordered by mangroves and sandy beaches. Large flocks feed day and night along the Amazon coast. They fly uninterrupted as they migrate south from North America and across the Atlantic to Suriname and Brazil. Females leave the breeding sites in July, before males and juveniles.

**Population and threat observations:** Estimated population of over 100,000 individuals. The population of *L. griseus griseus*, the only subspecies that winters in Brazil, declined by 86% on the northeast coast of the country in 25 years. This population represents more than 90% of the Brazilian population. The main threats are habitat loss and degradation, particularly of mangroves, due to port, mining and shrimp farming activities, among others.



Antônio Emanuel B.A. de Sousa

**Wilson's Plover (*Charadrius wilsonia*)**  
**Vulnerable (VU)**

**Length:** 16.5 to 20 cm

**Characteristics:** Small size, brownish on the back with a full white neck in adult plumage. Robust black bill.

**World distribution:** East and west coasts of the USA, along Central America and east and west of South America, where it winters.

**National distribution:** Records from Amapá, Pará, Maranhão, Piauí, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe and Bahia. Subspecies *Charadrius wilsonia brasiliensis* breeds in Brazil.



Jorge Dantas

**Natural history:** Strictly coastal, closely associated with sandy beach, island and coastal lagoon environments. Outside the breeding season, it also occupies estuaries and freshwater bodies close to the coast. Feeds day and night on molluscs, crustaceans, annelids and insects at or just above the tide line. *Charadrius wilsonia brasiliensis* nests on dunes with sparse vegetation, from the beaches of Amapá to the north coast of Bahia.

**Population and threat observations:** Rare and a resident species; the estimated population in Brazil does not exceed 1,000 mature individuals. It has a very low number of records in shorebird censuses for any location, rarely exceeding 20 individuals. Predation of eggs and chicks by dogs on beaches is one of the main impacts on the species, in addition to unregulated tourism, vehicles on beaches, recreational activities and rubbish, which contribute to the abandonment and destruction of nests.

Common name	Species	Resident or Migratory	ERC* (MMA, 2022)	International Agreements & Initiatives**
American Golden Plover	<i>Pluvialis dominica</i>	Migratory	DD	CMS II; MSCI; AFSI
Black-bellied Plover	<i>Pluvialis squatarola</i>	Migratory	LC	CMS II
Semipalmated Plover	<i>Charadrius semipalmatus</i>	Migratory	LC	CMS II
Wilson's Plover	<i>Charadrius wilsonia</i>	Resident	VU	AFSI
Two-banded Plover	<i>Charadrius falklandicus</i>	Migratory	LC	CMS II; MSCI
Rufous-chested Plover	<i>Charadrius modestus</i>	Migratory	LC	CMS II
Tawny-throated Dotterel	<i>Oreopholus ruficollis</i>	Migratory	LC	CMS II; MSCI
American Oystercatcher	<i>Haematopus palliatus</i>	Resident	NT	AFSI
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Migratory	EN	CMS II
Hudsonian Godwit	<i>Limosa haemastica</i>	Migratory	LC	CMS II; MSCI
Whimbrel	<i>Numenius hudsonicus</i>	Migratory	NT	CMS II; AFSI
Upland Sandpiper	<i>Bartramia longicauda</i>	Migratory	LC	CMS II; MSCI
Spotted Sandpiper	<i>Actitis macularius</i>	Migratory	LC	CMS II
Solitary Sandpiper	<i>Tringa solitaria</i>	Migratory	LC	CMS II
Greater Yellowlegs	<i>Tringa melanoleuca</i>	Migratory	LC	CMS II; AFSI
Willet	<i>Tringa semipalmata</i>	Migratory	LC	CMS II
Lesser Yellowlegs	<i>Tringa flavipes</i>	Migratory	LC	CMS II; MSCI; AFSI
Ruddy Turnstone	<i>Arenaria interpres</i>	Migratory	NT	CMS II; AFSI
Red Knot	<i>Calidris canutus</i>	Migratory	VU	CMS I & II; AMBI; AFSI
Sanderling	<i>Calidris alba</i>	Migratory	LC	CMS II; AFSI
Semipalmated Sandpiper	<i>Calidris pusilla</i>	Migratory	LC	CMS I & II; AMBI; AFSI
Least Sandpiper	<i>Calidris minutilla</i>	Migratory	LC	CMS II
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	Migratory	LC	CMS II
Pectoral Sandpiper	<i>Calidris melanotos</i>	Migratory	LC	CMS II; MSCI
Stilt Sandpiper	<i>Calidris himantopus</i>	Migratory	LC	CMS II; MSCI
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	Migratory	VU	CMS I & II; AMBI; MSCI
Wilson's Phalarope	<i>Phalaropus tricolor</i>	Migratory	DD	CMS II; MSCI

\* Extinction Risk Category (ERC) - LC: Least Concern; NT: Near Threatened; VU: Vulnerable; EN: Endangered, CR: Critically Endangered and DD: Data Deficient for Assessment.

