

2021 ANNUAL REPORT



MCF
红树林
基金会



Contents

About Us

Mangrove Foundation (MCF) is the first environmental conservation foundation with public-fundraising certificate launched by civil society in China. It dedicates itself to protecting wetlands and their biodiversity, as well as conserving nature through public engagement. Currently, MCF is working on its three strategic projects: The Guardian of Shenzhen Bay, Saving Spoon-billed Sandpipers, and Mangrove Conservation and Restoration Program.

In July 2012, MCF was jointly founded by SEE (Society of Entrepreneurs and Ecology Conservation), entrepreneurs with philanthropic spirit and relevant departments of Shenzhen municipal government. Wang Shi and Ma Weihua served as presidents (founding chairman); Zhang Bigong, Ai Luming, Sun Lili and Chen Jinsong served as honorary chairman of the board; Lei Guangchun, served as chairman; and Liu Mingda served as executive board chairman.

Our Vision

Living Wetlands, Sustainable Future.

Our Mission

For a sustainable and abundant future of human and wetlands, we are dedicated to:

1. promoting active wetland management and biodiversity in wetlands;
2. advancing the establishment of wetland education centers, connecting people and wetlands;
3. facilitating wetlands with high ecological values to be designated as protected areas.

Our Values

Integrity, Charity, Collaboration, and Embracing Changes

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Message from the President



Prof. LEI Guangchun

Board Chairman of Mangrove Foundation (MCF)
Chairman of the Scientific and Technical Committee of the Convention on Wetlands
Professor of the School of Ecology and Nature Conservation, Beijing Forestry University

Since the 18th National Congress of the Communist Party of China (CPC), the CPC Central Committee with Xi Jinping as its core has given prominence to the construction of ecological civilization. In the 19th CPC National Congress, Chinese central government ensured to adopt a holistic approach to conserving mountains, rivers, forests, farmlands, lakes, and grasslands, demonstrating China's determination to participate in, contribute to and lead the global sustainable development.

Implementation of biodiversity governance is the initial step to achieve the goal of sustainable development. The global targets are to achieve "no net loss" by 2030 and full restoration by 2050, yet global biodiversity conservation today still faces serious challenges.

The year 2021 marks the 40th anniversary of China's accession to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In the same year, the 15th Conference of the Parties (COP15) to the Convention on Biological Diversity (CBD) was held in Kunming. At the conference, China announced to establish the country's first batch of national parks, of which the Giant Panda National Park integrates several nature reserves, putting great emphasis on conserving the integrity and originality of the local ecosystem. Taking into account the animals' needs for habitat and migration routes at different stages, the Giant Panda National Park will help to establish a more comprehensive and holistic ecosystem for the giant panda. The "national park" proposal will blaze the trail for ecosystem conservation in China and accelerate the construction of a nature reserve system with national parks as the mainstay. While the first batch of five parks are all mountain ecosystems, national parks of wetlands and marine ecosystems are expected to be established in the coming plans.

China's wetland conservation has gone through three stages: mapping out its fundamentals and consolidating its foundation (1992-2003), rescue and recovery (2004-2015) and comprehensive conservation (2016-2021). As the chairman of the Scientific and Technical Committee of the Convention on Wetlands, I have the privilege to witness and be part of China's engagement in the convention affairs and rule-making process. I take pride in China's extensive international cooperation and her contributions of wisdom and solutions to global ecological governance. In 2022, the COP14 (14th Session of the Conference of the Parties to the Convention on Wetlands) will be held in Wuhan and Geneva at the same time. The integration of wetland reserves into the national park system and the realization of greater protection of wetlands and river basins are becoming an irreversible trend.

In 2021, under the guidance of Liaoning Department of Natural Resources, Liaoning Forestry and Grassland Bureau, Mangrove Foundation (MCF) and the Liaohe Project Centre of SEE (Society of Entrepreneurs and Ecology Conservation) co-hosted the *Liaohe Wetland Conservation Forum*. The forum aims to promote the establishment of the Liaohe National Park, the first national park in China to achieve systematic basin-wide conservation. The parties will cooperate in the fields of wetland conservation and restoration, biodiversity conservation, monitoring and assessment, sustainable community development, nature education and build new models for green development.

The Yangtze River Basin is also a hotspot for the conservation of wildlife and their habitats, in accordance with the overall objectives of the *Construction Plan for National Parks and Other Nature Reserves and Major Projects for Wildlife Conservation (2021-2035)*. In 2021, under the active promotion of SEE

Wetland

Conservation, A Shared Commitment

and in collaboration with the Dongtan Project Center of SEE, Shanghai Forestry Bureau, Chongming Dongtan Nature Reserve and other partners, MCF supported Dongtan Reserve's application for World Natural Heritage Site. The application efforts would facilitate Dongtan Nature Reserve to be built as the demonstration base for wetland conservation in the Yellow and Bohai Seas, as well as a management and education base for internationally important wetlands.

In 2021, under the framework of the United Nations Sustainable Development Goals (SDGs), MCF has taken a critical step in its transformation into a broader conservation platform. In 2022, we are about to write a new chapter of wetland conservation in China. We are grateful for those who have always believed in the power of wetlands and supported us to raise the awareness of the value of wetland ecosystems. Humans and wetland lives are alike, being nurtured, nourished and sheltered by the wetlands. All lives contributed to the past and the present of the wetlands; the future of the wetlands is as important as our breath. Let's make concerted efforts for the future of wetland conservation!



Message from the President of SEE Conservation

Keep Striving after a Decade of Endeavor



SUN Lili

Founder / Honorary Board Chairman of Mangrove Foundation (MCF)
President of Society of Entrepreneurs and Ecology (SEE)
Chair of EAAFP Spoon-billed Sandpiper Task Force (SBS TF)

In July 2012, the Mangrove Foundation (MCF) was founded in Shenzhen City by Society of Entrepreneurs and Ecology (SEE) and 32 founders. As a civil environmental society organization widely participated by the public, MCF, like seed, was expected to grow into a 100-year foundation and go from China to the world.

As we expect, the first decade of MCF coincides with the decade when our country, guided by the 18th and 19th National Congresses of the Party, implements the policy of ecological civilization and upholds the concept of innovative, coordinated, green, open and shared development. Under the guidance and support of governments and authorities at all levels, MCF has received numerous accolades and increasing attention. From managing the Futian Mangrove Ecological Park to developing its strategic plans and systematic projects; from apprenticing with international counterparts to localization of its learned experience and practices, MCF is now making contribution to the world with its own experiences and models. As one of the initiators and the honorary chairman of the board, I feel very gratified and proud.

The year 2021 marks the 40th anniversary of the establishment of the Shenzhen Special Economic Zone and the first year to build MCF into a conservation platform. Shenzhen Bay Mangrove Restoration Project, with MCF's participation, was selected as one of the "Top 10 Cases of Nature-Based Solutions" by the Ministry of Natural Resources and the IUCN in 2021; MCF's another conservation project, Saving the Spoon-billed Sandpipers, was selected as one of the "Global Case of Biodiversity 100+". In addition to continuing our work in Shenzhen Bay and other internationally important conservation sites in China, we deepened our collaboration with the State Forestry and Grassland Administration and the East Asia-Australia Flyway Partnership (EAAFP), to accelerate the work of the International Mangrove Center and the China Wetland Education Center Network. We planned to hold a side event at the COP14 in 2022 and release our conservation

results. MCF will continue to contribute to the global collaboration on wetlands and their biodiversity conservation.

In 2021, MCF strengthened the collaboration with SEE (MCF's founding organization), project centers of SEE and other partners. MCF also provided professional support to the SEE's Issue Alliance on wetland conservation and wetland education. MCF will continue to work with SEE to integrate and incubate more initiatives and projects, creating a synergy for wetland conservation in China.

In 2021, the 4th executive board was elected. Carrying forward the spirit of innovation, not only founders and donors attended the election meeting, many nature lovers and enthusiasts of environmental charities were invited to participate. In the end, fifteen board members, five supervisors and two youth observers were elected from registered candidates. It is believed that their independent mindset and expertise will continue to provide a strong impetus to MCF's professionalization and diversification, leading MCF to contribute more experience and wisdom to the conservation of wetlands and their biodiversity.

In 2022, under the leadership of the fourth governance team, MCF, with sense of responsibility and determination, will write a new chapter not only create a new future for the wetland conservation cooperation in the Greater Bay Area of Guangdong, Hong Kong and Macau, but also for the international mangrove research and conservation, and whereby paying tribute to the opening of the 20th CPC National Congress!

Message from the Executive Board Chairman

Building a Shared Community



LIU Mingda

Executive Board Chairman of Mangrove Foundation (MCF)
Founder / Chairman of Shenzhen Mingda Asset Management Co., Ltd

Environmental protection is not difficult—doing practical and small things— not to waste, not to pollute and avoid damaging. Everything, however small, can keep this beautiful planet vibrant. On the other hand, it is also a daunting task for individuals alone. Any change that occurs on our common homeland is pertinent to every person and every family. In 2009, together with many nature-loving entrepreneurs, I embarked on a long journey, working for a public fundraising foundation. The journey well embodies a Chinese proverb, "The land nurtures the people who live on it, and in return the people will safeguard the land". We all know that if one wants to achieve his ultimate goals he must transcend many handicaps. We firmly believe that our determination and perseverance will finally convince and motivate more people to join us.

Holding onto this faith, MCF would like to work with you, our benevolent friends, to safeguard our wetlands—the land that we all live on. Forests, oceans and wetlands are among the three major ecosystems of the planet, with the richest biodiversity and the greatest carbon storage capacity. Not only do they provide protection against the risks posed by climate change, they are also the important source of food, medicine and raw materials, containing almost all of the world's freshwater resources. It is fair to say that we are far more dependent on wetland ecology than we can imagine.

However, wetlands are disappearing far more quickly than we know. It is such precious and fragile. In 2020, MCF started a new eight-year strategy. During the first two years, MCF focused on wetland and biodiversity conservation, striving to realize MCF's vision—"Living Wetlands, Sustainable Future", through firm actions. In 2021, It was an honor for me to become the Executive Board Chairman of MCF's fourth management team. Behind this trust lies heavy responsibility and mission. I have been thinking about how we can promote environmental protection and wetland conservation as a more long-term, sustainable and public engaging activity, putting

the concept of nature conservation into practice.

