



*Work
hard
to make Taiwan better*

2020 ANNUAL REPORT



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Work hard to make Taiwan better

At the beginning of 2020, the homophony of loving you has been used all the time.
In 2020, Maybe God is testing us. How can we cherish our land, family and friends?
In 2020, tests will emerge one after another.

Forest fires have destroyed many habitats in Australia, the Amazon, and California. Examples of these disasters include, haze, climate change, soil and water conservation. These hazards have continued to influence the environment one after another. There have been many locust plagues occurring because of the unequal distribution of rainfall, in East Africa and spreading to the Middle East and then to South Asia. This phenomenon has destroyed farmers' crops and resulted in serious food shortage.

Heavy rains and floods are often caused by typhoons (or hurricanes) and plum rain. Increased rain poured in a short period of time cannot be discharged soon enough. This results in flooding and poor harvest and many people lose their homes and property.

The outbreak of COVID-19, due to the epidemic prevention gap around the world, has caused about 50 million diagnosed cases and 1.2 million people lost their lives. The pandemic is like a catastrophe, depriving people's freedom of travel, gatherings and study.

Good weather and peace for the country are the words to pray to God during the Chinese New Year.

The practice of good weather and national peace requires us to pay more attention to the environment and coexist and prosper with other biological energy.

The challenge of 2020, we will surely pass it through smoothly, if we work together.

The test of 2020, If we work together, things will surely go smoothly.

The challenge of 2020, if everyone cares more for the earth, there will be less uncontrollable locust plagues, fires and floods in the future.

The test of 2020, If we can cherish the land more, there may not be such uncontrollable locusts, fires and floods in the future.

The challenges of 2020 made us more aware of the importance of protecting everyone with a little bit of inconvenience.

The test of 2020, will make everyone more aware of the importance of safety for all despite any inconveniences.

2020 was a year full of ups and downs, calamities and disasters.

2020 was a year that we stuck to our posts and strived to protect the environment, despite the hardships,

Despite the hardships of 2020, if we will still stick to our posts and we can still strive to protect the environment.

From cleanup to walking expeditions on the coast, the riverbank and the mountains, every volunteer is working hard on environmental education and habitat protection. Because they know every effort is to guard the beautiful nature of Taiwan. So that future generations can inherit and enjoy the beautiful island with us.

The Society of Wilderness (hereafter referred to as SOW) has been striving persistently all the time. It's our dream to see all Taiwanese people work hand in hand to build a more beautiful Taiwan for the future.



Chairman
Yueh Mei Liu

Introduction of SOW

Society of Wilderness (SOW) was founded on June 25, 1995 with the purpose of conserving Taiwan's natural ecology and environment through education and habitat protection. Headquartered in Taipei, we have eleven chapters across Taiwan, one chapter preparatory office, nine liaison offices, five SOW partners overseas, and more than 20,000 current civilian members who are committed to environmental protection.

Purpose of SOW

SOW acquires legal guardianship and management rights of waste lands through purchases, leases, commissions or donations, with the intent of protecting habitats and letting Mother Nature repair damaged lands while restoring the vitality within them. By doing so, future generations will have the opportunity to explore the mystery of nature as well as the meaning of life.

Mission of SOW

- ★ Preserve natural species in Taiwan.
- ★ Allow natural succession in the wilderness.
- ★ Promote ecological conservation.
- ★ Provide opportunities of ecological education for the public.
- ★ Assist the government with water/soil preservation and natural resources protection.
- ★ Develop talent in ecological conservation.

Committees and Task Forces

- ☆ Interpreter Education Committee
- ☆ Promotion Education Committee
- ☆ Family Education Committee
- ☆ Children's Education Committee
- ☆ Habitat Work Committee
- ☆ Research & Development Committee
- ☆ International Affairs Committee
- ☆ Local Care and Guardian Committee
- ☆ Climate Change Education Committee
- ☆ Green Life Map Development Task Force
- ☆ Special Education Task Force
- ☆ Nature Center Development Task Force
- ☆ Aboriginal Task Force



In-Situ Conservation and Education Promotion Plan of Shuanglianpi Endangered Plants

Shuanglianpi is recognized as a nationally important wetland as well as a wildlife sanctuary. Shuanglianpi has a rich diversity of animals and plants in the surrounding area of the pool. Related survey in the 1980s recorded nearly one-third of Taiwan's aquatic plants grown in the pool, making the pool once regarded as a paradise for aquatic plants. However, at the beginning of 2000, more than 90% of the aquatic plants in the area disappeared due to man-made development. The Society of Wilderness has been carrying out habitat protection in this area more than a decade, hoping to reserve more natural resources for future generations. In 2019, the Shuanglianpi Ecological Classroom submitted the "In-Situ Conservation and Education Promotion Plan of Shuanglianpi Endangered Plants" to the Green Award and was recognized by the 4th Green Award "Large-scale Ecological Conservation Project Grant". The plan aims to protect those endangered plants through the efforts of conservation and restoration. In addition, Society of Wilderness hopes to increase public awareness about the endangered plants in Shuanglianpi and educate the public on how to protect and conserve the species.



This plan has three main purposes. Firstly, SOW hopes to conserve endangered plants through the establishment of conservation pools. Additionally will conduct surveys on the distribution of endangered plants in order to monitor the progress. Secondly, SOW will set up micro-weather stations for the subsequent in-situ conservation of endangered plants to monitor the light, air temperature, humidity, and rainfall of the microhabitats. These micro-weather stations will also be able to compare the growth status of plants to clarify the environmental conditions required for plant growth. Lastly, SOW plans on hosting conservation volunteer training and working holidays for the public to learn about the characteristics of endangered plants. These events will allow the public to directly participate in conservation actions.