\*\* CMS I and CMS II: Appendices I and II for the Convention on the Conservation of Migratory Species of Wild Animals; MOU: Memorandum of Understanding on the Conservation of Southern South American Migratory Grassland Birds and their Habitats; MSCI: Midcontinent Shorebird Conservation Initiative; AFSI: Atlantic Flyway Shorebird Initiative; AMBI: Arctic Migratory Bird Initiative.

## Area of coverage

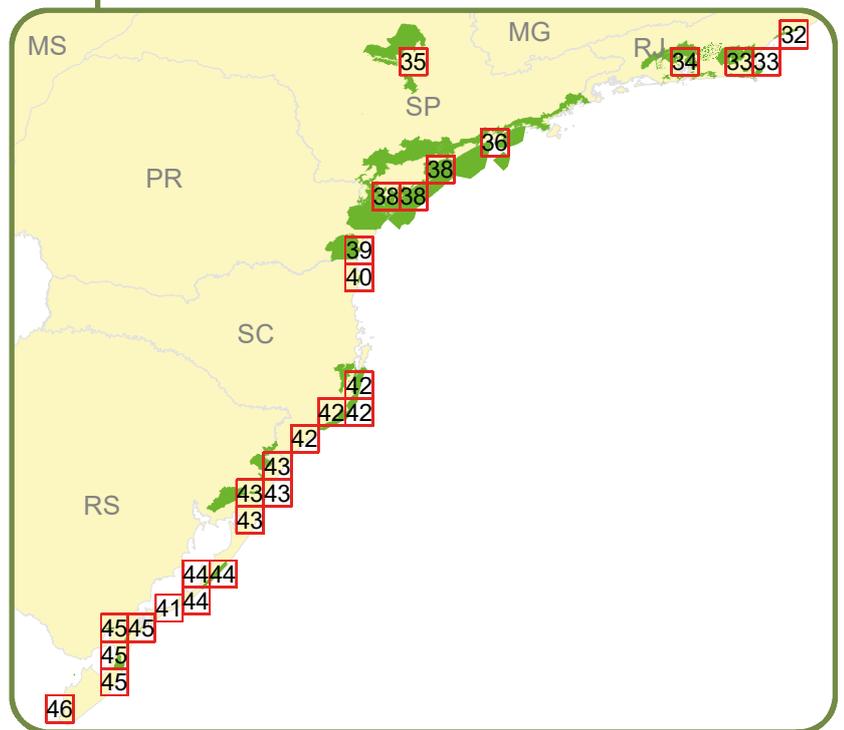
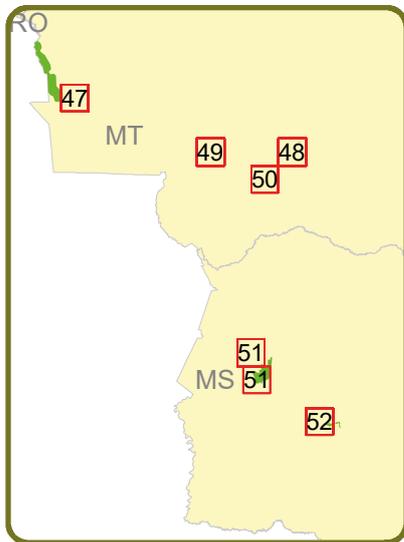
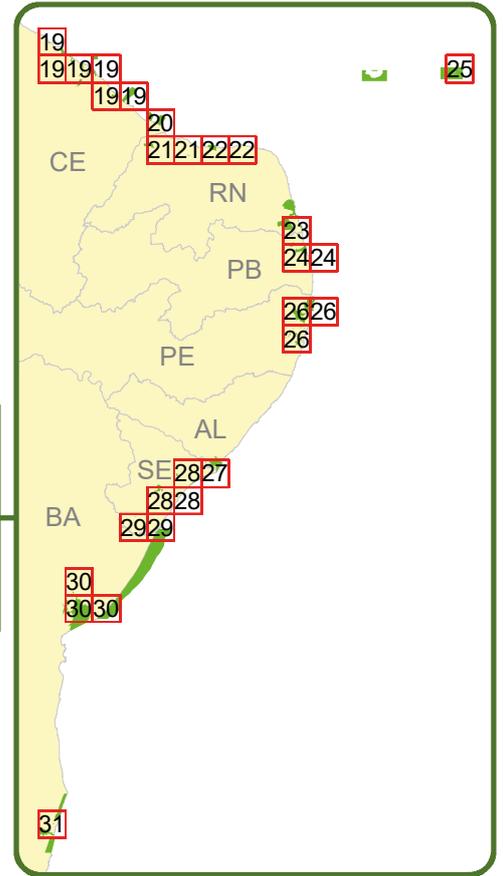
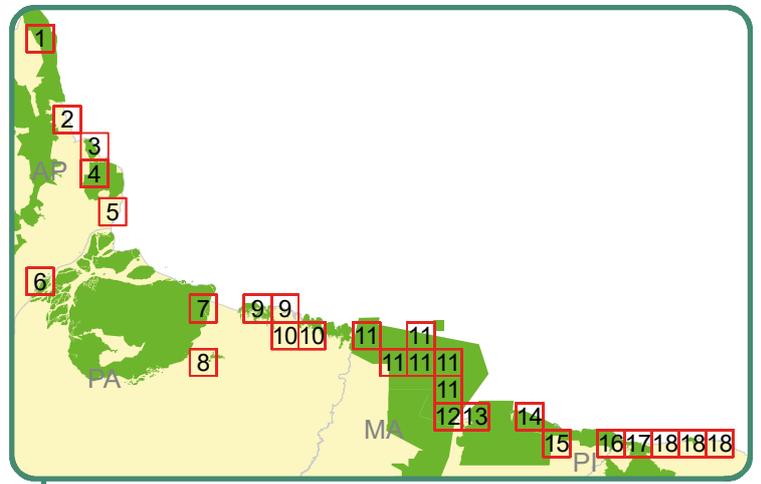
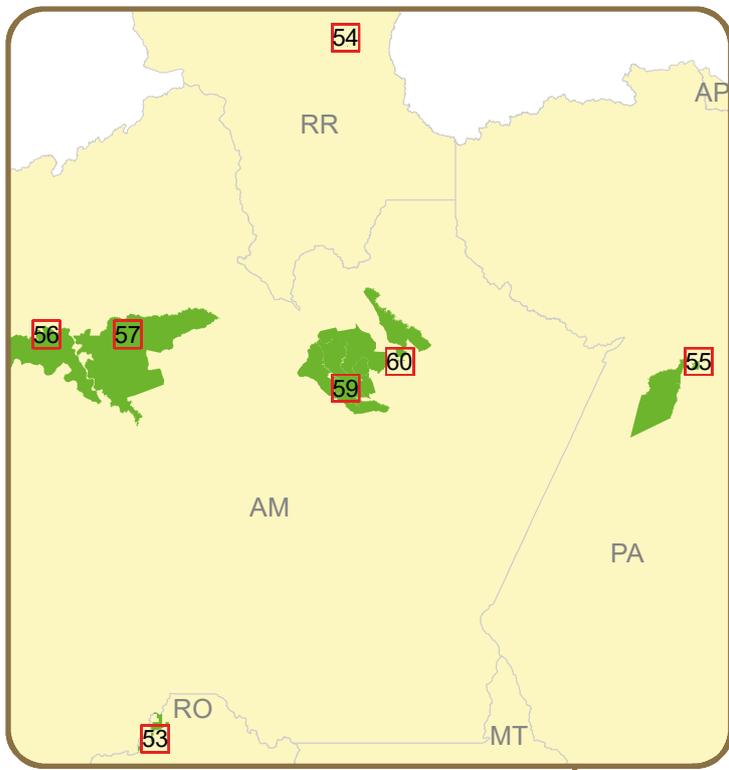
The main staging and wintering areas for migratory shorebirds in Brazil are located on the coast of Amapá, Pará, Reentrâncias Maranhenses, Ceará, Rio Grande do Norte and on the mid and south coast of Rio Grande do Sul, specifically in the Parque Nacional da Lagoa do Peixe. Important stopover areas are located along the northeast and southeast coast, all along the Atlantic flyway. As for the Central flyway, important areas are in the Amazon, Cerrado and Pantanal, as well as the marshes and other wetlands of the Pampas. Thus, the NAP for Migratory Shorebird covers the entire national territory.

