

# Biodiversity: Annual Progress Update

Issue: July 2023

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# Group-Wide Biodiversity Commitment: SeaChange® 2030



Recently launched in 2023, [SeaChange® 2030](#) is our sustainability plan to reshape the seafood industry with unified solutions for People and Planet that better sustain a reciprocal relationship for all. SeaChange® 2030 is approved by Board Level [Sustainable Development Committees](#), Mr. Thiraphong Chansiri and Mr. Shue Chung Chan. Through our targets and strategies, we are dedicating 250 million THB in resources, beginning with refreshed programs for Path to Net Zero Emissions, Responsible Aquaculture and Responsible Wild Caught Seafood that are designed as cross-functional commitments to amplify impact. In 2023, our GHG commitment is validated by SBTi for Net Zero goal across the value chain by 2050. Aligning our path to Net Zero Emissions, Thai Union is taking another step working toward Net Positive Impact in the future through our sustainable practices to enhance positive contributions to the environment and society.

**Our group-wide Commitments and Strategies for Biodiversity** among others, set pathways and targets working towards no net loss, include:

- **RESPONSIBLE SOURCING** demonstrates our commitment to preserving marine biodiversity by reducing and, ultimately, avoiding sourcing from areas of critical biodiversity.
- **RESPONSIBLE WILD CAUGHT SEAFOOD** : 100% wild-caught seafood is produced responsibly and managed within biologically sustainable levels or endangered in an improvement program (striving to achieve 0 sourcing from fisheries with stocks outside biologically sustainable levels), while 100% of vessels that are implementing best practices to prevent IUU (illegal, unprotected and unregulated) fishing and modern-day slavery, by 2030 as full implementation year,
  - 100 % of wild-caught seafood comes from fisheries that are at sustainable levels or verifiably improving
  - 100 % of vessels that we source from will implement best practices to protect endangered, & threatened and protected species
  - 100 % of vessels that we source from will meet best practices for seafarer welfare and working conditions or verifiably improving
  - [Tuna Commitment](#) : With achievement beyond target of minimum 75% of our branded tuna products produced with raw material originating from fisheries that are either Marine Stewardship Council (MSC) certified or in a Fishery Improvement Program (FIP), we reached milestone with a total of 79% percent of our global branded tuna sourced from FIPs combined with MSC program by the end of 2019 and 87% was achieved by the end in 2020. (visit [Tuna Progress Report](#) for more information).
- **RESPONSIBLE AQUACULTURE**: By 2030, 100% of farmed shrimp and its feed is produced responsibly, meeting industry credible standards, or is in an improvement program that minimizes impact on surrounding ecosystems. Protecting biodiversity via farm certification or engagement in an AIP, as well as, deforestation and conversion free feed.
- **RESPONSIBLE AGRICULTURE**: Implement agricultural practices that protect natural resources throughout our value chain – including achieving zero deforestation as stated in our [No Deforestation Policy](#) (zero gross deforestation) by using 100% certified soy and palm oil, (2 of the critical commodities to biodiversity impact), and responsibly sourcing our chicken by 2030, reducing the loss of critical habitats.
- **ECOSYSTEM RESTORATION**  
By 2030, Thai Baht (THB) 250 million for the protection and restoration of critical ecosystems where Thai Union or our supply chain operates. By restoration or regeneration in mangrove which is critical value chain of seafood, we are investing in restoration projects across land and marine ecosystems. Thai Union will invest in restoration projects, including mangroves, to ensure an increase in biological value as monitored by our partners who will conduct biodiversity surveys and aerial surveillance.
- **OCEAN PLASTICS REDUCTION**  
Divert 1,500 tons of ocean-bound plastic from entering our waterways and oceans through avoidance, mitigation, and removal. Biodiversity Protecting life below water by preventing plastic pollution from entering our oceans
- **SUSTAINABLE PACKAGING**  
100% of branded products will be in sustainable packaging by 2025, while advocating for at least 60% of private label products to be in sustainable packaging by 2030. Keep harmful packaging waste out of landfills and oceans
- **BEST IN CLASS MANUFACTURING**  
Create closed-loop factories by implementing zero water discharge, zero waste to landfill and zero food loss at our five largest processing facilities. By 2030, 100%, elimination of food waste, waste to landfill and water discharge in 5 key processing facilities

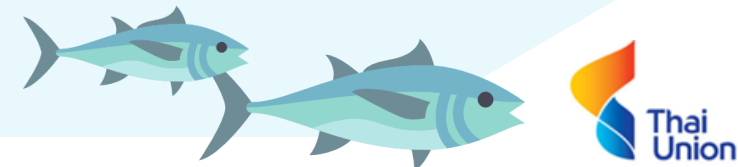
## Scope of Responsible Sourcing Commitments

- Own operations (mainly factories, with a few aquaculture farms used mainly for trials)
- Tier-1 suppliers and non-tier-1 suppliers, including agents who are the partners responsible for sourcing our shrimps.