Twenty-two plants have been selected for protection after reviewing the past investigation. At present, the provenance of 19 species have been found and 16 species are transferred to refuge for conservation. This includes three critically endangered plants (CR), 3 endangered plants (EN) and 4 vulnerable plants (VU). Regarding environmental factors, currently one-year continuous monitoring data of air temperature and humidity, luminosity, rainfall, and water temperature have been collected. In addition, handheld meters are used to record dissolved oxygen levels, electrical conductivity, and pH values. The current plan is to host one volunteer training and three working holidays. At present, two sessions of volunteer training has been implemented with 19 trainees completing the training, and a total of 86 attendants. The volunteers participated in work to restore the pool and endangered plants during 5 working holidays.





Tracing the source of marine debris, starting from the river

The ocean provides life to the earth, including humans. However, the ocean continues to be exploited and destroyed by humans every day.

A few examples of human impact on the ocean include, overfishing, global warming (which has greatly increased the area of coral bleaching), untreated household sewage, and discharge industrial waste water into the environment. All of these phenomena have contributed to ocean pollution. Furthermore, the problem of marine debris has increased global concern in recent years. "Marine debris" is a major issue that SOW continuously focuses on. Through environmental protection and education, SOW strives to help the public connect with the environment and learn more about the source of marine debris.

Taiwan has very limited knowledge of the main causes of marine debris, and no one has yet conducted a survey on the distribution of river debris. Until 2019 when SOW organized the "River Debris Survey Workshop" inviting Japanese experts to share their experience and develop practical survey methods for citizen scientists to meet the needs of Taiwan.

In 2020, in order to implement the "Fast Screening Project for Debris in Danshui River Basin", a proposal was submitted to the Marine Conservation Department (2020 Marine Conservation Localized Protection Project). 15 investigators rode bicycles or walked on the river banks to complete the survey on both sides of the Danshui River (242 kilometers in total), and the coasts on the estuary (40 kilometers in total), with a total length of 282 kilometers, which is also a rarely large-scale survey done by citizen scientists in Taiwan.

According to the "composition" comparison, the survey results showed that the debris in the Danshui River basin were mainly plastic bags, plastic bottles or cans, and disposable tableware. This discovery was consistent with the composition of coastal debris. As river debris is easily washed into the ocean by heavy rains, it is a leading cause of marine pollution. At least 12,988 bags (approximately 181,825 liters) of debris were analyzed, it was found that 90% (approximately 12,000 bags, 14 liters per bag) was identified along 9% (approximately 22 kilometers long) of the river, and less debris (about 988 bags) was found in the remaining 82% of the river. In conclusion, once 22 kilometers (9%) of the debris hotspots are cleaned up, 90% of the waste in the Danshui River can be removed. These statistics can be beneficial and cost saving for the cleaning squad to update their budget.



"Who is the perpetrator?" Give me back the beach where I used to run in barefoot

According to statistics from the "Love Sea Travel" website, which records the categories and quantities of marine debris in the International Coastal Cleanup (ICC). In 2020, 218 batches of coastal cleanup data was collected, and a total of 15,068 participants cleaned up the 54,840 meter long coastline and removed 31,318.77 kg of debris. According to the statistics, the top 10 categories of trash items collected were: PET bottles, plastic bottle caps, cigarette butts, plastic straws, plastic bags, disposable tableware, fishing floats, glass bottles, take-away beverage cups, and fishing nets. The fishing nets accounted for nearly 80% of the total debris collected. If classified by material, it is estimated that more than 90% of marine debris is made of plastic, and nearly 70% is a single-used waste products related to food and beverage.

This year, aside from categorizing marine debris, "Love Sea Travel" website also analyzes hazardous debris, including glass bottles, iron and aluminum cans, fish hooks and syringe needles, etc. Furthermore, every beach analyzed was ranked by a simplified safety system called. "Beach Safety Classification." The system is based on the average quantity of hazardous marine debris per 10 meters long of each beach. It divides safety of the beach into five levels from A to E. If the beach has zero hazardous marine debris it is classified as level A. On the other side of the spectrum, beaches that have more than 20 products of hazardous marine debris every 10 meters are identified as level E.

According to the statistics recorded, the beaches in New Taipei, Taichung, Kaohsiung, Tainan, and Penghu are highly hazardous. There are at least one or two beaches falling into the most hazardous level - E. Among them, Longdong Bay in New Taipei City contains an astonishing 44 hazardous items per 10 meters on average. Longdong Bay is identified as the most hazardous beach among 76 coastal-cleanup areas. The "Beach Safety Classification" map not only provides the public with a reference for safe beach recreation, but it also intends to suggest to the public sector how to start paying attention to the impact of these marine debris and take action to reform the messy image of beaches. Only with clean and safe beaches can our next generation feel at ease to step on the beach, and know the ocean better to embrace it.





What Happened to the Alluvial Fan in Taitung Zhiben Wetland?

The Zhiben Wetland is a flooded area formed by the confluence of the Zhiben River and Shemagan River. It is a private spot for Taitung residents to relax and fish. This region is also a traditional territory of the Puyuma Kadadibu tribe.

In 2018, the Taitung County Government planned to develop a large-scale photovoltaic power plant in the Zhiben Wetland, setting up 226 hectares of solar PV farm, including 161 hectares of PV panel area. That is equivalent to the size of 6 Da'an Forest Parks and fully covers the terrestrial area of the estuary.

The Zhiben Wetland may seem inconspicuous, but it has a rare landscape of mouthless river in Taiwan and is also the largest grassy marsh wetland in the eastern Taiwan. The wetland exhibits grassy marsh, coastal forests, shrubs, grasslands, beaches, springs and other diversified landscapes. It forms an integral habitat space stretching from the shallow mountains to the estuary.