A total of 60 strategic areas were identified within the national territory in the NAP. They concentrate the greatest number of species and abundances of migratory shorebirds and breeding records of resident species, including threatened species.

**Migratory Shorebirds NAP Key Areas**

Nº*	State	Locality Name	Nº*	State	Locality Name
1	AP	Parque Nacional do Cabo Orange	30	BA	Iguape-Baía de Todos os Santos
2	AP	Praia do Goiabal	31	BA	Porto Seguro
3	AP	ESEC Maracá-Jipioca	32	RJ	Parque Nacional da Restinga de Jurubatiba e lagoas de Quissamã
4	AP	REBIO do Lago Piratuba	33	RJ	Cabo Frio
5	AP	Ilha do Parazinho	34	RJ	Baía da Guanabara
6	PA	APA do Arquipélago de Marajó	35	SP	Várzeas do Embumirim e Tietê
7	PA	RESEX Soure	36	SP	Santos-Cubatão
8	PA	Belém-Baía do Capim	38	SP	APA Cananéia-Iguape-Peruíbe
9	PA	RESEXs do Salgado Paraense	39	PR	Pontal do Paraná
10	PA	RESEXs da região bragantina	40	SC	Baía da Babitonga
11	MA	Reentrâncias Maranhenses	42	SC	APA da Baleia Franca
12	MA	Baixada Maranhense	43	RS	Litoral Norte do RS
13	MA	Upaon-Açu-Miritiba-Alto Preguiça	44	RS	Litoral Médio e Parque Nacional da lagoa do Peixe
14	MA	Parque Nacional dos Lençóis Maranhenses	45	RS	Região porção final Lagoa dos Patos- Mirim
15	MA	APA Foz do Rio Preguiças	46	RS	Albardão
16	MA/PI	Foz do Rio Parnaíba	47	MT	Tarumã-Rio Alegre
17	PI	Foz do Rio Timonhas	48	MT	RPPN Sesc Pantanal
18	CE	Litoral ocidental CE	49	MT	Pantanal de Cáceres
19	CE	Pecem-Rio Ceará	50	MT	Poconé-Pantanal
20	CE	Icapui	51	MS	Rio Negro
21	RN	Porto do Mangue/Areia Branca	52	MS	Aquidauana
22	RN	litoral ocidental RN	53	RO	RESEX do Lago Cuniã
23	RN	Tibau do Sul	54	RR	proximidades da Esec de Maracá
24	PB	Litoral centro e norte da Paraíba	55	PA	RESEX Tapajós-Arapiuns
25	PE	Parque Nacional Marinho de Fernando de Noronha	56	AM	RDS Mamirauá
26	PE	Litoral de Pernambuco	57	AM	RDS Amanã
27	AL/SE	Litoral divisa AL/SE	59	AM	Parque Nacional de Anavilhanas
28	SE	Litoral centro SE	60	AM	Projeto Fragmentos Florestais
29	SE/BA	Mangue seco			

\*The maps are updated during the annual monitoring of the NAP, maintaining the original numbering.



# Threats

Shorebirds suffer negative human impact both directly and indirectly.

Indirect threats are related to habitat changes caused by human activities, which result in a decreased habitat quality or a total loss of habitat. The installation of projects near wetlands such as beaches (coastal or on rivers and lakes) are the main cause of habitat alteration and loss. Among these, we can mention: (i) urban expansion and the disorderly occupation of housing along the shores of lakes, estuaries, beaches, mangroves; (ii) deforestation of mangroves, drainage or dams that alter the flooding dynamics of wetlands, such as those employed for shrimp farming or fish farming, salt production and the alteration of watercourses; (iii) constructions that result in the loss of the intertidal environment, such as harbour structures; and (iv) overhead structures that act as barriers between areas of use (such as roosting and

feeding grounds) and result in collision, such as buildings, guyed towers, wind farms, transmission lines and fences. The pollution and contamination of wetlands by chemicals from mining, agribusiness, fish farming, shrimp farming, industrial and domestic effluents, and oil exploration (especially when leakage occurs) can reduce the amount of food (marine invertebrates such as shellfish, crabs, polychaetes, etc.) available to birds. Ingestion of contaminated food compromises the birds' orientation and flight ability, thus increasing their mortality rate.