By 2030,

**Thai Baht  
(THB)  
250 million**

for the  
protection  
and restoration  
of critical  
ecosystems  
where Thai  
Union or our  
supply chain  
operates.



# Our Biodiversity Commitment: Thai Union's Tuna Commitment 2025

## Business Drivers

- Biodiversity is necessary for continued life on earth, and in particular for the health of the ocean. The 2020 Living Planet Report by WWF highlighted that biodiversity is being lost at an alarming rate.
- To make progress on our commitment to Healthy Living, Healthy Oceans, we must focus on conserving biodiversity and nature-based solutions. As a seafood company, our focus is naturally on marine biodiversity. This work also aligns with United Nations Sustainable Development Goal 13 on Climate Action and UN SDG 14 on Life Below Water.
- Our **Tuna Commitment**, introduced in 2016, is one of Thai Union's key sustainability initiatives that contribute to marine biodiversity. We have also issued the **Policy for the Responsible Sourcing of Tuna** in 2020.
- Our commitment is to 100% sustainably source tuna, coming from certified fisheries and vessels that engage in Best Operational Practice. Key commitments are to ensure that the seafood originates from stocks which are not overexploited or overfished, full traceability is in place, bycatch is reduced or eliminated, the fishery has a rebuilding plan in place, and that they are managed based on the best available scientific information. As of 2020, we were involved in 10 ongoing tuna Fishery Improvement Projects (FIPs), and **over 87 percent of our branded tuna were sourced from either MSC or FIPs**. The progress of all the FIPs in which Thai Union is involved is reported on the website: [fisheryprogress.org](http://fisheryprogress.org).

## Our Group-Wide Target

### Thai Union's Tuna Commitment 2025

Species in scope: Albacore, Bigeye, Skipjack and Yellowfin

**By 2025, the tuna TU sources will be from vessels and suppliers that demonstrate Operational Best Practice including the prevention of IUU fishing and modern slavery.**

#### This means:

1. Tuna fisheries that TU sources from are engaged in FIPs towards achieving MSC certification, are in MSC assessment, or are MSC certified.
2. Vessels have completed Vessel Improvement Plans or meet the Vessel Code of Conduct or equivalent.
3. Vessels are monitored at sea and have either human or electronic coverage.
4. Suppliers and Thai Union operations meet ISSF conservation measures.
5. Vessels must report data, meet quota allocations and conservation measures according to RFMO resolutions.
6. Tuna is traceable to vessel and the Global Dialogue on Seafood Traceability (GDST) Standard 1.0 is implementable.

#### For more info:

<https://seachangesustainability.org/our-tuna-commitment/>

**In addition, we will further work with our partners and stakeholders on the ongoing FIPs and identifying more fisheries that will benefit from the FIP process.**

**We will also collaborate with experts and partners to develop a better understanding of the complex and challenging task of measuring NNL and NPI in the context of marine biodiversity.**



# 2022 Progress Against Group-wide Targets

## Thai Union Commitment 2025

- We were proud to surpass the goal “Tuna fisheries that TU sources from are engaged in FIPs towards achieving MSC certification, are in MSC assessment, or are MSC certified”, achieving 87 percent certified in 2020
- In 2021, we achieved 88 percent for Tuna fisheries sourced were engaged in FIPs towards achieving MSC certification, are in MSC assessment, or are MSC certified. This is putting us on track to achieve our goal of 100 percent.  
<https://www.thaiunion.com/files/download/sustainability/sd-report-2021-en.pdf> (PDF p58)
- 2022 Highlights
  - Increased the percentage of tuna purchased from vessels equipped with electronic monitoring and/or human observers from a 71 % baseline in 2021 to 79 %.
  - Conducted the first ever at-sea audit to assess working conditions and welfare of the crew on longline vessels.
  - Together with The Nature Conservancy, released the inaugural progress report on our partnership on a pioneering commitment to improve on the water transparency in global tuna supply chains.
  - Fishery status: Firstly, we defined about how to categorise the fisheries we were sourcing from: MSC certified; In MSC assessment; Fishery Improvement Project (FIP); and Not in a FIP or MSC. Read our [2022 Sustainability Report](#).