Furthermore, a total of 55 families and 213 species of birds have been recorded in the wetland area (87 families and 674 species in total across Taiwan). There are 33 species of threatened birds recorded in the Taiwan Red Book of Birds and 51 protected species. Including 3 endangered species: Grass Owl, Oriental Stork, and Peregrine Falcon. This region hosts 39 rare and vulnerable species, and 9 conservation-deserving species. For example, the native spider: *Latrodectus elegans* spider, the vulnerable Taitung Fire Thorn, and the rare plants such as *Rosa bracteata* Wendl, Mosquito Wormwood, and Skyblue Broom-rape. These species are considered hidden gems in the area.

Appeals of the Society of Wilderness:

1. Solar PV farm site selection should avoid ecological hotspots: The decision to build a solar PV farm in Zhiben Wetland is controversial, and the ecological value of the site should be reassessed.

2. Re-examine the approved power industry permit: The Zhiben Solar farm is a false example of green energy sacrificing the ecology, which has caused litigation and controversy. We strongly urge the Ministry of Economic Affairs to revoke the approved electrical power industry permit and reassess.

3. Before the controversy is resolved, the review of land use changes should be suspended: Not only did the Taitung County Government not consult with the Indigenous tribe, they also did not carry out an ecological survey before putting out open tender, which has caused many disputes today. We strongly demand the Ministry of the Interior to postpone the review of land use changes before the dispute is resolved.





"Do one thing for Danshui River" CSR@CommonWealth

The issues of Taiwan's rivers are very complex. For example, the tug of war between upstream land development and water soil conservation, public water intake and private use for aquaculture and agriculture in the middle and upper reaches and the waste in the downstream and sewage entering the river. All of these have a significant impact on the baseflow, the ecology of rivers and living quality of the residents. These issues are increased by the "overuse of concrete" caused by stream improvement projects, and "grabbing land from rivers" due to development in metropolitan areas. Society of Wilderness (SOW) has been striving to increase the public awareness and attention of "ecological rivers" by means of interpretation and guided tours to supervision, adoption and management, facilitating stream-related activities or ecological surveys in various places. All of these efforts have been successively implemented and SOW is hoping to attract the attention of the public to educate people of the severity of this matter.

CSR@Commonwealth recognized that both Commonwealth and SOW share the common values. Therefore, was invited to partner on the "Ecological Danshui River" project and provide insight on how to improve the process. In addition, CSR@Commonwealth also collaborated with corporates and other NGOs to jointly advocate for the "Do one Thing for Danshui River" event. Experts and scholars on the topic were invited to analyze the various problems in the river base and explore solutions. These experts and scholars published their findings on the internet to promote the importance and necessity of river protection.

Protecting the Habitat and Marching Forward Steadily

Looking back on 2020, Society of Wilderness continued implementing protection actions throughout Taiwan, including undertaking ecological habitats records and surveys on Taiwan's special species. While monitoring these special species, SOW has also been removing invasive species and promoting environmental education programs. In 2020, SOW paid close attention to 76 habitats nationwide, including conserving leased land in 52-jia Wetland, and Youlutan; signing a memorandum of cooperation for Yongchunpi Wetland Park...etc. Under the challenge of the COVID-19 pandemic, the results of the biological survey, City Nature Challenge (CNC) did not receive the expected outcome. However, due to the proper control of the pandemic, Taiwan has achieved good results in the survey. Through an infrared camera installed in the "SOW's No. 1 Land", SOW has recorded crab-eating mongoose, Formosan yellow-throated marten and more. This has proved that as long as the habitat environment is well protected, all wild life can multiply naturally.



Leased Land Conservation and Friendly Farming: 52-Jia Wetland

The 52-Jia Wetland is now classified as "National Important Wetland" and used to be the old channel of the Dongshan River in Yilan County. Due to the low-lying terrain, with the Northeast monsoon carrying a large amount of moisture in autumns and winters, and typhoons frequently hit in summer, Yilan is constantly flooded. Leading to underground springs and perennial water accumulates year-round, and the soil contains a lot of organic matter and trace elements. Therefore, Yilan owns a fairly good paddy field environment and wetland ecology, attracting a large number of migratory birds to rest here every winter.

Ninety percent of the wetland is privately owned. According to a local species survey, there are more than 228 bird species. The wetland is also the original home to Taiwan's rare plants: the hundred-year-old Buttonbush (*Cephalanthus naucleoides*) and the Small-leaved Barringtonia (*Barringtonia racemosa*). SOW hopes to protect the habitat through promoting friendly rice farming and environmental education activities. This year, the area of friendly farming paddy fields has expanded to 1.76 hectare. A total of 22 activities for the public were conducted, including 19 nature experiences and 4 working holidays. The total attendance was 629, with 3 volunteer training sessions and 79 volunteers participating. There were 14 fixed-point survey activities with 69 attendance.



Land Purchase and Protection: Management and Follow-up of SOW's No. 1 Land

Ecological surveys in "SOW's No. 1 Land," continue every month by 45 fellows participating this year. A total of 4,071 biological records and 791 species (including 423 insects, 204 plants and 76 arachnids) were recorded. This year, it was SOW's first time to record with an infrared automatic camera. With this technology SOW was able to discover Formosan yellow-throated marten, crab-eating mongoose (which is a protected species), Formosan Gem-faced Civet, Formosan ferret-badger, civet, and Swinhoe's Pheasant (which were thought to only appear at mid-altitude mountains). The camera has also spotted Taiwanese Macaques, Wild boars, Red-bellied Squirrel, and Emerald Dove which often come here for food and rest. Through occasional visits, exchanges and educational activities hosted in "SOW's No. 1 Land." SOW strives to increase public awareness on the mission and purpose of "Land Purchase and Protection" and expects to obtain the "SOW's No. 2 Land" soon.