On September 22nd, 2020, President Xi Jinping proposed at the 75th session of the United Nations General Assembly that "China should strive to peak its carbon dioxide emissions by 2030, and strive to achieve carbon neutrality by 2060" (referred to as the "double carbon goal"). ESG (Environment-Social-Governance) is a concept and practice that integrates environmental, social and governance factors, in addition to financial information, to measure the sustainability and long-term value of an enterprise. It is also an important criterion to measure whether a listed company has fulfilled sufficient social responsibility. As a non-profit organization that advocates wetland conservation and environment protection, MCF should integrate the ESG standards into its conservation endeavors. In the future, MCF will work with more corporate partners in the field of ecological protection, motivating the society and more enterprises to promote the sustainable development, facilitating the construction of national ecological civilization and helping to build a community with a shared future for mankind.

The year 2022 marks the 10th anniversary of MCF and we would like to thank every member of our big family who have supported us over the past decade. The strength of one person or one family may be limited, but the strength of millions of people and families is gigantic. As long as life goes on, we'll not cease our efforts. The earth is our home, and environmental protection is an everlasting cause, which requires constant efforts. Fortunately, we are walking hand in hand on this road, working together for a better environment.

Message from the Secretary-General

Stick with it, the Change is Happening



YAN Baohua

Secretary-General of Mangrove Foundation (MCF)
Ph.D in Environmental Learning, University of
Arizona, USA

The year 2021 marks the 50th anniversary of China's restoration of its lawful seat in the United Nations and the 50th anniversary of the signing of the Convention on Wetlands. On August 30th, 2021, the United Nations General Assembly adopted a resolution and made February 2nd as the World Wetlands Day, once again emphasizing the significance of wetland conservation globally.

Public Participation Empowers Wetland Conservation

The conservation of wetlands and their biodiversity cannot be realized without the joint efforts of every member of the MCF family. In 2021, we had 284 volunteers, 2,535 service visits, 7,904.5 hours of service, 613 events and 27,400 public visits.

To every volunteer, expert and our partner, to every wetland conservation enthusiast, supporter and practitioner, it is your efforts that make wetlands vibrant and hopeful.

Keeping our feet on "wetlands" has brought about remarkable changes

Since the 1990s, exotic mangroves, represented by *Sonneratia* plant, have proliferated in Shenzhen Bay, encroaching on mudflats, reducing foraging and roosting areas for birds, and occupying the living space of native mangroves. From 2017 to autumn 2021, with the support of government departments, experts and partner organizations, MCF completed the treatment and restoration of 160,000 square meters of exotic mangroves, reducing the area of exotic mangroves in Shenzhen Bay by 76%. Now we are one step closer to the goal of "none exotic mangroves".

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Since October, when the migratory season begins, the black-

faced spoonbill and other shorebirds can be seen feeding in Shenzhen Bay every day. At the beginning of 2022, black-faced spoonbills became regular visitors at the Blue Cloud Lake in the northern part of Futian Mangrove Ecological Park after their first visit. In June 2021, the Shenzhen Bay Mangrove Restoration Project, of which MCF was an active participant, was celebrated as one of the top 10 exemplary cases in China as "Nature-Based Solutions (NBS)" by the Ministry of Natural Resources and the IUCN.

In Beihai and Zhanjiang, the local people who used to be educated on mangrove conservation and sustainable livelihood activities, turned into active advocates and community rangers, taking on the responsibility for ecological conservation and sustainable development. In Jiangsu and Hainan (sites of Saving the Spoon-billed Sandpipers project), two spoon-billed sandpipers (white flagged U2 and white flagged C2), captive-bred and wild-released in their Russian breeding grounds, arrived at their migratory stopover and wintering grounds, as they were observed in Tiaozini wetland and Danzhou Bay respectively.

From Shenzhen Bay to the mangrove forests across the Tropic of Cancer, we jointly promote nature-based mangrove conservation and restoration in South China and Southeast Asia. In addition, we are also safeguarding the East Asian—Australasian Flyway, home of 50 million migratory water birds—represented by the spoon-billed sandpiper.

The Future is in Sight

Looking into 2022, MCF will be celebrating its 10th birthday in July. We will continue to join forces under the framework of the three international conventions—the *Convention on Wetlands*, the *Convention on Biological Diversity* and the *United Nations Framework Convention on Climate Change*—to build a platform for the conservation of wetlands and their biodiversity, making contribution to the global sustainable development.

Last but not the least, I would like to express my heartfelt thanks to all MCF family members and friends, who make change happen.

闫保华

The 4th Session of Executive Board of Mangrove Foundation (MCF)

Term of office: 2022-2027

(in alphabetical order)

Board Chairman:	Lei Guangchun			
Deputy Board Chairman:	Liu Mingda (Executive Board Chairman)	Sun Lili		
Directors of the executive board:	Chen Jinsong	Chen Xiaohan	Chen Yanping	Fei Guoqiang
	Ji Shengzhi	Wu Qingjie	Xia Liyun	Xiao Xingping
	Yan Baohua	Zhang Yuan		Huang Yunfei
				Xue Jian
Youth Observer:	Li Jiayi	Qin Yifei		
Supervision Committee Director:	Zuo Shiping			
Supervision Committee Members:	Li Peishan	Peng Fuqiang	Su Wei	Zheng Weihe

*Huang Yunfei and Wu Qingjie are publicly elected directors.

*Peng Fuqiang and Su Wei are publicly elected supervisors.



2021 In Review



January 9th

The SEE Wetland Conservation Issues Alliance launched

On January 9th, SEE launched its Wetland Conservation Issues Alliance in Nanning City, Guangxi Province. MCF provided technical support for this alliance. The issue alliance is dedicated to improving the effectiveness of wetlands conservation and enriching the approaches of public participation. The idea for the alliance was proposed by SEE's Guangxi Project Center, Shenzhen-Hong Kong Project Center and other thirteen project centers in the coastal area, in an effort to jointly protect the coastal wetlands. Starting with issues related to coastal wetland conservation, the alliance will work with many provincial project centers to carry out wetland conservation, restoration and achievement demonstration in both coastal and inland wetlands. Taking the hydrological and biological status quo into consideration, the alliance will form a long-term, in-depth and collaborative platform for wetland conservation.

February 24th

MCF put forward suggestions on Wetlands Conservation Law of the People's Republic of China (Draft)

The 25th meeting of the Standing Committee of the 13th National People's Congress (NPC) deliberated on the "Wetlands Conservation Law of the People's Republic of China (Draft)" (hereinafter referred to as the "Draft") and published it on the website of the Chinese People's Congress for comments. This is the first time that China has specifically legislated on wetland protection to strengthen wetland conservation and restoration. The law aims to establish a complete legal system for wetland protection from the perspective of the integrity and systemic nature of wetland ecosystems. The law further improves the construction of national ecological civilization. Based on the reality of wetland conservation, MCF made 6 proposals to the draft, in the hope that the amendment will be supported by all social sectors and be successfully implemented.

March 20th

The 1st Bird Watching & Nature Notes Competition launched

During the "Bird Protection Week" (from March 20th to 26th) in Guangdong Province, MCF, in collaboration with local education bureau, wetland reserves, wetland parks and wetland education centers, organized the first Bird Watching & Nature Notes Competition, hoping to encourage more people to observe birds, listen to their songs and join in the bird protection campaign through an innovative social participation approach. The "Bird Protection Week" is an activity carried out in China to protect birds and maintain the natural ecological balance.

April 17th

A fitting finale to the Youth Leadership Camp on Environment Protection

On April 17th, MCF Youth Leadership Camp on Environment Protection, the first of its kind in Shenzhen, officially concluded. This marked the graduation of 12 young environmental leaders who spent 248 days in wetlands and with migratory birds. During the camping, the participants not only received basic science education on wetland and migratory birds, but also took part in actions to protect the ecological environment of Shenzhen's coastal wetlands. In the camp, through art work exhibition and stage performance, the youth leaders disseminated MCF's concepts on the environment and biodiversity protection.

April 24th

Symposium on the Treatment of Smooth Cordgrass (*Spartina alterniflora*) in Key Habitats along EAAF

On April 24th, under the guidance of the Department of Wetland Management of the State Forestry and Grassland Administration, Wetland and World Natural Heritage Conservation Management Center of Yancheng City, the Symposium on the Treatment of Smooth Cordgrass in Key Habitats along EAAF was jointly held by MCF and the Dongtai Coastal Economic Zone Management Committee, in Tiaozini wetlands, Jiangsu Province. Experts from relevant fields and leaders of government departments exchanged experiences and discussed the latest progress in the management of smooth cordgrass. The participants also went to a fieldwork inspecting the management of smooth cordgrass in Tiaozini wetlands. Experts discussed the possible strategies and measures in treating the smooth cordgrass, proposing scientific recommendations for the key habitat restoration in Tiaozini wetlands and Zhanjiang. The symposium provided constructive suggestions for the treatment of invasive species in coastal wetlands of China.



June 23rd

The Shenzhen Bay Mangrove Wetland Restoration Project was selected as one of the “Top Ten Nature-Based Solutions” in China

On June 23rd, 2021, from the major ecological conservation and restoration projects in China, the Ministry of Natural Resources (MNR) and the International Union for Conservation of Nature (IUCN) selected 10 representative projects as the “Exemplary Case of Nature-Based Solutions in China”. The Shenzhen Bay Mangrove Wetland Restoration Project, in which MCF participated, was successfully included. The project provides a localization model of nature-based solutions and social participation in addressing different social challenges.

June 26th

Workshop hold on Key High Tide Habitat Management for Migratory Bird along EAAF

On June 26th, a workshop on High Tide Habitat Management for Key Migratory Bird along EAAF was held in Dongtai, Yancheng City, Jiangsu Province. The workshop was jointly organized by the Dongtai Coastal Economic Zone Management Committee and the Dongtai Natural Resources and Planning Bureau, MCF and Beijing Forestry University. Taihu Lake Project Center of SEE co-organized the event. The workshop focused on migratory bird high tide habitat management along the migratory zone. Project managers, experts and practitioners from home and abroad in the fields of migratory waterfowl biology and coastal management were invited. The participants exchanged their experience in management on-site practices for global migratory bird conservation.

July 14th

Women’s Federation of Mangrove Foundation (MCF) established

On July 14th, the Women’s Federation of Mangrove Foundation (MCF) was established in Futian Mangrove Ecological Park. This is the first women’s federation set up in an environmental non-profit organization in Futian District. It marks a new progress of women’s federation in the field of ecological protection in Futian District. MCF’s women federation will carry forward the spirit of “responsible, brave, devoted and dedicated”, strengthen the implementation of the federation’s annual plan and set up more specific objectives. The federation plans to improve the organizational construction, deepen the links and cooperation with other women’s organizations, promote the public awareness of ecological conservation, as well as creating new image of women in the new era.