Table 1. Total tuna volume for all of tuna sourced by Thai Union.

Category	2021 Actual	2022 Actual
MSC	31%	28%
In-assessment	14%	13%
FIP	36%	40%
TOTAL	81	81
Not in a FIP or MSC	19%	19%

Table 1 shows the results for the last two years and shows stable sourcing across all of the categories; with Thai Union is engaging with partners such as suppliers, ISSF, MSC and others to understand actions that can be taken to increase volumes that are either MSC certified or in-assessment. Many of the FIPs that Thai Union is engaged in will hopefully be entering MSC assessment in the coming years which will increase proportions that are MSC moving them from the FIP category.

## Thai Union Commitment 2025

- Partnership with external organization to fulfill the commitment
- Thai Union is a founding participating company of the International Seafood Sustainability Foundation (ISSF) and share their goal that all tuna fisheries should be capable of meeting Marine Stewardship Council (MSC) Standard.
- Thai Union Manufacturing and Thai Union Europe are audited independently every year for conformance with ISSF tuna conservation measures. The 2021 compliance audit reports show full compliance with the ISSF conversation measures: <https://www.issf-foundation.org/downloads/29108/> & <https://www.issf-foundation.org/downloads/29111/>
- Thai Union is an active members of sustainability-focused industry collaboration: Seafood Business for Ocean Stewardship (SeaBOS) & Seafood Task Force (STF).
- To achieve the MSC standard, we work through a process known as a Fishery Improvement Project (FIP), where we work with a range of stakeholders, including our suppliers to improve several fisheries towards MSC certification.
- Launched a partnership with The Nature Conservancy (TNC) in March 2021.
- Launched a partnership with Sustainable Fisheries Partnership (SFP) in March 2022
- Formed a European partnership with the WWF between 2014-2018.
- Signed a landmark agreement with Greenpeace in 2017 and, in 2019 engaged external auditors MRAG, to conduct a third-party audit of this agreement. The agreement period ended in 2020, and we are currently gathering data for an independent assessment of progress by Thai Union against the agreement.
- We were proud to surpass the goal “Tuna fisheries that TU sources from are engaged in FIPs towards achieving MSC certification, are in MSC assessment, or are MSC certified”, achieving 87 percent certified in 2020





# Thai Union Engagement with Partners for Endangered Species Strategy:

## Overview Analysis Report of Sustainable Fisheries Partnership's ETP Bycatch Audit

**Thai Union Group PCL (TU)** as one of the world's leading seafood producers with an ambitious dedication to sustainability and innovation through the partnership which was established in 2022 to demonstrate TU's commitment to improving sustainability in its supply chains is with the SFP.



**Key Traceability Ltd. (KT)** is a consultancy company with a mission to unlock seafood supply chains by working closely and confidentially with a range of international clients to bring transparency to consumers. KT has worked with Thai Union on a range of different seafood projects, including fishery improvement projects (FIPs) and other short-term projects to improve the sustainability of the fisheries from which Thai Union source. The KT team has prepared this report at the request of Thai Union to contribute to their partnership work program with the Sustainable Fisheries Partnership (SFP).



**Sustainable Fisheries Partnership (SFP)** is a US-based NGO, operating globally to improve fish stocks and reduce the environmental and social impacts of fish farms and fishing. The SFP philosophy is that everyone should have access to seafood that is produced sustainably. At a minimum, this means ensuring the recovery and continued productivity of fisheries and fish farms besides reducing the interaction rate of vulnerable species such as sharks and sea turtles, decreasing the spread of disease among aquaculture farms, eliminating the use of harmful fishing gear, and enabling small-scale fishers to effectively participate in fisheries management. To achieve these goals, SFP engages with retailers, brands, and foodservice companies to drive actions through their supply chains

In 2021, SFP, and its non-governmental organisation (NGO) partners, Birdlife International and Whale and Dolphin Conservation launched their new work to conduct audits (the bycatch audit) on wild-caught fisheries. In 2022, TU decided to collaborate on this project with SFP, and the fisheries listed on the Ocean Disclosure Project (ODP) profile of TU were assessed to understand more about the current bycatch mitigation practices and the extent that the fisheries are posing a risk to endangered, threatened, or protected (ETP) species, including sharks, turtles, seabirds, and marine mammals (Sustainable Fisheries Partnership, 2022). Three fisheries per ETP taxa were identified as being “highest risk”, meaning that their operational activity poses a significant threat to ETP species (note that other fisheries in Thai Union's supply chain may also be a high risk but only the top three per ETP taxa were identified in the bycatch audit). In order to reduce the interaction rate of and risk to ETP species, SFP also outlined some specific improvements that can and should be made to the fisheries and fishing vessels.