Habitat Construction: Wugu Wetland Waterbird Batture

The Wugu Wetland is an important wintering stop for waterbirds in northern Taiwan. In recent years, the batture area for waders to rest and forage in the Danshui river basin has been reduced and guests from afar face the predicament of nowhere to rest. In order to improve this situation, SOW cooperated with the New Taipei City High Riverbank Construction Management Office to carry out habitat construction projects. This year, SOW chose to build a new habitat on the shore of the ecological pool. However, due to inflow water reduction the water volume was barely enough to use. Additionally, the seeds of reeds, salt grass and other plants on the shore entered the bare batture, and produced numerous seedlings which required massive manpower to remove these plants. Plant removal was important to prevent the battures from turning into grassland and to reserve more area for waterbirds to use.





Species conservation: helping frogs cross the road

October is the mating season for the Sauter's brown frogs in Dashanbei, Hengshan Township, Hsinchu County. In recent years, the over-development of mountain forests, roads, water ditches, stream improvement projects, and private housing on the land, have significantly deteriorated the natural habitat and caused the frog population to decline year by year. Since 2009, the annual "Help the Frogs Cross the Road" activity has never ceased its work. A total of 7 sessions of frog protection volunteer training have been implemented. 7,506 volunteers have been mobilized to help a total of 16,282 Sauter's Brown Frogs crossing the road safely. In addition to protecting the frogs in the mountains in October each year, SOW volunteers also visit schools and markets to share stories of Sauter's Brown Frogs and promote the event. SOW also conducts regular frog surveys in the frog protection area. These efforts have led to the discovery of the long-lost Green pond frog (*Pelophylax fukienensis*). The efforts have continued and accumulated for more than ten years and finally attracted broad attention from all walks of life. SOW hopes to add more special features of the "Help the Frogs Cross the Road," event and make it a localized protection action.

Species Conservation: Carnivorous Plants Conservation Research

The "Carnivorous Plant Conservation Research Project," was implemented in the Zhubei Lotus Temple and Hualien areas this year. The Hualien Chapter undertook the investigation and maintenance work of carnivorous plant habitat in the Hualien area commissioned by the Forest Management Office. Through the training of volunteers and citizen scientists, as well as cooperation with experts and scholars, it was confirmed that Hualien currently has 4 species of Carnivorous plants distributed in 48 places. The team has also conducted comprehensive measurements of the microclimate, soil texture, soil physical and chemical properties of the carnivorous plant habitat. In the future, if the survival of these plants is in crisis, there will be sufficient basic data to formulate conservation strategies. The focus of this year's work at Zhubei Lotus Temple is to artificially propagate the rare plants by preserved seeds and plant them back to the original habitats (*Drosera indica* L., *Spathulate Sundew*, *Xyris formosana* Hayata, *Common Philodrum*, and *Juncus ohwianus* Kao). SOW is glad to see some initial achievement, and related rehabilitation work will continue next year. In terms of environmental education, SOW has organized carnivorous plant training courses, and continued carrying out the Taiwan carnivorous plant tour exhibition. The plant tour exhibition was held in 2018 and 2019 and resulted in 12 schools in 2020.



Species Conservation: Mortonagrion Hirosei Ashahina

After the IUCN Endangered Species, Mortonagrion Hirosei Ashahina was discovered in Wugu Wetland in 2005, SOW has been paying close attention to the tiny species in the riparian wetland. In the past 15 years, the wetland has been undergoing water gate repairs, wetland terrestrialization and habitat destruction. The survival of Mortonagrion Hirosei Ashahina is threatened because it requires a humid environment with a certain height and density of plant distribution. The plant species lives so close to human residential areas but no one is concerned. The volunteer team continued to carry out Mortonagrion Hirosei Ashahina survey tasks and completed 170 environmental education working holidays. The volunteer team also went on accumulating data of the species population to increase the public awareness on the species protection. After years of hard work of SOW fellows, the Hydraulic Engineering Office of the Taipei City Government finally set up the old Shuangxi Environmental Education Center in Huangang Creek this year and re-adjusted the restoration pool for Mortonagrion Hirosei Ashahina. This place will be used as a base for environmental education and species protection in the future.



Species Conservation: Advocacy and Designation of Seasonal Protection Zone for Waterbirds in Breeding Season

The peak seasons of waterbird breeding are from April to June in the north of Taiwan, and March to May in the south. The beach during the season is one of the places where waterbirds, mainly Kentish plover, Little ringed plover, and Little tern, choose to breed. However, this period coincides with coastal cleanup activities across the island. The frequent beach activities have become the main reason for disturbing Waterbird breeding and brooding.



To solve this problem, in addition to vigorously encouraging the adjustment of coastal cleanup schedule hosted by different parties, SOW has set up the "Protecting life and Coastal cleanup Advocacy" webpage on the official website. The purpose of this webpage is to urge beach goers to love the ocean and be friendly to other creatures living on the beach. While undergoing cleanup, it is suggested that people should pay attention to the needs of these creatures and actively avoid the "waterbird breeding season" for beach activities.

Species Conservation: Taipei Frog Microhabitat Construction

In 2018, the habitat volunteers of Fuyang Natural Ecological Park started to create a microhabitat for Taipei frogs. The monitor data showed that in recent years, Taipei tree frogs only appeared in the breeding season from October to February of the following year. In the past, this frog species used to be seen at any time of the year when the park was opened in 2006. Therefore, in December 2019, the team



started to record the frequency of Taipei tree frogs' use of the restored habitats. The results found that the Taipei tree frog appeared in July, a non-breeding season this year. Regarding invasive species prevention and control, the invasive species, spot-legged tree frog, was first spotted in the park in 2015. More than 60 frogs were found in May 2020. In addition to inviting the frog expert Dr. Yang Yiru to demonstrate how to catch Spot-legged tree frogs, a four-week invasive species control program was urgently activated. A total of 109 Spot-legged tree frogs were caught in the first week, 57 frogs in the second week, 51 frogs in the third week, and 27 frogs in the fourth week. A total of 244 were removed during the stage. Two months later, 25 frogs were spotted and removed, the population decreased significantly afterwards. In the future, sound traps will be also used to help continue to monitor and remove spot-legged tree frogs.