July 30th

MCF was awarded as “Model Organization” in “Shenzhen Social Organization Exchange & Service Award”

On July 30th, in the award ceremony of “2021 Shenzhen Social Organization Exchange & Service Award”, also entitled as “Exemplary Cases of Inheriting the Red Gene, Demonstrating Spirit and Power of Social Organizations”, MCF was honored as “Model Social Organization”. Also, MCF was awarded the honor of being the only model social organization in the field of ecology and environmental protection for its commitment to conserving wetlands and their biodiversity.

November 25th

Mangrove Night — the Fundraising Gala

On November 25th, the 2021 Mangrove Night—the Fundraising Gala was hosted in Shenzhen by MCF. The charity gala dinner was held in the form of “appreciation ceremony + reciprocal banquet”. The theme of the event was on gratitude for the support of family members, new and old friends from MCF and SEE. The event was attended by 96 guests and all funds raised will be used for wetland conservation and environmental education efforts.

October 22nd

Research on China Mangrove Conservation and Recovery Strategy published

On October 22nd, the research book, Research on China Mangrove Conservation and Recovery Strategy was published. The book was the major result of “China Mangrove Conservation and Restoration Strategy Research Project”, which was jointly launched by Lao Niu Foundation, Paulson Institute and MCF. The book takes into account the status quo of mangrove conservation and restoration both at home and abroad, and analyses the current situation and causes of mangrove degradation in China. The research book evaluates current status of and identifies threats in China’s mangrove conservation efforts, as well as analyzing the problems and shortcomings in the management, protection, and restoration of mangrove wetlands.

September 27th

MCF hosted COP15 Parallel Forum & the Saving the Spoon-billed Sandpipers Project selected as “Global Case of Biodiversity 100+”

On September 27th, the Parallel Forum of Non-Governmental Organizations was officially held in Kunming during the COP15. MCF, together with SEE and GE (Global Environmental Institute), hosted the first thematic forum—Nature-Based Solutions to Climate Change: Construction of ASEAN-China Mangrove Ecological Corridor. In the forum, Saving the Spoon-billed Sandpipers, a spoon-billed sandpiper conservation project run by MCF, was selected as one of the “Global Case of Biodiversity 100+”.

July 31st

The 4th Executive Board & Supervision Committee of Mangrove Foundation (MCF) established

On July 31st, election meeting of MCF’s 4th Executive Board & Supervision Committee was held at the Shenzhen Excellence Century Plaza, resulting in a new management team of 22 members. As an innovative approach adopted by MCF since its establishment, a wide range of elected members and supervisors, passionate and concerned about mangrove wetlands and biodiversity conservation, were elected through multiple approaches. The new Council vowed to continue to explore and deepen the public participation of nature conservation.



The Guardian of Shenzhen Bay



The Problem

With urban construction and economic development, the Shenzhen Bay is facing a series of ecological challenges, such as reclamation, water pollution, ecological isolation, degradation of gei wai ponds, embankment of river channel and estuary, destruction of vegetation, exotic species invasion and pest infestation. The project is dedicated to safeguarding the wetlands and its biodiversity in Shenzhen Bay area, as well as improving the city and the wetlands to co-exist in harmony.

Annual Review

In 2021, the project completed its five-year plan under the guidance of MCF's strategy and achieved remarkable results in wetland ecological restoration, wetland education and advocacy on ecological land use. Exotic plants in the estuary of Shenzhen River were effectively controlled, and the management of the high tide bird habitats was enhanced in collaboration with the Guangdong Neilingding Futian National Nature Reserve Administration Bureau. More wetland education courses and activities were opened to students and citizens, courses and organizations winning several awards; the Futian Mangrove Ecological Park, which was entrusted by Futian District Government, had a total annual ecological value of RMB 192 million. The habitat quality in Blue Cloud Lake in the park was improved. By doing this, MCF is actively responding to the challenges in ecological land use.

Eco-Park Gross Ecosystem Product (GEP) Assessment Report

The annual ecosystem regulation service value of Futian Mangrove Ecological Park reached approximately **31.07 million RMB/year**, with an average land value of **78 RMB/m²**, which is **2.28 times** the average land value in Shenzhen.

The annual Gross Ecosystem Product (GEP) of Futian Mangrove Ecological Park is about **192.9 million RMB/year**, with an average land value of **483 RMB/m²**, which is **7.43 times** the average GEP value of Shenzhen.

Ecosystem services category		Functional volume & Unit	Value & Unit
Reduced sedimentation		613 /m ³	7,719 /RMB
Reduction of diffuse pollution	Total Nitrogen	3.24 /t	36,288 /RMB
	Total phosphorus	1.89 /t	6,615 /RMB
Carbon services		658 /t	28,116 /RMB
Water Harvesting		722,901 /m ³	4,417,433 /RMB
Stormwater runoff regulation		140,753 /m ³	4,691,294 /RMB
Climate regulation		309 million KWH	21,577,183 /RMB
Air purification	Sulphur dioxide	5 /t	8,654 /RMB
	Nitrogen oxides	138 /kg	262 /RMB
	Dust	615 /t	276,812 /RMB
Self-purification of water bodies	Chemical oxygen demand (COD)	6 /t	15,777 /RMB
	Total Nitrogen	0.44 /t	1,529 /RMB
	Total phosphorus	0.44 /t	4,892 /RMB
Cultural and recreational services		1.3 million participants	10,400,000 /RMB
Landscape Premium		150,000 / m ³	5,783,000/RMB
Total			19,290,000/RMB

Major Achievements

Key Result 1 Wetland ecosystem at Shenzhen Bay has been improved

1 The Shenzhen Bay Mangrove Wetland Restoration Project was Selected as Exemplary Case of Nature-Based Solutions in China

The *Shenzhen Bay Mangrove Wetland Restoration Project*, in which MCF participated, was selected as one of the Exemplary Case of Nature-Based Solutions in China by Ministry of Natural Resources and the International Union for Conservation of Nature (IUCN). The project was honored because of its comprehensive conservation efforts in invasive species prevention, mangroves and mudflat restoration, nature education and wide cooperation with its counterparts in Hong Kong.

2 Wetland Ecology at Shenzhen River Estuary has been restored

The project, Ecological Restoration of the Wetlands at Shenzhen River Estuary, has completed the treatment of 6.7 hectares of *Sonneratia* plants, reducing their coverage by 76%. The project effectively controlled the spread of exotic plants and expanded the habitat for water birds to winter. After the clearance of *Sonneratia* plants in the wetlands, MCF developed *A Working Plan for the Project of Ecological Restoration in Wetlands at Shenzhen River Estuary*. Guided by the plan, MCF will follow concrete steps to restore the mangrove ecological system at the Shenzhen River estuary.



October 2020, Shenzhen River estuary before clearance of *Sonneratia* plant.



September 2021, Shenzhen River estuary in the process of *Sonneratia* plant clearance.

In the Memorial Garden of the 19th International Botanical Congress at Futian Mangrove Ecological Park, MCF adopted moderate intervention to clean malignant invasive alien plants. As a result, the white leadtree (*Leucaena leucocephala*), was effectively controlled and the growth of native plants was promoted.

3 Habitat protection for key species was enhanced

Cooperated with the Guangdong Neilingding Futian National Nature Reserve Administration Bureau Administration on fish pond management and reed control, MCF optimized the terrain of fish ponds 3[#]-4[#] in the reserve. Intelligent sluice gates were introduced to promote scientific management and the use of fish ponds. MCF continued to improve the innovation in high tide habitats management for migratory birds and proposed the *Management Plan for 3[#]-4[#] Gei Wai Ponds in Futian Mangrove Nature Reserve*.

Key Result 2 Building the Wetland Education Center

1 Wetland conservation education for schools further improved

In 2021, a total of 2,418 teachers and students attended the wetland education program, Mangrove Education Program for Primary and Secondary School Students in Futian District, jointly launched by MCF with Guangdong Neilingding Futian National Nature Reserve Administration Bureau, Futian District Education Bureau and Futian District Science and Technology Association.



November 2021, wetland education activity for school students.

2 Broader participation & exciting activities

In 2021, MCF conducted 810 public engagement activities such as on-site interpretation, environmental enhancement activities and public science advocacy for corporate employees, community residents and donors. Over 37,000 participants, 2,593 volunteers and 7,936.5 hours of volunteer service were provided.

In 2021, six events were held, including Connecting City to the Mountain and Sea—Shenzhen Love Nature Festival, Bird Protection Week & Nature Note Contest, Insect Hotel: The World Environment Day Activity, Zongzi (Rice Dumpling) Making for Dragon Boat Festival, Lantern Riddle Games for the Middle Autumn Festival, the 4th Black-faced Spoonbill Day. All events and activities attracted wide participation of citizens and nature lovers.

Awards & honors won in 2021

- Futian Mangrove Ecological Park won Excellent Participant Award in National Science and Technology Activity Week (Organized by Ministry of Science and Technology).
- Our nature education course, In Search of Mangroves, was awarded 2021 Excellent Nature Education Program of Guangdong Province (issued by Guangdong Forestry Bureau)
- DENG Dandan, MCF staff, was awarded 2021 Star of Nature Education of Guangdong Province (Issued by Guangdong Provincial Forestry Bureau)
- Fight the Green Monster, Let Nature Return, an invasive plants clearance education program, was awarded Shenzhen Outstanding & Model Nature Education Activity (issued by Shenzhen Municipal Bureau of Planning and Natural Resources)
- Bird-watching activity at Shenzhen Bay Park Nature Education Center, was awarded The Most Popular Nature Education Activity (issued by Shenzhen Municipal Bureau of Urban Administration and Law Enforcement)
- Futian Mangrove Ecological Park, was awarded Shenzhen Children Friendly Park (issued by Shenzhen Women and Children Working Committee and Shenzhen Women's Federation)
- Winner of the Best Booth Award at the 2021 Park Nature Education Carnival (issued by Shenzhen Municipal Bureau of Urban Administration and Law Enforcement)
- Our "Wetland-Mangrove" team was honored the Best Popularity Award, Outstanding Discovery Award and Outstanding Team Award in 1st Contest of Urban Nature Challenge (Organized by Shenzhen Urban Nature Challenge Committee)

Key Result 3 Participating in land use evaluation, giving nature a voice

1 China's first urban park GEP assessment report was released

In collaboration with the Ecological Environment Research Center for Eco-Environmental Sciences of Chinese Academy of Sciences and other units, MCF published the first accounting report on the total value of Gross Ecosystem Product (GEP) of urban parks in China. The annual GEP of Futian Mangrove Ecological Park reached 192 million RMB/year. Compared with the accounting results of Shenzhen, the ecological park is an important ecological product supply area in Shenzhen. The supply capacity of ecological regulation products per area is 2.28 times of the city's average value. The supply capacity of total ecological regulation products per area is 7.43 times of the city's average value.