A bycatch audit is a process to assess a retailer's seafood sourcing to identify those fisheries that present significant risks to ETP species. Overview of results The analysis conducted by KT compared the recommendations made by SFP during the bycatch audit for the “highest risk” fisheries with the commitments to ETP species bycatch management by FIPs. The analysis demonstrated that the FIPs are largely meeting or exceeding the best practices recommended by the bycatch audit. One of the generic recommendations made is to increase observer coverage (human or electronic) across the fisheries. Two of the FIPs have already implemented 100% observer (human or electronic) coverage in their fleets and most of the other FIPs have committed to meeting the 20% minimum recommended. TU has also committed to sourcing only from FIPs that can demonstrate 100% observer coverage by 2025 and is implementing this with the NGO, The Nature Conservancy (TNC).

FIP Name	Current scoring			
	Sharks	Seabirds	Turtles	Marine mammals
<a href="#">Indian Ocean tuna – longline FIP (Thai Union)</a>	100%	100%	100%	100%
<a href="#">Pacific Ocean tuna – longline (Thai Union)</a>	100%	66%	100%	100%
<a href="#">Pacific Ocean tuna – longline (Liancheng)</a>	100%	66%	100%	100%
<a href="#">Western and central Pacific Ocean tuna – purse seine</a>	100%	100%	100%	100%
<a href="#">Indian Ocean tuna – purse seine FIP (SIOTI)</a>	100%	100%	100%	100%
<a href="#">Eastern Atlantic Ocean tuna – purse seine (EASTI)</a>	100%	100%	100%	100%
<a href="#">Ghana tuna – pole-and-line</a>	100%	100%	100%	100%

Table: Matrix of the rating for the ETP species mitigation techniques committed to by tuna FIPs TU sources from.

Table: Matrix of the bycatch audit result scoring for each of the ETP species mitigation techniques within different fisheries that TU sources from.

Fishery	Current scoring			
	Sharks	Seabirds	Turtles	Marine mammals
Albacore tuna longline fishery – Indian Ocean	Highest risk	Highest risk	Not identified as high risk	Not identified as high risk
Skipjack and yellowfin tuna FAD associated purse seine fishery – Indian Ocean	Highest risk	Not identified as high risk	Not identified as high risk	Not identified as high risk
Mahi mahi longline fisheries – Eastern Pacific Ocean	Highest risk	Highest risk	Highest risk	Not identified as high risk
Mahi mahi longline fishery – Western and Central Pacific Ocean, and Indian Ocean	Not identified as high risk	Not identified as high risk	Highest risk	Not identified as high risk
Blue swimming crab gillnet fisheries – Southeast Asia	Not identified as high risk	Not identified as high risk	Highest risk	Not identified as high risk
Swordfish longline fishery – Southeast Pacific Ocean	Not identified as high risk	Highest risk	Not identified as high risk	Not identified as high risk
American lobster and Jonah crab pots/traps fisheries – Northwest Atlantic Ocean	Not identified as high risk	Not identified as high risk	Not identified as high risk	Highest risk
Lumpfish gillnet/entanglement net fishery – Norway	Not identified as high risk	Not identified as high risk	Not identified as high risk	Highest risk
Alaska pink salmon gillnet/entanglement net fishery – USA	Not identified as high risk	Not identified as high risk	Not identified as high risk	Highest risk



# Thai Union's Biodiversity Mitigation Plans

## Hierarchy of Mitigation

Thai Union applies mitigation hierarchy for protect biodiversity protection, which prioritization is taken into the process of designing the strategies. In order to lay out mitigation action plan, identifying dependency and impact on biodiversity based on the Company Activities are carried out including the biodiversity assessment (discussed in next section). (visit [Sustainability Report 2022](#) for more information).