Habitat Survey: The City Nature Challenge

The "City Nature Challenge" held in every April is a global citizen scientist activity with iNaturalist used as the platform. This event encourages everyone to observe and record surrounding natural creatures. This year, 246 cities/regions from 40 countries participated.



SOW organized fellows from 6 regions of Taiwan, including 13 counties to participate. The total observations worldwide exceeded 810,000 records which cover over 32,500 species by 41,165 participants. Among them, 39,584 records of 4,077 species were submitted by 1,107 participants in Taiwan. The number of records in several Taiwan regions is among the best in the world, ranking 16th in Northern Taiwan and 17th in Chiayi. The number of species on record ranking 13th in Northern Taiwan and 15th in Chiayi. The above results demonstrate the rich biodiversity of Taiwan.

Marine Habitat: Mao'ao Bay Protection

A letter from Mao'ao in 2019, brought to the surface the complex issues of "Land Justice and Housing Rights," in the easternmost point of Taiwan. Due to the local residents of Mao'ao Bay lack of experience in protest, SOW and Environmental Rights Foundation helped them to conduct two press conferences to oppose the construction of a yacht terminal. This gave the isolated and helpless "Magang and Mao'ao Self-Help Association," a powerful support system. In the press conference on July 25, all the petitions were successfully submitted to the Legislative Yuan and a decision of "Not Execute" was granted. However, it does not mean



the case has been canceled. This movement still requires continuous attention from the public. The local residents set up "New Taipei City Sandiaojiao Cultural Development Association," to continue monitoring the issue of "Land and Housing Justice closely." SOW sincerely hopes that the community will be more united and incorporate ecological sustainability and fishing village characteristics. In this way, the precious culture of the fishing village and the marine environment can be sustained.





SOW Nature Centers, diligently and pragmatically protect the environment

SOW has established several efforts to make it easy for the general public to “get close to nature and understand nature.” For example, nature centers operated by each SOW chapter, guided tours conducted by “fixed-spot interpretive group” accessible to the public to apply. SOW has also set up centers in various places such as classrooms, centers, bases or parks, and has developed localized educational programs for promoting actions proficiently in response to local needs. The achievements of each center will be summarized in the following paragraphs. Due to the increased demand for environmental education, SOW successively collaborated with the public sector and enterprises to establish accessible nature centers to host environmental education activities and promote environmental protection for the general public.

Wanli Wetland Education Center

The center has been conducting long-term protection, restoration and environmental education to preserve Taiwan's native aquatic plants. It has been hosting for more than 10 working holidays every year, with more than 200 participants. According to the census, the center stably shelters at least 50 families and 135 species of aquatic plants. Including 7 endemic species (Isoetes taiwanensis, Kusano Willow, Water Willow, Yellow Water Lily, Ludwigia Taiwanensis, Da-Ann Hygrophylla, and Common Water-hawthorn). This year, in order

to reproduce the carnivorous plants growing on rock walls, the SOW team attempted to convert some large rocks into seepage rock walls to increase the diversity of landscape. SOW has been working holiday activities in the park not only to help sustain the daily maintenance of the park, but to also lead the public to get close with aquatic plants to further understand the importance of wetlands as well as the coexistence of the ecological environment.

Wugu Wetland Ecological Park

Since SOW adopted Wugu Wetland (approximately 170 hectares), it has started environmental protection work in different aspects, including ecological survey, habitat restoration, maintenance, and various environmental education programs. There has also been an increase in patrolling and reporting of illegal incidents. This year, SOW collaborated with TIIWE to expand the scope of ecological surveys to audit the biological resources in the wetland. SOW continued the monthly bird and plant surveys as well as set up infrared automatic cameras to track weasels and worked with Bat Conservation Society of Taipei for the third year to identify bat species. Furthermore, additional quarterly insect surveys (for Lepidoptera and Odonata) and amphibians and reptiles were conducted to improve the mastery of the list and distribution of Wugu wetland species. In terms of habitat restoration, SOW focuses on the monitoring and removal of invasive species, like Mikania micrantha, and we invite the public to participate at least one working holiday a month. The "waterbird batture" area is shrinking because of reduced



water sources. Currently, those battures with sufficient water sources are maintained to ensure there are sufficient areas for waterbirds to spend their winter. In terms of environmental education, there are at least 10 interpretive and guided activities every year, and the large-scale "Summer Swallow Season" event has been organized 6 times, attracting about 1,252 people to participate.





Mangrove Ecological Education Center

Located in the Greater Taipei area, the Mangrove Ecological Education center is adjacent to the mangrove nature reserve with the largest area of 76 hectares in Northern Taiwan. Since 2019, the Luodong Forest District Office of the Forestry Bureau has commissioned SOW to manage and maintain the area, which has become one of the important bases to promote the vision of ecological Danshui River. The center aims to guide the general public to

recognize the animals and plants of the mangrove wetland as well as to promote the concept of ecological conservation. This has been advertized by hosting 50 interpretive activities and 35 environmental education courses, participating in 3 nature fairs, accumulating over 10,000 visitors in the center, resulting in reaching 14,000 people. In 2020, the center conducted land crab protection operations for the first time, including 3 land crab training courses and 20 land crab ecology and roadkill surveys. 43 nearby residents were recruited to be citizen scientists to explore the living habits of land crabs in freshwater estuaries. This event is expected to continue next year and will expand to Zhuwei, Bali and other areas. The hope is to attract more people's attention to the issues of land crabs in the freshwater estuary, and to urge the public sector to set up warning signs as well as land crab ecological corridors.