2 More migratory birds in Blue Cloud Lake, freshwater wetland diversity optimized

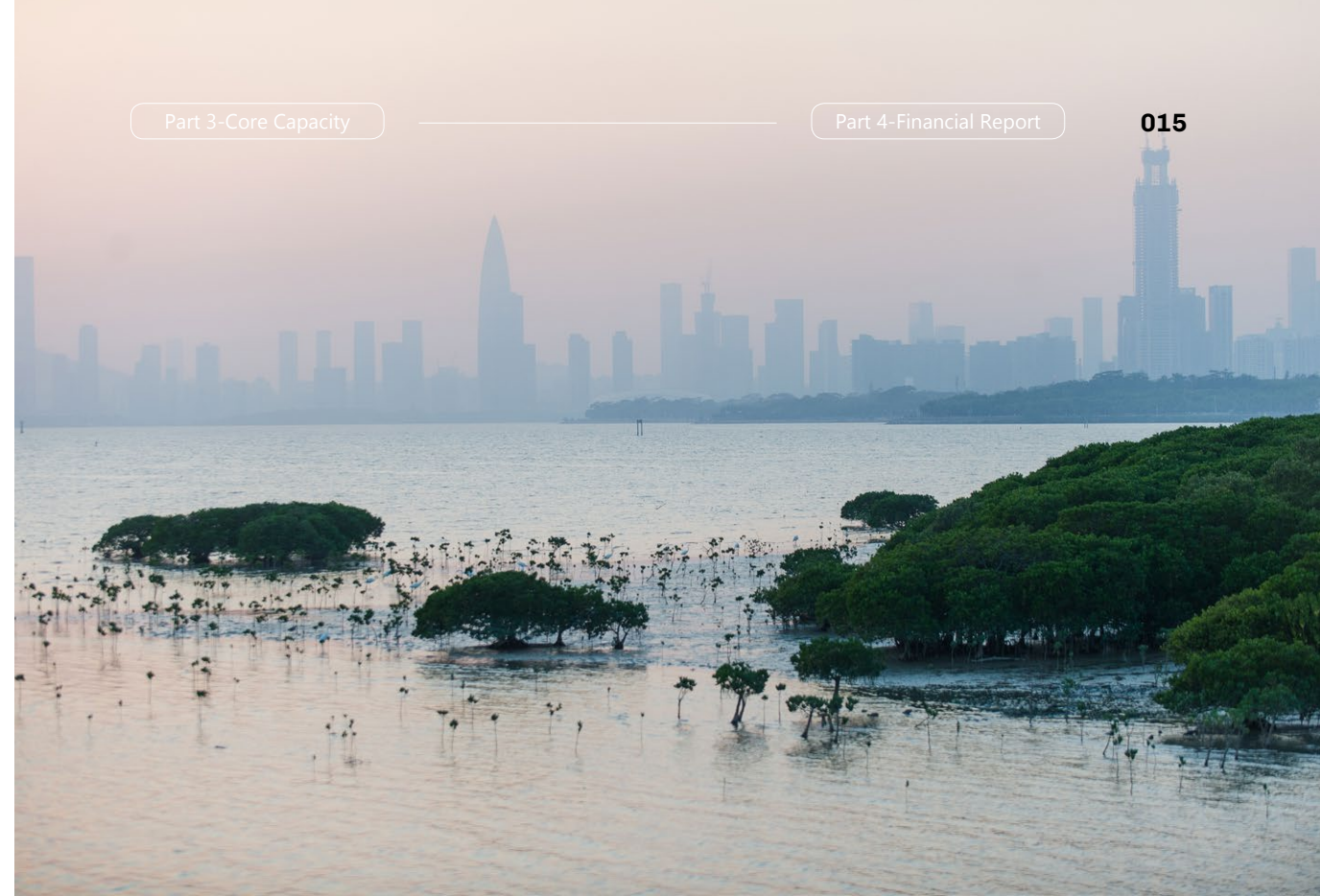
Blue Cloud Lake is the only freshwater lake within the Futian Mangrove Ecological Park and the only freshwater lake in the entire Shenzhen River estuary area. The lake is the main water source for wildlife throughout the ecological park and its surrounding nearshore land areas. In 2017, MCF created a wetland plant ecological landscape at Blue Cloud Lake, forming a typical freshwater fish pond habitat which is commonly seen in South China. In 2021, providing abundant food sources, Blue Cloud Lake regularly attracted migratory birds such as little egrets, Chinese pond heron, common moorhen, grey heron and yellow bittern foraging by the lake. In January 2022, black-faced spoonbills were observed in the lake.



January 5th, 2022, a foraging black-faced spoonbills (left) is recorded at the Blue Cloud Lake in the Mangrove Ecological Park. (Photo by Wong Yinghong)

3 The Blue Cloud Lake Attracted Public Attention for Its Protection

Deputies of the Municipal People's Congress and CPPCC members of Shenzhen City participated in a number of on-site research on lake protection. The park's ecological integrity, ecological functions in wetland ecosystem at the Shenzhen River estuary, and ecological value in the environment protection of Shenzhen City and Greater Bay Area were fully discussed.



The estuary of Fengtang River.

Outlook for 2022



YIN Yuzhu

Project Director, The Guardian of Shenzhen Bay
Executive Director, Futian Mangrove Ecological Park

To protect Shenzhen Bay, all-out efforts should be made to protect the environment in Shenzhen City. While meeting the demand for recreational landscape, we will continue to provide high-quality science education and nature experience to the public, attracting more public engagement to realize the concept of ecological civilization. We will explore the application of science and technology in conservation work, and promote the service function of wetland ecosystem, as well as building the bay area as a biodiversity hotspot. We will continue to build a Shenzhen Model of public participation in wetland conservation through operating and managing the non-profit and socially beneficial conservation sites. We will endeavor to create a model case demonstrating the harmony between people and nature. Working together with our friends, we are building a greener bay area, strengthening the wetland conservation, and promoting the overall nature conservation in the Greater Bay Area.



Saving the Spoon-billed Sandpipers



The Problem

The East Asian-Australasian Flyway (EAAF) is home to more than 250 species of migratory birds. Each year, approximately 50 million of which breed, migrate, rest and winter in the habitats along EAAF. There are 36 species of these migratory birds identified as globally threatened by the IUCN and nearly 100 waterfowl populations exceed 1% of their global population, making them of high conservation value.

The spoon-billed sandpiper (*Calidris pygmaea*) is one of the most endangered and rare birds on the planet. In 2008, IUCN upgraded its conservation status from Endangered (EN) to Critically Endangered (CR), the highest endangered level. Census data (data collected in Jiangsu, wintering sites in Myanmar and Bangladesh from 2014-2019) shows that the number of adult spoon-billed sandpipers was 490 (95% CL = 360-620) and the total population was approximately 773 (95% CL = 569-978), declining at a rate of 8% per year (Green et al., 2021). Therefore, the spoon-billed sandpiper is selected as flagship species for coastal wetland conservation along EAAF.①

Annual Review

MCF continued its in-depth cooperation with the Tiaozini wetlands in Yancheng City, Jiangsu Province. Efforts were made in management of smooth cordgrass (*Spartina alterniflora*) and improvement of a high-tide roost for migratory waterbirds. Working with our partners, MCF created and managed 720 mu (Chinese unit of area) as a high tide roost for waterbirds in Tiaozini wetlands (hereafter referred to as TZN720). The conservation management model was honored as a "Chinese sample" of global biodiversity conservation.

In 2021, MCF joined the collaboration with more partners and hosted the Executive Committee and Members' Meeting of the Spoon-billed Sandpiper Conservation Alliance. The Alliance integrated major forces of migratory waterfowl conservation in China and set conservation priorities for the next five years, in the areas of scientific research, monitoring, habitat conservation, partner empowerment and international cooperation on conservation of waterbirds of its habitats along EAAF, with spoon-billed sandpiper as its flagship species.

MCF's conservation project, Saving the Spoon-billed Sandpipers, was selected as one of the "Global Case of Biodiversity 100+" in CBD COP15.



The spoon-billed sandpiper. (Photo by Li Dongming)

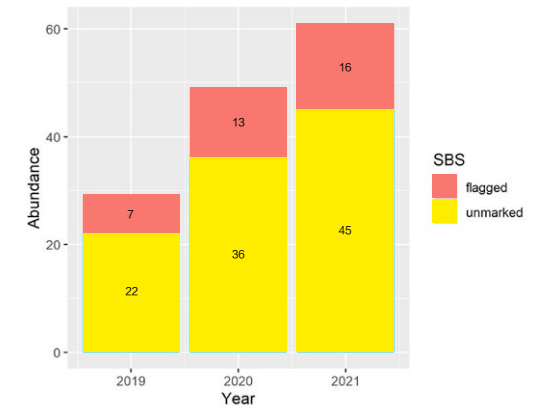
① Green R, Syroechkovskiy E E, Anderson G Q A, et al. New estimates of the size and trend of the world population of the Spoon-billed Sandpiper using three independent statistical models[J]. 2021.

Major Achievements

Key Result 1 Carrying out comprehensive research and monitoring to provide scientific evidence for spoon-billed sandpiper conservation and habitat restoration

1 Spoon-billed sandpiper winter census was conducted

The winter census covered 18 known spoon-billed sandpiper wintering sites in China (from Hangzhou Bay in the north to Beibu Gulf in the southwest), a total of 61 spoon-billed sandpipers (8% of the global population) were recorded, including 33 individuals with legflags.



Spoon-billed sandpiper population statistics by 2019-2021 winter census.

2 The research results were published, studies and research were carried out.

When habitat interpretation and plover density identification in Tiaozini wetlands were completed, MCF developed a density estimation algorithms by integrating the cutting-edge technology of ecology and computer vision. The density estimation algorithms can not only be specifically applied to monitor the plover migration in Tiaozini wetlands, but also can be deployed on other computing platform.