► **AVOID**

Prevention of negative effects from material sourcing that could impact biodiversity

► **REDUCE**

Measures which minimize impacts that cannot be avoided due to nature of operating activities.

► **RESTORE & REGENERATE**

Measure which accelerate the recovery of an ecosystem with respect to its health, integrity, and sustainability and regeneration measures to increase biophysical function of an ecosystem.

► **TRANSFORM**

Measure through our supply chain to transform our suppliers that are already certified to more sustainable fishery practices as well as awareness raising for food waste reduction with stakeholders.

► **AVOID**

Avoid sourcing from fisheries with stocks outside biologically sustainable levels and to protect endangered, & threatened and protected species as per target set in [Responsible Sourcing](#). We prioritize working with responsible and certified seafood suppliers who adhere to sustainable fishing practices. By supporting fisheries that are committed to preserving marine ecosystems, we strive to protect biodiversity and ensure the long-term viability of fish stocks.

**SEACHANGE<sup>®</sup> COMMITMENT**

**By 2030,**

**100%**  
farmed shrimp and its feed is produced responsibly, meeting industry credible standards, or is in an improvement program that minimizes impact on surrounding ecosystems.

**100%**  
of the farms we source from are a safe and decent workplace.

**INNOVATION**  
Develop a standardised Aquaculture Improvement Programme (AIP) Framework with industry partners  
  
Ensure verification of improved performance, leading to industry best practices through the AIP framework  
  
Work in partnership on alternative methods of minimizing or combating disease outbreaks  
  
Develop new feed formulations and novel ingredients

**SOURCING**  
Establish traceability to farm and feed across the global supply chain  
  
Source product from certified sources or those in an AIP  
  
Drive the use of certified feed  
  
Ensure marine feed ingredients originate from responsibly managed fisheries  
  
Ensure agricultural feed ingredients originate from deforestation and conversion free sources  
  
Drive the reduction of critical antibiotics usage

[Thai Union Signs Public Pledge to Protect Ocean Wildlife Thai Union Expands Commitments to Restore Endangered Species. Invites Companies to Join](#)



Thai Union entered into a partnership with Sustainable Fisheries Partnership gradually, firstly by publishing our fishery sourcing information in an Ocean Disclosure Project (ODP) report on their website in 2018, then completing a full ODP profile in 2020 before signing a full partnership agreement in 2022. In the past year, we worked to increase transparency of the seafood supply chains that Thai Union sources from, such as: collating data for the entire Group for all farmed seafood and fisheries so that it can be entered into SFP's Seafood Metrics, which helps evaluate the sustainability of seafood, understand the effectiveness of existing improvement efforts, and identify the most important priorities for improvements. The centre piece of the year was working together on the topic of Endangered, Threatened and Protected (ETP) species



# Thai Union's Biodiversity Mitigation Plans

## ► REDUCE

- Reduction of raw materials feed from unsustainable sources of aquaculture and agriculture products in order to achieve zero deforestation in by 2030, as per target set in [Responsible Aquaculture & Agriculture](#), at which 100% of soy, palm oil, and aquaculture products to be sourced from credible certified suppliers. In addition, reduction of impacts from unsustainable packaging from downstream activities ([Sustainable Packaging.](#)) and reducing water withdrawal by adopting state of art technology for Zero Discharge.
- We continuously invest in innovative technologies and practices to optimize resource efficiency throughout our manufacturing processes. This includes energy-efficient equipment, waste reduction measures, and water conservation strategies, all aimed at minimizing our environmental impact.



## ► RESTORE & REGENERATE



- Ecosystem Restoration, we are investing in restoration projects across land and marine ecosystems. This will include mangroves, to ensure an increase in biological value which improve existing processes' biophysical function and productivity of an ecosystem of both land and marine ecosystems.
- We are investing in restoration projects across land and marine ecosystems. This will include mangroves, where Thai Union will invest in restoration projects to ensure an increase in biological value Reduce the raw materials regeneration measures which improve existing processes' biophysical function and productivity of an ecosystem or its components regeneration measures which improve existing processes' biophysical function and productivity of an ecosystem or its components (Read our [2022 Sustainability Report](#), PDF p25)



# Thai Union's Biodiversity Mitigation Plans

## ► TRANSFORM

**Supplier engagement** is a crucial measure for transforming to more sustainable sourcing practices. Supplier engagement has our continuous effort to foster positive changes throughout supply chains. The process involves communication, collaboration, and setting clear sustainability expectations with suppliers.