Youluotian Eco-friendly Farming Base

Since 2013, the Youluotian Eco-friendly Farming Base has allocated 0.8 hectare as paddy fields (growing rice and dry farming) and 0.4 hectares for dryland farming (growing



vegetables). The basis persists with eco-friendly farming and leads more people to learn how to coexist with other creatures and treat the land well. This year, the farming school was opened and taught people how to grow peanuts, sweet potatoes, rice, and potatoes. A total of 16 families have participated in the whole process from seedling, planting to harvesting. The 13th "Vegetable Seeds Class" was launched to increase the vitality of the base. In addition to the monthly working holidays, it also hosted 6 DIY activities, using agricultural products or natural objects as material, wild ginger flower and leaf weaving, wild herb cooking, and solitary bee honeycomb making to enjoy the fun of hands-on activities. Furthermore, it started collaborating with the Bureau of Chemistry to promote "Banned Herbicides on Non-agricultural Land", and has completed 2 sessions of "Wild Herb Application Camp," and 3 lectures on "Banning the use of Herbicides", this process has been compiled and printed as "Youluotian Wild Herbs Notebook".



Namaxia Utung Nature Classroom

The Namaxia Utung Nature Classroom has entered its 13th year since 2008. The main structure and most of the external walls of the building have been smoothed and painted. This year, although the participation rate dropped due to the COVID-19 pandemic, the team managed to complete the work of internal wall smoothing, painting and floor primer. For seven consecutive years, the team has conducted "Life Education Courses" in Namaxia Junior High School. The students are led by the elders in the tribe to explore their own ecological environment and experience the natural lifestyle. Although there is still a long way to go before the completion of "house construction," the volunteers who participated in the construction of the house experience simple life by taking part in working holidays. When they experience nature through observing natural life in this classroom, they have actually begun to feel and learn from nature.





Shuanglianpi Environmental Education Base

The Shuanglianpi Ecological Classroom takes "Wetland Conservation School " as its purpose and calls for protecting the country's important wetlands. The base has hosted 17 habitat restoration working holidays to repair the wetland environment and preserve the habitat of native species in the sanctuary. Through these processes, the hope is to gradually allow the native species that once lost their homes due to human activities in the past to return to Shuanglianpi. The base also collaborates with local residents to build ecological pools on private farmland to accommodate native species and enrich farmland ecology. Priority is given to sheltering the targeted 26 native plants, only one species has not yet found the provenance. The wetland environmental education and promotion programs including off-campus teaching, environmental camps, thematic teaching, seminars, service learning holidays and other diverse courses amount to a total 257 sessions and 5,612 participants. These sessions promoted eco-friendly farming on the 1-hectare land through contracted farming, farming experience fields, and farming therapy for the disadvantaged. By hosting working holidays, food education activities and other courses, the base strives to convert the outskirt farmland toward an environmentally friendly direction. Aside from giving back to the sponsors, part of the harvest is also given to the local disadvantaged students and underprivileged groups to provide hope to those in need through eco-friendly farming products.

Xiaoyeliu Nature Classroom

In 2020, a professional team stationed in Xiaoyeliu Nature Classroom and their expertise were used to optimize the existing environmental education courses. In view of the need for alternative venues for rainy days and increasing the diversity of courses, the team developed two sets of teaching modules. The modules consist of paper-craft shoes - home of hermit crabs, coastal cleanup, and hand-made DIY - painted snail shells. The DIY sessions had added richness to the course. This year, 842 events were conducted and had 10,964 visitors and participants. In order to comply with the policy of the East Coast National Scenic



Area Administration, the team assisted in the formulation of the "Xiaoyeliu Day and Night Environmental Education Course Fees" in March, to transform the "Visit Xiaoyeliu at Night" activity. All courses and activities in the future will be implemented in accordance with the user pay principle. In order to reduce the environmental load of night activities, the total number of participants has a limit of 150 per day.

Chenggong Marine Environment Classroom

The Chenggong Marine Environment Classroom, located on the pier of the Hsingang district of Chenggong Fishing Port, was commissioned by the East Coast National Scenic Area Administration and operated in 2020. The main task is to introduce Chenggong fishery culture and acknowledge whales and dolphins for the public to understand the importance of marine ecological conservation. This year, a total of 21 groups have been served, and 482 people have completed guided tours and courses. Aside from guided tours in the center, two new courses have been introduced to increase the breadth of courses: "Sustainable Seafood Course" and "Cetacean Ecological Course". These two courses integrated the local culture and marine sustainability issues so the public can understand the impact of different commercial

fishing methods. The courses are also complemented with the "five-star seafood pot" fishing activity to teach the public to choose the right catch. The cetacean ecology course introduces whales and dolphins as well as fish-related knowledge to promote the concept of cetacean conservation, and combines paper art DIY to make the activity more interactive.



SOW is very blessed to receive support from selfless volunteers who strive to convey SOW's core values with pride. Looking back the past 25 years, SOW has never given up any potential opportunities to implement environmental education and habitat protection movements. 25 years of history is considered young to most people, but SOW's operation is gaining more and more experience/maturity. Being young does not mean lacking capability or responsibility.