Research was conducted to evaluate the impact of human disturbance on bird habitats at Shanxinsha Island, Fangchenggang City. Shanxinsha Island is an important habitat for migrating waterbirds in Guangxi Province. In collaboration with the Guangxi project center of SEE and BRC (Guangxi Provincial Biodiversity Conservation Association), MCF put forward a "Temporal & Terrain" management proposal. The proposal effectively reduced human-bird conflicts on the island, and helped to boost ecological tourism and promote rural revitalization policy.

Diversity and Distributions

RESEARCH ARTICLE | Open Access | CC BY

Mollusc aquaculture homogenizes intertidal soft-sediment communities along the 18,400 km long coastline of China

He-Bo Peng, Ying-Chi Chan, Tanya J. Compton, Xue-Fei Cheng, David S. Melville, Shou-Dong Zhang, Zhengwang Zhang, Guangchun Lei, Zhijun Ma, Theunis Piersma ... See fewer authors

First published: 21 May 2021 | <https://doi.org/10.1111/ddl.13302> | Citations: 1

May 2021, a research paper on food resource replenishment of spoon-billed sandpiper and migratory waterfowl published.

Key Result 2 Carry out demonstration projects and improve the quality of key spoon-billed sandpiper habitat.

1 Set the TZN 720 model, which become a Chinese sample for global biodiversity conservation

MCF promote and participant in the development of the restoration plan the estuary of the Fangtang River in Tiaozini wetlands. In addition, MCF also formulated the *Implementing Regulations for TZN720*. Moreover, MCF completed the design of 15 interpretation signs, among which 5 have already been installed. A workstation was also established.



June 2021, group photo of High Tide Habitat Management Symposium



June 2021, Prof. Amold van Kreveld presents the High Tide Habitat Symposium

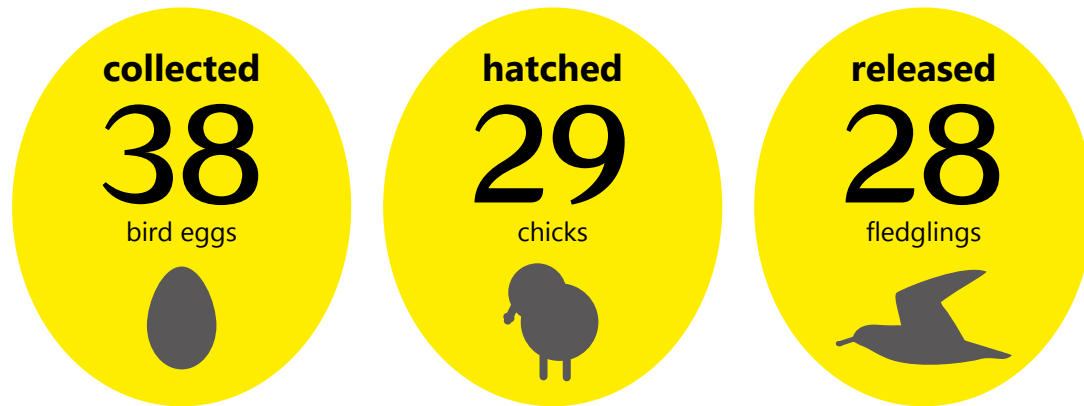
2 Promoting the joint efforts among partners in spoon-billed sandpiper and mangrove wetland conservation in Leizhou Bay

The waterbird monitoring, spoon-billed sandpiper census and the food source survey were conducted in 2021. Together with conservation efforts made by Mangrove Conservation and Restoration Program, MCF strove to improve the efforts in management of the smooth cordgrass, community engagement, eco-friendly aquaculture, and wetland restoration. All the efforts made by MCF provided solid scientific underpinnings for the conservation strategy in Leizhou Bay, the largest wintering site for spoon-billed sandpipers.

Key Result 3 Expanding the protection of migratory waterbirds along EAAF

1 Supporting SBS breeding and wintering habitats protection

MCF has provided sustained support for the Russian research on headstarting and scientific research in breeding sites to slow down the decline of the spoon-billed sandpiper population. The Russian experts have released a total of 234 headstarted spoon-billed sandpipers since 2012, and have kept observing the return of birds since 2014. 10 headstarting individuals has been resighted in 2021, indicating that the headstarting has been a success.



Conservation outcomes of captive breeding in 2021.

Constant support was provided to Myanmar for sbs wintering sites monitoring and local team capacity building, so as to improve the estimation accuracy of global spoon-billed sandpiper population. In 2021 the monitoring of the Gulf of Motama (GoM), Myanmar, the biggest wintering site for sbs, 17 sbs were sighted, with an estimated population of 42 sbs in the region (99 were recorded and the estimated population were 114 in 2020). Compared with the data from the same period in 2020, the result showed a clear downward trend.

2 Optimizing the working mechanism of the Alliance and conducting capacity building training

In 2021, MCF organized the *Executive Committee Meeting of Spoon-billed Sandpiper Conservation Alliance*, and formulated the working mechanism as well as an action plan of the Alliance. In this year, MCF organized the Members' Meeting of Spoon-billed Sandpiper Conservation Alliance and conducted field training on waterbird surveys in Zhanjiang.



August 2021, the seminar on action plan is organized by the Spoon-billed Sandpiper Conservation Alliance

3 Based on the achievements made by the Alliance, funding projects were integrated and optimized systematically

The research, conservation and education of wetland protection along EAAF have been upgraded through the successful integration of different funding projects. To date, MCF's conservation efforts have been expanded to 6 wetlands in 5 provinces (including municipality directly under the Central Government) across China.



A hands-on training at a mudflat in Zhanjiang during the meeting of Spoon-billed Sandpiper Conservation Alliance

Funding outcomes:

- MCF continued to carry out projects such as Growing up Together and Green Starters. The following five environment protection organizations were funded:
 - Organizations funded by Growing up Together project :
 - Shanghai Forest City Studio
 - Zhanjiang Bird Watching Society
 - Haikou Duotan Wetlands Research Institute
 - Sanjiangyuan Ecological Protection Association of Qinghai Province.
 - New Leaf Youth Cultural Development Center (Sustainable Horticulture Group)
 - Organization funded by the Green Starters project:
 - Shenzhen Aiqi Nature & Ecology Technology Co.
- Supporting the biennial study of the *Green Paper on Coastal Wetlands Protection in China*.
- Launch of the second round funding for the "Shaohua Project" with four programs funded:
 - World Migratory Bird Day Carnival and Bird Photography Exhibition
 - Evaluation and Enhancement Project on Community Participation of Waterbird Protection in the East Dongting Lake
 - Community Patrolling and Public Education in the Duchang Nature Reserve
 - Mangrove Conservation Public Science Education Based on Landscape Ecology Field Study



Poster of the "Shaohua Project" (a spoon-billed sandpiper protection project)

Outlook for 2022



CHEN Qing

Senior Conservation Program Manager
Coastal Wetlands Conservation Program

We will steadily advance our research and monitoring work, continue to improve the capacity and capability of conservation sites in China. We will strengthen cooperation among partners in breeding and wintering site management, as well as promoting the collaboration in waterbird conservation and habitat protection along EAAF, with the spoon-billed sandpiper as the flagship species.

Mangrove Conservation and Restoration Program



The Problem

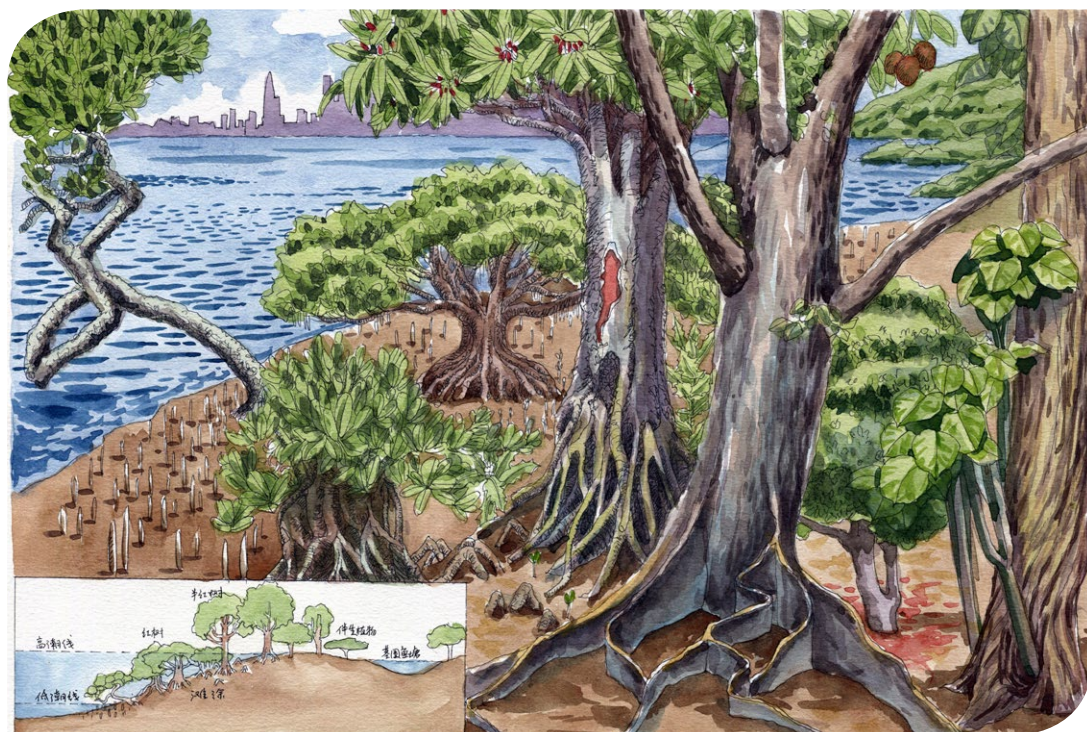
In the second half of the 20th century, 35% of the world's mangroves disappeared, while China lost 73% of its mangrove area. In the last 20 years, China has gradually included most of its mangroves in the management of nature reserves, wetland parks and other protected areas, and has implemented a number of mangrove ecological restoration projects to increase the area of mangroves.