Direct human disturbance threatens shorebirds through unregulated tourism, including crowds, traffic of vehicles on beaches, sports such as kite surfing, events with excessive levels of sound and light, and fireworks. Domestic animals, such as dogs and cats, are also considered a direct threat, as they may feed on

eggs and/or birds. All the activities listed above require a constant state of alertness of the birds, which take flight when people, vehicles or animals come within a certain distance. This behaviour disrupts birds when resting and feeding, affecting their recovery and energetic build up for prolonged non-stop flight, that can last up to several days. Furthermore, although not a very common practice, in Brazil, these birds still face the risk of being hunted at several points along their migratory path.

Alterations resulting from climate change are also increasingly impacting traditionally used habitats, for example, with rising sea levels, and may interfere with the regulation of the birds' migration periods, undoing the synchrony between migratory phases and food availability.

Rogério Peccioli



Rogério Peccioli

Onofre Monteiro



Onofre Monteiro

**Irregular use and occupation on the margins of wetlands, water and soil contamination, and the implementation of ventures such as shrimp farming and salt pans can reduce the availability of environments and resources.**

Onofre Monteiro



Onofre Monteiro

**Migration routes can be affected by the installation of aerial structures such as transmission lines and wind turbines.**

# Strategy for the Conservation of Migratory Shorebirds

The National Action plan for the Conservation of Migratory Shorebirds is part of the national strategy for the protection of threatened species established by the Pró-Espécies National Program, which aims at minimising threats and risks of species extinction by adopting prevention, conservation, management and enforcement actions (MMA [Ministry of Environment] Ordinance No. 43, 31 January 2014). The first cycle of the NAP for Migratory Shorebird Conservation ran from 2013 to 2018, and its final evaluation recommended the continuation of the plan through a second cycle (2019-2024).

The 2<sup>nd</sup> Cycle NAP Migratory Shorebird Workshop was coordinated by the Centro Nacional de Investigación y Conservación de Aves Silvestres (CEMAVE/ICMBio) and organised in joint collaboration with SAVE Brazil, taking place from 2-5 April 2019 in Florianópolis, Santa Catarina. The event was supported by GEF Mar/Funbio and the Neotropical Migratory Bird Conservation Act of the U.S. Fish and Wildlife Service through the Western Hemisphere Shorebird Reserve

Network (WHSRN), Manomet Inc. and SAVE Brazil.

The Planning Matrix for the 2nd cycle of the National Action plan for Migratory Shorebird Conservation was drafted by 31 representatives from 13 Brazilian states and 20 different institutions, including NGOs, Municipal Government, OEMAs, Universities, IBAMA and ICMBio, the three Western Hemisphere Shorebird Reserve Network (WHSRN) sites in Brazil, and officials and employees working in the Protected Areas covered by the GEF/MAR shorebird monitoring project. The group outlined four specific objectives with a total of 25 tangible and pragmatic actions to improve conservation of the species that are the focus of the NAP, with commitments set over a five-year period. A Technical Advisory Group (TAG) was also set up for the NAP, as the group responsible for assisting in the articulation of actions, as well as monitoring and evaluating the implementation of the plan. The NAP for Migratory Shorebirds was formalised by ICMBio Ordinance No. 491 from 10 September 2019.

## Planning Matrix

General Objective			
To expand and ensure the conservation of NAP targeted shorebirds and their habitats in Brazil, promoting cooperation between civil society, public authorities and the productive sector			
Nº	Specific Objectives	Nº of actions	Estimated cost (R\$)
1	Promote and expand the recognition of the strategic areas of the NAP in the Territorial and Environmental Planning and Management policies	5	78.400,00
2	Stimulate/Promote the compatibility of human activities with the conservation of shorebirds in the strategic areas of the NAP	8	171.000,00
3	Contribute towards the improvement of environmental licensing and control of activities that have an impact on shorebirds	5	40.000,00
4	Expand knowledge to subsidize the conservation of shorebirds and their habitats in Brazil	7	126.000,00



### COLABORATION

### SUPPORT

### REALIZATION

Brasília, march 2023

To know more about the NAP Migratory Shorebirds access: [www.icmbio.gov.br/pan](http://www.icmbio.gov.br/pan)