SOW regularly hosts weekly, bi-weekly or monthly indoor lectures and volunteer training. In addition, SOW actively contacts schools for the permission to conduct lectures and environmental education programs in schools. SOW even conducts film festivals to promote the initiatives by sharing outstanding documentaries to constantly refresh people's views on the world, life and values; and enhance the understandings of the environment. Furthermore, SOW has held a variety of special activities led by voluntary docents or instructors. These events include nature walks and outdoor experiences at children's camps, parent-child education tours, nature observation classes for both day and night, working holidays, etc. The purpose of these programs is to guide people to appreciate nature step by step, and gain inspiration by lowering the entry barrier for the public to experience nature and biodiversity. These are the numerous potential opportunities for environmental education to touch people's hearts. Aside from training volunteers for different functions, SOW also conducts re-training, consensus camps, advanced training and joint training, etc. These

The SOW's Culture – Thriving together with The Earth



training opportunities will further strengthen the core values of environmental education and expand SOW's voluntary force. All of these work efforts create synergistic possibilities for environmental education.

An example of thriving together means: "Everyone does the right thing in the right way, and gets the right reward." Nature gives us all kinds of inspiration and positive feedback. It is a great reward and the most fascinating part of volunteering. Although SOW doesn't provide free lunches, fancy volunteer uniforms, nor year-end reward outings for volunteers, everyone is still passionate to achieve their common goals!

When it comes to thriving together, many people may associate it with the story of squirrels, beavers and wild geese.

When it comes to mutual friendship, everyone will directly think of the stories of squirrels, beavers and wild geese.

Taking squirrels as a role model - "importance, leading people towards a common goal, and value-driven": the core value of SOW is stated in the purpose of "obtaining the stewardship and management rights of the wilderness land through purchase, long-term lease, acceptance of commission or donation to protect and let nature manage itself as much as possible, and restore the vitality. We and future generations can continue to discover the mysteries of nature and realize the meaning of life from the deliberately preserved wilderness of Taiwan." Therefore, we have a very clear and common goal.

Taking squirrels as role models, they exemplify the importance of leading people towards a common goal and are very goal oriented. SOW's core value states that the purpose of "obtaining the stewardship and management rights of the wilderness should be considered a purchase. For example, taking care of nature is like signing a long-term lease. It is important to recognize that we must protect the environment like it is our own home, because it is. It is necessary to donate resources to protect nature and let it manage itself to restore the vitality. It is the responsibility of us and generations to come to continue to discover the mysteries of nature and try to decipher the meaning of life from the deliberately preserved wilderness of Taiwan. Through this, we have a very clear and common goal.

Learning from the Beaver, "Everyone is a self-leader. SOW has a lot of outstanding volunteers who are spontaneous, selfless and dedicated. They set up their own stage, write their own scripts, and make their own debut. Everyone strives to empower the younger members by passing on valuable experiences. All of these initiatives are what will make excellent future leaders. .

Learning from the Wild Goose to "inspire each other". SOW fellows often do not discuss politics, religion, and career. Instead they always feel the flow of love in the community. A lot of little stories or sayings are circulated through the association, such as: "SOW is good at waiting", "One person walks faster, a group of people walk further", "The story of a fool eating steamed buns", "The story of stone soup" and so on. Fellow volunteers encourage each other to act together, and that is one of the most fascinating characteristics of SOW.

Environmental Education Achievements

The eleven chapters of Society of Wilderness (SOW) in Taiwan regularly organize indoor seminars, training sessions, learning courses, and outdoor experience activities for volunteers in various groups. We design content specifically for children and families, take part in environmental initiatives, and carry out actions to let the general public become more familiar with us.

Item	Number of Sessions	Number of Participants
SOW Family Group	1,296	71,220 1,761 families
Children's Environmental Education	131	3,071
Initiatives		
Earth Initiatives (Turn Off Lights on the Street, Turn On Your Night Vision Goggles, What is Climate Change, Remove Alien Species, Habitat Surveys), Ocean Initiatives, Earth Film Festivals, Beach Cleaning...	38	2,227
Environmental Actions		
Wild Creek Investigation, Ocean Walk, Learning by Walking, Environmental Action Forum...	51	1,158
Seminars		
Promotion Speeches, Weekly Meetings, Monthly Meetings, Guided Reading at Film Festivals, Issue Promotion, Campus Tours...	576	25,116
Volunteer Training / Advanced Courses		
How to be a Volunteer, Interpreter, Promotion Lecturer, Children's Education Guide, Leader of Beach Cleaning, Marine Waste Surveyor; Climate Change; Energy Conservation Promotion; Editing and Interview Skills; Habitat Conservation; A Heart with Ecology; Wetland Care; Ocean Volunteers; Special Education; Empowerment...	272	4,469
Learning Courses		
Nature Observation, Nature and Humanities, Ecology Interpretation, Carpentry, Photography, Painting, Indigo Dyeing, Board Game, Green Life Map, Energy Conservation Workshop...	172	2,111
Experience Activities		
Point-count Observation, Nature Experience, Special Nature Experience, Habitat Work, Working Holiday...	2,294	57,374
Others		
Market Booths, Visits, Chapter Celebrations...	61	3,844
Total	4,891	170,590



Persevere Wholeheartedly and Find Happiness in Interpretation

Only if we have an understanding, can we care. Only if we care, will we take action. Only if we take action, will there be hope. Interpretation is the first step to guide people to understand, and docents are the key to open people's eyes to understand the beauty of nature. Through ecological interpretation activities, more people are able to experience the beauty and sorrow of the motherland. Through these experiences people will be willing to act together to protect the environment. Docents and educators stand at the forefront of environmental protection. You can see them working in activities such as ecological interpretations, environmental education, habitat survey, fixed-spot preservation and more. The original intention of interpretation is to make people see the beauty of the world and make it better place.

The Commonwealth Magazine has initiated the Smile Mountain Line parent-child guided tours, which selected several trails that are easily accessible by public transportation in New Taipei City. Voluntary docents of the Society of Wilderness guide the public to enjoy the beauty of nature by walking the mountains and creeks. In addition, volunteers from northern Taiwan gather to conduct tree surveys on campus so that the tree species in schools can be clearly labeled for students and the public to learn about the varied species. Through these endeavors, SOW docents help the public connect with nature, enhance the emotional bond between people and the land, and facilitate the belief that everyone can do their part for the environment bit by bit.