However, China's mangroves are largely located in densely populated coastal areas, and over 90% of mangroves are subject to human disturbance of varying degrees. Many protected areas are in conflict between conservation and land use, and in need of the personnel, technology and resources required for effective management. Some forestation practices, such as the large-scale adoption of single species, the use of exotic species, and the mere expansion of forested areas at the expense of ecosystem integrity and variability have prevented mangrove plantations from performing their proper ecological functions.

The Southeast Asian region, as the global center of mangrove distribution, is still experiencing a decline in mangrove ecosystems. Many conservation organizations have undertaken varied conservation efforts in this area. However, due to a lack of strong policy and funding support, many mangrove forests are void of protection.

Annual Review

In 2021, in order to address the major problems, MCF carried out mangrove conservation and achievement demonstration project. The project was implemented and initial progress was made in pest control, mangrove restoration and community-based mangrove management. Through the construction of a mangrove training centre, the project promoted exchange and capacity enhancement in protected areas as well as providing scientific rationale for decision-making and fine management of protected areas. In addition, the project has also expanded international cooperation and joined hands with other partners to promote mangrove conservation in ASEAN region.



Major Achievements

Key Result 1 Mangrove conservation, restoration and demonstration projects have been conducted and will be built as model cases.

1 Demonstration project of biotic disturbance control

In the National Mangrove Nature Reserve of Zhanjiang City, Guangdong Province, 42 mu (a Chinese unit of area, equal to 1/15 of a hectare or 1/6 an acre) of smooth cordgrass (*Spartina alterniflora*) and 5 mu of *Derris trifoliata* were treated in Fucheng Town and Gaoqiao Town, and mangroves were planted in this areas for restoration. In terms of control methods, MCF explored many economical and effective methods in the management of smooth cordgrass.

Based on the preliminary clearance efforts, a 2-year study on the proliferation monitoring and dispersal mechanism of white mangrove (*Laguncularia racemosa*) was completed in Xinying Town, Hainan Province. In response to the proliferation of *Sonneratia* plant, a seed interceptor device was designed and will be applied in 2022 to prevent *Sonneratia plant* from spreading.

2 Demonstration project of mangrove forest restoration

Following the site selection of Conversion of Aquaculture Ponds to Mangrove Forests project, restoration would be conducted in 2022. However, the project faces social and financial challenges. The feasibility of the project depends heavily on how to address the problem of community livelihood and balance the costs.

Teams from MCF has been exploring the rational use of mangroves through *Mangrove Plantation & Sustainable Aquaculture*, a pilot project conducted in Wanning City, Hainan Province. As a result, the project team has completed the design for mangrove plantation and a working plan for ecosystem monitoring. Now the team is working on reshaping the terrain.



September 2021, the Smooth Cordgrass (*Spartina alterniflora*) Clearance Campaign is carried out in Beijia Village, Fucheng Town, Zhanjiang City.



May 2021, young nature-lovers are invited to draw posters for community-based mangrove management.



May 2021, MCF staff are visiting the coastal communities.

3 Demonstration project of community-based mangrove management

The community-based mangrove management project has been carried out in Beihai City in Guangxi Province and Zhanjiang City in Guangdong Province.

In Beihai, a "Dialogue & Consultation Mechanism" between residents and mangrove reserves was set up through community mobilization, sustainable livelihood education and volunteer patrol. The feasibility study on the use of grey mangrove (*Avicennia marina*) fruit was completed. Through mangrove community survey and status quo survey, MCF put forward the recommendations on the rational use and control of mangrove resources. The preliminary results were reported at National Mangrove Academic Conference.

Two sites in Fucheng Town of Zhanjiang City were selected as the pilot sites for the community-based mangrove management. By signing conservation agreement with local community, MCF tried to solve the problems of human interference and the channel blockage caused by the proliferation of *Sonneratia* plant. In addition, MCF provided support for the local community to clear the *Sonneratia* plant and garbage in the protected area. MCF was actively engaged in educating and patrolling efforts to promote mangrove wetland protection and environmental quality in the local community.

Key Result 2 Promoting the establishment of mangrove training centers and empowering mangrove conservation entities.

The construction of the protected land of mangrove forests was enhanced. The mangrove conservation training center conducted monitoring and management training, facilitating the exchange among different protected lands and improving the level of conservation practices.



June 2021, Prof. Wang Wenqing presents the Workshop on Mangrove Wetlands Monitoring in Hainan Province.



June 2021, group photo of the Workshop.

Key Result 3 Expanding international cooperation and strengthening mangrove conservation in ASEAN regions.

With GCAI (Global Climate Action Initiative) and other organizations, MCF jointly launched the ASEAN-China Mangrove Conservation Network to promote civil cooperation on mangrove conservation. Collaborated with GEI (Global Environmental Institute) and SEE, MCF co-hosted the "Nature-based Climate Change Solutions: ASEAN-China Mangrove Ecological Corridor" side event and issued ASEAN-China Mangrove Conservation Initiative during CBD COP15.

MCF facilitated the establishment of the International Mangrove Center, helping to build a global platform to support mangrove conservation and restoration.



September 2021, the ASEAN-China Mangrove Conservation Initiative.



June 2021, field training on sample monitoring.



June 2021, field training on benthos ecology monitoring.

Outlook for 2022



XU Wansu
Director of Coastal Wetland Conservation Program

In 2021, under the guidance of the *Special Action Plan for Mangrove Protection and Restoration (2020-2025)*, all provinces have made corresponding plans and actively carried out restoration projects. Pilot projects have been implemented in Guangdong, Guangxi and Hainan, focusing on alien species treatment, pest control, capacity enhancement and community engagement. Active progress has been made in implementing the *Action Plan*.

In 2022, we will promote demonstration projects such as *Conversion of Aquaculture Ponds to Mangrove Forest and Natural Restoration* on a larger scale. We will investigate the restoration carried out in different regions and identify the practical problems, so as to provide suggestions for the sustainable and effective implementation of mangrove wetland protection and restoration. At the same time, we will further promote international cooperation and actively participate in and support global mangrove conservation.



Collaboration with Partners

Annual Review

In 2021, MCF actively promoted governmental policy on coastal wetland conservation and implemented the strategic tasks assigned by the Department of Wetlands of the State Forestry and Grassland Administration. Meanwhile, we participated in events such as CBD COP15 and COP14 (the 14th Meeting of the Conference of the Contracting Parties to the Ramsar Convention on Wetlands), and supported the preparation of the SEE Wetland Conservation Issues Alliance. Moreover, we assisted the Dongtan program of SEE Donghai Project Center, the Wanzuitou Wetland Biodiversity Survey of SEE Zhujiang Project Center, the Education Center of SEE Taihu Project Center and the Liaohe River National Park Wetland Forum of SEE Liaohe Project Center.

Major Achievements

Key Result 1 Making efforts to accelerate the implementation of wetland biodiversity conservation policies

MCF actively participated in the legislative process of the *Wetlands Conservation Law of the People's Republic of China*. We made proposals, supported the expert webinars and the compilation of the *Green Paper of China's Coastal Wetland Conservation*. Our suggestions and proposals were submitted to government departments for the enhancement of coastal wetlands conservation. MCF also shared its experience and achievements in wetland and mangrove conservation with the members of the Alliance of Civically Protected Areas.

Key Result 2 Improving the collaboration among conservation networks

Under the guidance of the Department of Wetland Management of the State Forestry and Grassland Administration, MCF actively promoted the conservation and restoration of mangroves and wetlands. Besides, MCF carried out public education programs and co-hosted international convention meetings and submitted wetland conservation proposals to COP14. Based on their influence on and connection with the global wetland conservation network, founders and directors of MCF brought forward proposals on wetland conservation to Shenzhen Municipal CPPCC, providing substantial help in accelerating the International Mangrove Conservation Partnership to be launched in Shenzhen. At the same time, MCF strengthened its collaboration with the Yangtze River Conservation Network, Coastal Wetland Conservation Network, Yellow River Conservation Network, and Heilongjiang River Conservation Network.

Key Result 3 Supporting the establishment of the SEE Coastal Wetland Conservation Issues Alliance and provided professional support to assist Alliance members to implement their projects

MCF supported the establishment of the SEE Coastal Wetland Conservation Issues Alliance and made efforts to improve its working mechanism. MCF organized a series of meetings such as the Founding Meeting of the Wetland Issues Alliance in Nanchang, Wetland Conservation Summit in Shenyang, and the Annual Meeting of Wetland Issues Alliance in Nanchang. We assisted SEE's project centers to implement multiple programs, such as the Chongming Dongtan Nature Education Program of SEE Donghai Project Center, the Wanzuitou Wetland Park Program of SEE Zhujiang Center, the Wetland Education Program of SEE Taihu Project Center, and the Green Industry Fund Program in National Park of SEE Liaohe Project Center.



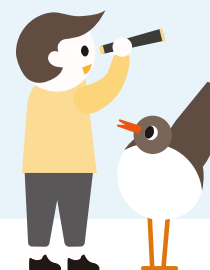
From July 23th - 25th, 2021, Liaohe Wetland Conservation Forum is organized.



From October 23th - 24th, 2021, MCF secretariat supported the joint research study tour in Tiaozini mudflat conducted by the SEE Taihu Project Center and the East China Sea Project Center.

Outlook for 2022

In 2022, as a public fundraising organization, MCF will bring its advantages into full play and diversify the approaches for public engagement and cooperation in wetland and biodiversity conservation as well as climate change adaptation. To this end, MCF will actively follow up on the main objectives of the COP14, assist with organizing side events on mangrove conservation. MCF will stay close with network members in coastal area, Yangtze River, Yellow River and Heilongjiang rivers. We will cooperate with members of SEE Coastal Wetland Conservation Issues Alliance to implement their projects. By collaborating with our partners, MCF will improve its funding-raising mechanism and expand the scale of public engagement for the conservation of wetlands and their biodiversity.



Wetland Education

Annual Review

In 2021, the MCF Wetland Education team continued to promote training, practice and exchange in wetland education centers across China. We launched China Wetland Center Initiative and helped to establish SEE Wetland Conservation Alliance and Nature Education Alliance. We also endeavored to improve school curriculum, capacity building and research on wetland education in Shenzhen. In 2021, education team worked out its mid-term plan (2022-2024), setting goals for next three years.

Major Achievements

Key Result 1 Building platforms for local exchange of experience and practices for wetland education

1 Jointly launched the "China Wetland Center Initiative".

MCF jointly launched the "China Wetland Center Initiative" with the Department of Wetland Management of the State Forestry and Grassland Administration and SEE, with the goal to professionalize wetland centers in China. The initiative plans to explore innovative models for wetland education as well as demonstrating achievements in wetland conservation in China.