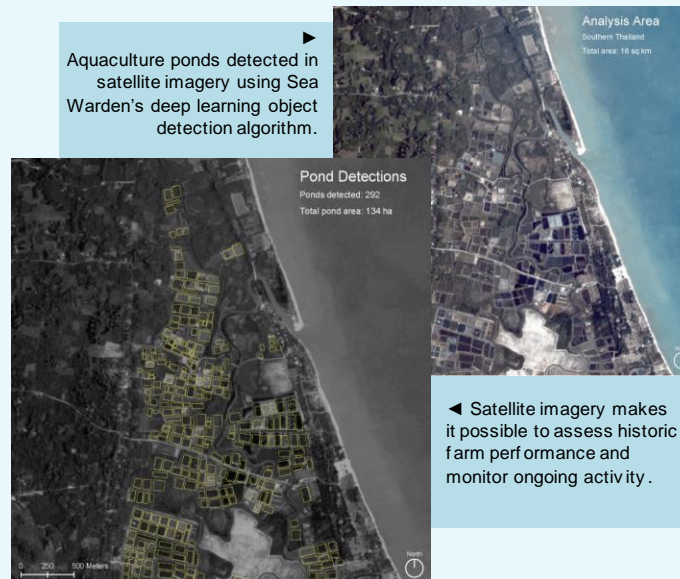
- The **Fisher Work and Welfare** program is designed to provide clear guidance about working conditions on board the vessels that Thai Union sources from, and to encourage better practices at sea. We have started to develop a tier system to grade our suppliers. It allows us to acknowledge the suppliers that have either completed or have closed most of their findings through the corrective action process, grading them in tier-1 and also to encourage other suppliers to continue their hard work and move up through the tiers
- For marine biodiversity mitigation plan, the focus is on transforming our seafood suppliers through **Fishery Improvement Projects** (FIPs) towards MSC certification, are in MSC assessment or are MSC certified outlining specific improvements fisheries practices to reduce the impact of nature loss. For continuous improvement, together with our partners [Key Traceability Ltd.](#) (KT) and [Sustainable Fisheries Partnership](#) (SFP), overview Analysis Report of Sustainable Fisheries Partnership's ETP Bycatch Audit is published to drive sustainable wild-caught fisheries practices by transforming our suppliers through standardized framework via KT's audit and recommendations.
- To drive improvement of the aquaculture sector at scale, there is a growing need to create a standardized **Aquaculture Improvement Project** (AIP) Framework to provide clarity for how multi stakeholder efforts can improve environmental and social performance, while sharing risks associated with seafood farming. As part of SeaChange® 2030, we will develop an AIP Framework by working with industry partners and will ensure verification of our performance so that we drive industry best practices.



**Satellite technology's application** in seafood traceability and sustainability represents a technological transformation measure that can lead to system-wide change by systematically monitoring and tracking devices. Through this approach, we aim to combat illegal fishing, encourages sustainable practices, promotes supply chain transparency, and reduces the environmental impact of fishing operations. Through these measures, the seafood industry can contribute to broader conservation efforts, combat overfishing, and ultimately support marine ecosystem preservation.

### [Thai Union pilots satellite technology to advance seafood traceability and sustainability](#)

In late 2021, Thai Union began piloting the use of satellite imaging (aka earth observation or remote sensing) for shrimp farming operations in collaboration with Sea Warden ([a satellite data analytics company](#)), and Wholechain ([a supply chain traceability company](#)). As one of the world's largest seafood producers, Thai Union seeks to encourage the use of innovative technologies to promote sustainable seafood production. The main goal of the pilot was to generate Key Data Elements (KDEs) for shrimp farms that are automated, independently verifiable and cost effective. Integrated with traceability technology, the KDEs collected through satellite imaging have the potential to support sustainable farming practices through insights into shrimp populations, farm health, contamination and more.



Satellites have imaged the earth for more than 50 years to the benefit of many industries including agriculture, forestry, and wild capture fisheries, but it is still an emerging technology within aquaculture. In recent years, certain KDEs have been promoted widely by sustainability and traceability advocates within the seafood industry to address the lack of data available to importers/retailers/consumers in order to make more responsible purchasing decisions. Sea Warden and Wholechain have worked closely on creating a list of KDEs that cross-reference those attainable through satellite observation with those required by the Global Dialogue on Seafood Traceability ([GDST](#)), Best Aquaculture Practices ([BAP](#)) and the Aquaculture Stewardship Council ([ASC](#)), as well as additional KDEs that represent opportunities for substantiating Environmental, Social and Governance (ESG) targets for seafood industry stakeholders.