Walk the talk and hand in hand on environmental actions

In 2000, the parent-child education committee was established to organize mixed-age groups according to the age of children (Ant, Bee, Deer and Eagle) as well as parents' teams. With over 20 years of history, the committee has 20 well-developed duplex groups and 7 developing duplex groups in all parts of Taiwan. There are about 1,761 families, 2,653 children of different ages, and 3,282 adults (parents and volunteers) in the parent-child troops. The members and their families meet up a few times each month to conduct age-appropriate activities in natural or outdoor sites while facilitating self-designed educational material. All the activities are based on the core concept - "Three-Shengs" holistic education (ecology, living and life). In the past three years, the theme has converged from "sustainable forests, ecological cities, and plastic-free oceans" and moved more towards "caring and guarding the secret garden".

Children's environmental education is deeply rooted nationwide and connects with the world

In 2020, the number of services in schools has decreased due to the pandemic of COVID-19. However, the training of children's education volunteers in Taipei and Yilan was still on schedule, with a total of 43 trainees trained and the trainees of the first train-the-trainer session in Taichung Chapter was certified. This year, we have completed two camps for 50 disadvantaged children in Shuanglianpi for the 9th consecutive year. SOW has also



successfully self-navigated nature observation activities for over 60 parents and children of Nanya Technology Corporation by applying navigation and scanning technology to provide a new form of experiencing nature. SOW has collaborated with the Heysong Foundation to lead teachers and students from 22 elementary schools in Taoyuan to understand the relationship of humans among forests, water and oceans. In addition, SOW conducted two energy-saving and carbon-reduction courses for Taiwan's High-Speed Rail employees. Thanks to the Wistron Humanities Foundation for the long-term sponsorship, this year the "Wistron Humanities Ecological Seed Camp" was implemented by Hsinchu Rolling Group, Special Education Team, Chiayi Flying Butterfly Group, and the Taipei Flying Squirrel Group. The Taipei Feishuan Group conducted summer camps for disadvantaged children and humanity & ecology seed camps. In total, they hosted 29 activities and 750 participants. Furthermore, the Summer Stars Nature Art Foundation sponsored children in remote areas of Hualien and Yilan. This "Local Nature Learner" program has held 75 activities and served 2,211 participants.



Equip everyone with knowledge and ability to act on climate change

In 2019, the world entered an emergent state of climate change. SOW launched an environmental education program featuring sustainability as its core value. SOW held promotional seminars and workshops with activities such as food on the table, trees in urban areas, and energy-saving life. The purpose of these activities was to educate the public with scientific knowledge of climate change in order to persuade them to make personal climate actions and goals. In addition, the voluntary speaker training sessions held in Hsinchu and Taichung also helped to expand the scope of influence. In terms of energy



issues, SOW has been participating in the energy transition initiative campaign, supporting the use of green power to counteract climate change. Simultaneously setting up a task force to focus on the improper site selection of Taitung's "Zhiben Photoelectric Project". This project aims to express the demands of abolishing nuclear energy, reducing coal use as well as choosing the proper location

to develop green power. In 2020, SOW adopted diverse and innovative approaches, such as online questionnaires, interactive lectures, energy board games, and deliberative teaching and visiting activities. SOW hoped to carry out the energy transition awareness project for college students to increase their knowledge of new topics and reach those who are less-informed. Many activities were taking place across Taiwan to equip young adults with more understanding and independent thinking about energy transition. In the future, SOW's vision is to "Equip everyone with climate change knowledge and ability to act," and expand the scope of influence.

Aiming to reach millions of SOW Facebook followers

The Research and Development Committee has invested in training voluntary editors and reporters for more than 5 years. The "Reading Wilderness" Facebook fan page run by voluntary editors has expanded from a humble following five years ago, to more than 50,000 followers today. The influence is still increasing day by day. Last year(2019), more than 7.5 million people were reached, and 156 posts related to environmental education were published. Among them, the most popular post - "Petition to Save Zhiben Wetland " which reached nearly 100,000 people and generated more than 1,000 additional signatures for the petition. It's obvious that in addition to environmental education efforts, the fan page can also expand the influence on related topics initiated by SOW. As the management of Facebook fan page is becoming more challenging. While enhancing the quality of self-developed articles to break through the filter bubbles, more resources need to be invested in managing the "Reading Wilderness - Exchange and Sharing Platform," to encourage more netizens who care about the environment to speak out. SOW is hopeful that the community will become a new source of volunteers in the future and continue to grow.



The COVID-19 pandemic raged across the world in 2020, and nature's counterattack came back. With the severe challenge striking the environment, all SOW's internal activities were suspended from the beginning of the year. All external speeches, fixed-spot outdoor interpretation, and annual events were also cancelled or postponed. In the past, the sources of revenues, such as donations, sponsorships, promotional speeches, and projects have fallen sharply and stagnated. Under the strategic guidance of the chairman and the board members the team checked all possible income items one by one and tightened every controllable expenditure. Along with the easing of the epidemic and the government's gradual re-opening policy, at the beginning of June, with the driven decision made by the executive committee, SOW's secretary, volunteer cadres and board members came to a mutual agreement to resume the routines and activities. Fortunately, the financial gap had gradually been reduced. At the interim board meeting in October, the financial department reviewed the consolidated financial report, and the funding gap had closed and returned to normal. SOW made it through the financial crisis affected by the epidemic safely.

Thanks to strong-willed and resilient support of the countless volunteers, the passionate public, and the diligent full-time secretaries, SOW has the opportunity to continue to develop a bright future for the environment.

The Breakthrough