2 Publishing the *Planning and Practice of Wetland Centers*

Based on the *Guide and Manual Hand Books for Wetland Centres* launched in 2021, this new book contained an extra chapter of 11 new show cases of wetland centers at home and abroad. The newly revised book will be published in January 2022 and become the theoretical underpinnings to guide and support the wetland education for wetlands.



January 2022, publishing the *Planning and Practice of Wetland Centers*

3 Training and hands-on practices were conducted for the wetland education network

From March to May, the first National Nature Journal for Wetland activity incited a wealth of online and offline wetland education activities were held in seven important wetlands in Shanghai, Jiangsu, Guangdong and Hainan along the EAAF. In collaboration with local education bureau, wetland reserves,

wetland parks and wetland centers. The program attracted 80 teachers from 46 primary and secondary schools and collected over 500 hand-made art works, and 100 videos of bird watching activities.

In November, collaborating with wetland reserves in Shenzhen, Zhanjiang and Shanghai, a series of (online & offline) wetland education training-for-trainer workshops were provided for teachers. *The Wonderful Wetlands-Environmental Education Teacher's Manual*, a wetland education curriculum was used during the training. 118 teachers attended the online training; 56 primary and secondary school teachers from nearly 40 schools participated in the offline workshops.

4 Supporting local centers of SEE Wetland Conservation Alliance on wetland education programs.

The team continued to explore new collaboration with SEE Donghai center in Shanghai Chongming National Reserve. Our project conducted learning strategy, interpretation design and public educational trail. We also provided a series of training workshops for local partners.

The team also worked with SEE Pearl River Project Center to launch collaboration on Guanzhou Wanzuitou Wetland with Guanzhou Forestry Bureau. A *3-Year Wetland Education Plan for the Wanzuitou Wetland* was completed.

The team facilitated the capacity building in wetland education for the members from SEE local centers. Workshops for core wetland education competencies was held for 11 partners from 3 nature reserves and 10 regional representatives from SEE local centers.

Contents of the training course covered all the conservation modules recommended for wetland education in the CEPA program. The training was guided by the *Handbook on the Establishment of Wetland Education Center in China* and yielded fruitful results.

The team actively aided the launch and management of the Nature Education Alliance of 22 SEE local centers on December 10th. MCF shouldered its responsibility as the secretariat for the Alliance. MCF assisted SEE to optimize the working mechanism, convene meetings, and to engage more public resource for a diverse social participation in wetland conservation.



November 2021, SEE Nature Education Issues Alliance is launched.

Key Result 2 Building professional teams and improving staff capacity for the education center project in Shenzhen Bay

1 Capacity Building and Outreach Successful Practice in MCF

Collaborated with external experts, we completed a workshop for senior instructors of MCF. The course was designed to enhance their expertise and understanding of wetland education.

The *Mapping Report of MCF Education Program 2020 (Discussion Version)* was completed. Through careful analysis of instructor, activity, facilities and venues, the report provided detailed suggestions for the wetland education in Shenzhen Bay project.

An assessment report on the effectiveness of wetland education curriculum for schools was completed. The report will be published in 2022 and become a valuable record of local practices on environmental education in China.

Preparations for publication of *Into the Mangrove: Manual Book for Nature Education and Teaching Activities*, which will be published by China Environment Press in 2022. This book will be a sophisticated tutorial toolkit for wetlands and schools who plan to conduct on-site school education program in mangrove wetlands.

2 The 3-Year Plan for Wetland Education completed

In line with MCF's strategic plan, a mid-term plan (2022-2024) was completed. To fulfill our mission—through implementing CEPA program and establishing wetland centers to connect wetlands and people, Our goal is that "Wetlands are conserved, wisely used, restored and their benefits are recognized and valued by all".

Outlook for 2022



HU Huizhe

Chief Education Researcher

Depending on Shenzhen Bay and wetland centers in other places, MCF aims to promote best practice of wetland centers and CEPA program in China, and to establish China Wetland Centers network to inspire, support, and provide capacity building for wetland centers across the nation. Our goal is that "Wetlands are conserved, wisely used, restored and their benefits are recognized and valued by all".

Our future work will be significantly based on wetland centers established with missions for wetland conservation. MCF will focus on culturing a national wetland education network, crafting models of local wetland centers, promoting empowerment for wetland partners and engaging divers public resource for social participation in wetland education for wetland conservation.

Fundraising & Branding

Donation & Fundraising (unit: CNY)

Data of Annual Donation*

Donation from public fundraising platforms

9.07 million

The number of MCF monthly donors

1,253 people

Annual fundraising amounted to **34.80** million

Donation Times

2.7 million times

The number of monthly donors for the Mangrove Conservation and Restoration program on Tencent fundraising platform

1,101,8 people

* Data were collected from January 1st, 2021 to December 31st, 2021.

Annual Review

In 2021, the income of MCF was mainly from 4 parts: public fundraising, enterprise donation, peer funding and government purchase. Donors were attracted and resources were integrated with the focus on coastal wetland conservation. Public fundraising was carried out via the Internet platform, cooperation between partners were deepened, and capacity of management were ungraded. Changes were made in fundraising efforts along with the changes of time and society. New fundraising strategy and products were innovated in line with MCF's strategic development.




Major Achievements


Key Result 1 Donors were attracted and resources were integrated with the focus on coastal wetland conservation


We continued to carry out fundraising campaign via multiple Internet platforms. Greater importance has been attached to new Internet platforms and innovative methods in fundraising were implemented.

List of the Internet platforms and achievements (in alphabetical order)





Fundraising campaign was successfully launched via 360 Public Welfare, the third batch of China's online public fundraising platform.







- Taobao Story Cans (Wang Kai) / Taobao Online Shop
- Two projects—Mangrove Conservation and Restoration and Saving the Spoon-billed Sandpipers (Phase III)—passed the project review of the XIN Yibai Project.







The monthly donation encourages more long-term attention and support.







- MCF's fundraising programs were recommended for 5 times on the home page of Tencent online fundraising platform. Stories of wetland conservation were recommended twice by the Wechat public account of Tencent Charity Foundation.
- Carbon neutrality Q&A Mini apps launched.







Donors were attracted and fund were raised by high-quality contents and good stories



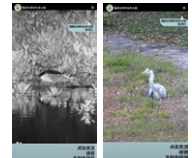


- MCF's programs on Alipay Philanthropy were applied to the blockchain.
- Joined the Friends Club of Alipay Ant Forest





Successfully launched fundraising programs on ByteDance philanthropy platform, the third batch of China's public online fundraising platform. Working closely with TikTok, MCF tried "slow live broadcasts in conservation sites" and short videos, continuing its exploration of new ways to attract public attention and support.





Key Result 2 Mangrove Night—the Fundraising Gala was successfully held

The 2021 Fundraising Gala was held with an innovative form of reciprocal banquet. The banquet was held under the theme *Thank You for Being the Friend of Nature*, and both new and old members of the Mangrove Family and SEE were appreciated for their sustaining support for the gala. MCF made great efforts to innovate and enhance the experience and results of the fundraising gala, accumulating experience and setting up models for sustainable development.



2021 Mangrove Night—the Fundraising Gala

Branding

Annual Review

In 2021, good timing, innovation in cooperation and new channels were the key words for our branding campaign. Brand visibility reached to nearly 60 million. The highlights came with the huge increase in online communication activities on Weibo, while cross-channel cooperation between brands brought a more dynamic and trendier image to MCF. 2021 is a year full of innovation and creativity. We hope these moments will make your life more diversified as well.



On the International Day for the Conservation of the Mangrove Ecosystem, celebrity artists are linked and call for conservation of mangrove forests.



On Earth Day, the famous actor Mr. Wang Kai participated in *Taobao Story Cans*.



The Eco Art Market



New peripheral product: A bucket hat made of "garbage".

Major Achievements

Key Result 1 Expanding the cooperation way with celebrities for better conveying the idea of wetland conservation

In March, in collaboration with Alibaba Philanthropy, we invited Mr. Wang Kai, the global ambassador of Saving Spoon-billed Sandpipers Project, to tell stories of spoon-billed sandpiper in Taobao Story Cans in the form of animated video and underground print ad. The campaign reached 39.745 million readers and became the "most searched hashtags" in Taobao APP.

On the World Environment Day, MCF linked with celebrities of STARMASTER via Sina Weibo, with a single session reaching a peak of 60,000 views.



Key Result 2 First trial of slow live streaming on TikTok with focus on urban biodiversity

During the World Earth Day and in other environmental protection events in 2021, the Guardian of Shenzhen Bay Project became a trending topic on multiple social media platforms. Fundraising campaign was conducted through short videos and live streaming broadcasts by popular science vloggers and celebrity guests.

After developing the strategic partnership with ByteDance, MCF increased its brand visibility on video platforms. "Futian Mangrove Ecological Park", the TikTok account of Futian Mangrove Ecological Park became one of MCF's first ByteDance accounts for its "Slow Live Streaming of Nature Reserves". The viewers for a single live broadcast reached to 14,000. At the same time, we deepened the cooperation with ByteDance to incubate our own accounts and accounts of original content creators.



Key Result 3 New attempts at "Fashion + Environmental" periphery, cooperation with multiple brands

Collaborating with HowBottle, a Benefit Corporation (B-Corp), MCF began to sell bucket hat made of 100% recycled material in its non-profit cybershop during the Taobao 11.11 Shopping Festival. The sales activity gained high recognition from the platform and donors, conveying the concept of MCF's values while raising funds. Stories about MCF's conservation efforts, conveyed by the bucket hat and told by science vloggers, were effectively spread, gaining over 100,000 reads.

At the same time, more well-known brands and companies have been linked to boost the brand of MCF through active promotion of peripheral products, thus, more diversified channel for cooperation engagement were created.



Outlook for 2022



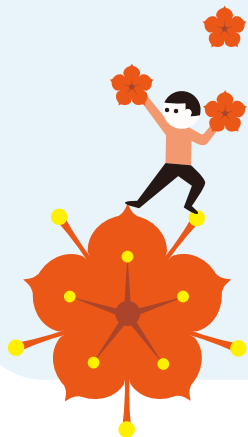
ZHAI Liu
Deputy Secretary General
of MCF

As we look back on 2021, the mid-term planning has become an important part of fundraising and branding as we reflect on and decode our strategy. The mid-term plan directs the course of our future work. As the Chinese saying goes, sharpening the axe will not delay the cutting of firewood. The planning process will assist the growth of fundraising and branding teams and serve as the prerequisite of taking actions and reaching long-term goals. Special thanks go to K2 Foundation, Ms. Wang Zhiyun; our fundraising mentor from Shanghai United Foundation; and Ms. Gu Jing, our branding mentor, for guiding us in professional thinking and supporting us to promote more scientific and effective planning.