# Biodiversity Assessment Methodology

## IBAT Biodiversity Assessment



Comprehensive assessments of biodiversity and ecosystem services in the areas in assessment scope is conducted using the location-specific method from the coordinates of our own-operations, and other location at which upstream and downstream activities are carried out.

With IBAT database, biodiversity exposure assessment is carried out based on *Critical Biodiversity Area* as defined as

- World Heritage areas,
- IUCN Category I-IV protected areas,
- Alliance for Zero Extinction,
- National Parks, and
- Other forests such as Thailand Reserved Forest, etc.

Results from IBAT operation is displayed in next Section.

## Scope of Assessment

- Own operations (31 factories, and 2 aquaculture farms), including adjacent areas to properties within 1 km distance.
- Upstream: Tier-1 suppliers and non-tier-1 suppliers, including agents who are the partners responsible for sourcing our shrimps.
- Downstream locations: storage centers, ports and airports commonly used to transport and distribution of products.



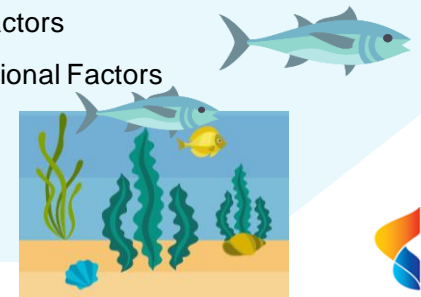
## WWF – Biodiversity Risk Filter



For own-operations, the Sites identified as areas exposed to biodiversity risks by IBAT are further assessed by WWF-Biodiversity Risk Filter using the locations of the 5 Sites (4 factories and 1 aquaculture farm) in order to determine dependency and impact risks on biodiversity based on the activities of operating Sites as Food & Beverage Production and Fishing and aquaculture

Aspects of biodiversity risks considered in the assessment include:

- Physical Risks
  1. Provisioning Services
  2. Regulating & Supporting Services - Enabling
  3. Regulating Services - Mitigating
  4. Cultural Services
  5. Pressures on Biodiversity
- Reputational Risks
  6. Environmental Factors
  7. Socioeconomic Factors
  8. Additional Reputational Factors



# Biodiversity Exposure Report (assessed by IBAT in 2020 and new-sites assessed in 2022)

## Overall Sites

Types	No. of Sites	Location	Mitigations through Certifications and Audit
<b>Own operations – 40 Sites</b>			
Factory	31	16 Thailand, 1 Vietnam, 1 Indonesia, 1 Seychelles, 1 Ghana, 1 Poland, 1 Portugal, 2 France, 1 Norway, 4 Germany, 1 Lithuania, and 1 United States.	ISO14001, ISO45001, ASC, 3 <sup>rd</sup> party EHS compliance audit
Farm**	2	2 Thailand	BAP, GAP, 3 <sup>rd</sup> party EHS compliance audit
<b>Upstream: Critical Farms and Packaging Suppliers - 108 Sites</b>			
Shrimp farms	15	15 Thailand	ASC, BAP, Global GAP, ASIC
Salmon farms	59	39 Norway, 20 Chile	ASC, BAP, IFS
Packaging	24	24 Thailand	ISO14001, FSC, GMP
<b>Downstream: Transportation and Distribution</b>			
Storage centers	2	2 Thailand	Supplier compliance audits
Ports & airports commonly used	6	2 airport in Thailand, 1 port in Thailand, 1 port in Seychelles, 1 port in Ghana, and 1 port in Vietnam	Not applicable

## Exposure Assessment Results

Biodiversity Exposure & Assessment	Number of sites	Areas (Hectares)
<b>Own Operations – Total Sites</b>	<b>33</b>	<b>346</b>
<b>Assessment:</b> Site undergone biodiversity impact assessment	<b>33</b>	<b>346</b>
<b>Exposure:</b> Site identified to be in close proximity to critical biodiversity*	5	73
<b>Management plans:</b> Sites with biodiversity management plans (through certification)	5	73
<b>Upstream: Critical Suppliers on Land – Total Sites</b>		
<b>Assessment:</b> Site undergone biodiversity impact assessment	128 sites	
<b>Exposure:</b> Site identified to be in close proximity to critical biodiversity*	23 sites	
<b>Management plans:</b> Sites with biodiversity management plans (through certification)	23 sites	
<b>Downstream: Transportation and Distribution</b>		
<b>Assessment:</b> Site undergone biodiversity impact assessment	8 sites	
<b>Exposure:</b> Site identified to be in close proximity to critical biodiversity*	1 sites	
<b>Management plans:</b> Sites with biodiversity management plans (through certification)	Not applicable	