2021 is also a pivotal year for MCF to boost its brand on video platforms. In the past, our nature conservation projects and environmental protection issues had a weak visibility on social media because of long logic lines, user alienation, low perceived quality and high understanding threshold. There are opportunities but also challenges for fundraising and branding. Over the past two years, driven by internal and external factors, we have actively explored ways to raise MCF's brand visibility on video platforms: visualizing project contents, diversifying scenarios, interacting in a timely manner and disseminating across sectors and channels via the Internet. Our reform not only enhanced the experience for followers and donors, but also effectively attracted cross-channel users through the Internet platform. In mid-2021, we received support from TikTok Nature Channel to run slow live streaming and shoot short videos about our daily conservation. Since then, our wetland conservation works and stories started getting known by more public. This has become a unique opportunity for us to follow the change of the times, bring people and wetlands closer together and expand the influence of the project.

Looking into 2022, two key words—consolidation and development, will be highlighted. We will consolidate our experience, products and networks accumulated in the past decade to deepen cooperation with our platform partners, supporters and followers. We will develop partnership with strategic associates to achieve following targets: 1) Against the backdrop of the "3060" dual-carbon goal, we will design strategic projects in collaboration with project teams and strive to build long-term strategic partnership with 1 or 2 major donors in 2022. 2) We will continue to work on our strategic goal—to increase monthly donors for "Mangrove Family". Donation and support are two driving forces for MCF to grow into a "100-year foundation". We look forward to working with you and reaching the goal of an increase of 1,000 monthly donors in 2022.

There is no mountain higher than a man's will and no road beyond the reach of foot. This is the confidence that each of our companions gives us, and it is the reason why we are working together.



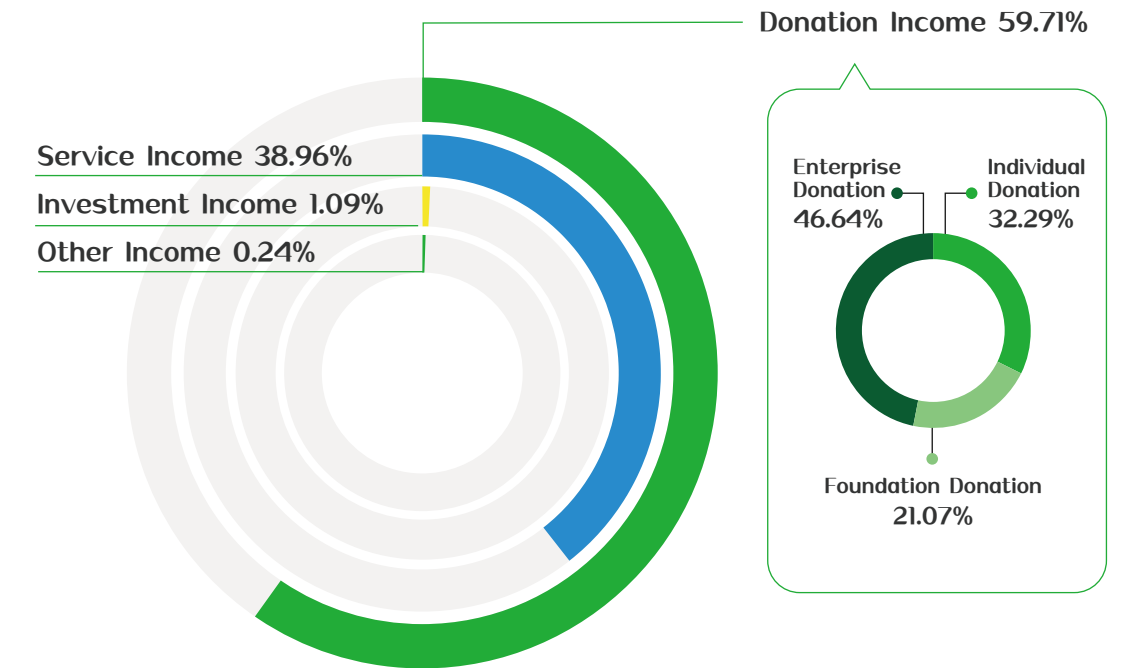
Financial Overview

Income and Expenditure

The following statistics are from the 2021 annual audit report of Shenzhen Mangrove Wetlands Conservation Foundation.

Income (unit: CNY)

Donation Income	20,779,265.03
Individual Donation	6,709,051.17
Foundation Enterprise Donation	4,378,386.46
Donation	9,691,827.40
Service Income	13,558,174.44
Investment Income	380,598.40
Other Income	82,231.53
Total Gains	34,800,269.40



Total Expenditure (unit: CNY)

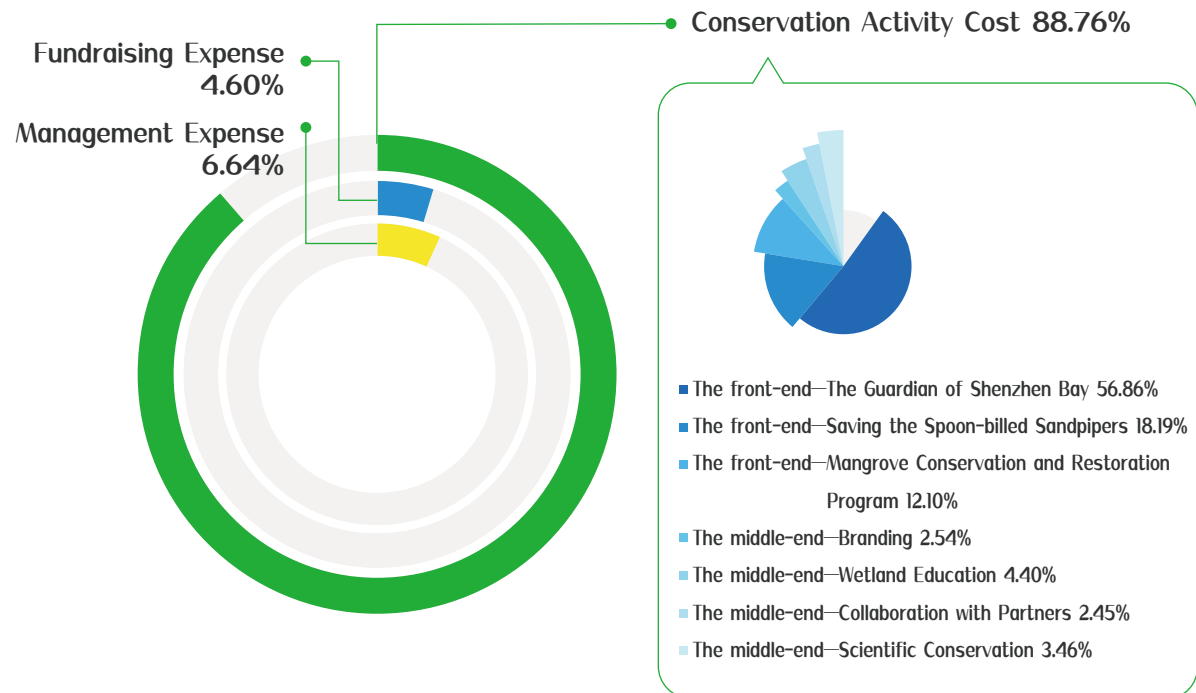
Conservation Activity Cost **29,030,789.29**

The front-end—The Guardian of Shenzhen Bay	16,506,472.01
The front-end—Saving the Spoon-billed Sandpipers	5,280,467.75
The front-end—Mangrove Conservation and Restoration Program	3,513,471.97
The middle-end—Branding	736,537.16
The middle-end—Wetland Education	1,276,429.93
The middle-end—Collaboration with Partners	711,297.60
The middle-end—Scientific Conservatio	1,006,112.87

Fundraising Expense **1,503,637.79**

Management Expense **2,170,814.14**

Total Expense **32,705,241.22**



Audit Report

Scan the following QR code for complete audit report.

“We are” Wetland Adorables!

Welcome our new member, Otter Shen!

We look forward to welcoming you as a new member of our mangrove family and to working together to protect our wetlands and environment!



Making monthly giving a habit! Donating monthly, become more connected with nature.

With your generous recurring donations, you will receive our member benefits, including:

Your membership benefits!

✓ Be honored as a member of the Mangrove Family.



Join our Mangrove Family, the community of donors, join our wetland conservation projects.

✓ Get your Welcome Pack.



The pack contains your monthly donor certificate, a Thank You Letter, and an exclusive badge for Mangrove Family member.

✓ Receive our Bimonthly Briefing.



6 issues per year to keep abreast of latest progress and information about wetland conservation projects.



✓ Receive our Annual Report.



The annual report keeps you informed about our conservation work, fundraising statistics and expenses in a year. The annual report will be issued once a year and sent by email.

✓ Receive monthly donation receipts.



Upon application, a donation receipt for the amount of the monthly donation can be issued, and can be used to claim deduction for individual income tax.

✓ Participate Monthly Donor Activities.



Monthly donors will be invited to participate in exclusive activities organized for the Mangrove Family, such as conservation experience, public research or visit project sites.



Monthly Giving FAQ

Q: How does the monthly auto-pay work?

A: Monthly auto-pay is a safe, reliable and consistent donation. Our monthly giving deduction program is an official partnership with WeChat Pay. You can stop donating as needed.

Q: Where does the monthly giving go?

A: Monthly giving is an unrestricted gift, the fund collected will be used to support conservation projects running by MCF, including:

- coastal wetlands conservation and endangered migratory bird protection;
- wetland conservation research;
- public nature education.

Bank account: Shenzhen Mangrove Wetlands Conservation Foundation

Bank account number: 755919086410701

Opening bank: Shenzhen Branch, China Merchants Bank



100% Recycle Paper

MCF's Sina Weibo Account

@MCF @Futian Mangrove Ecological Park @Spoon-billed Sandpiper Conservation Alliance



Wechat Official Account of MCF



Wechat Official Account of Futian Mangrove Ecological Park



Scan to follow us on Tiktok



Scan to follow MCF on Wechat Channels

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