\*Critical Suppliers are classified based on top spending of each group of supplies. At the initial phase, Thai Union Group has performed the assessment of critical suppliers for the key raw materials and supplies.

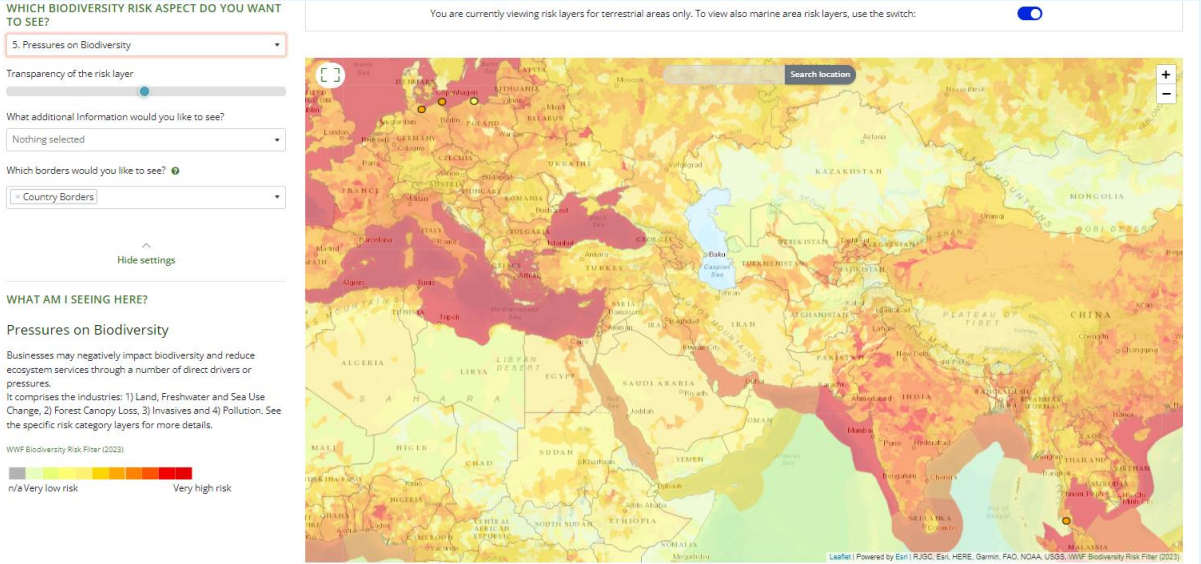
\*\*In 2022, the following Thailand farms and hatcheries operations have been ceased since September 2022. Hence, only 2 farms will continue operation.

# Biodiversity Exposure Report – Own Operations

Site	Name	Designation Types	IUCN Category
(1) IOT	Mahé highlands and surrounding areas, Seychelles	Alliance for Zero Extinction Class – Aves, Order – Strigiformes, Family - Strigidae	-
(2) KO-Poland	Special Protection Area (Birds Directive)	Regional	-
	Protected Landscape Area	National	-
(3) RF Hawesta	Schlutup	Landscape Protection Area	V
	Traveförde und angrenzende Flächen	Special Areas of Conservation (Habitats Directive)	-
(4) RF Sassnitz	Ostrügen	Landscape Protection Area	V
(5) TMK1 (Farm)	Khlong kan tang forest and Khlong hai loh forest	Thailand Reserved Forest, Trang	-
	Libong island	Thailand National Park	-



# Dependency-related and Impact-related Biodiversity Risks – Own Operations



Thai Union, as seafood manufacturer, is well-aware of dependence on water and healthy ecosystems for continuity of operations and business sustainability. In order to closely analyze the 5 Sites of own-operations identified as areas exposed to biodiversity risks by IBAT, WWF-Biodiversity Risk Filter was used to further assess the dependency-related and impact-related biodiversity risks in 2023.

Based on the location-based assessment, risks of water scarcity and conditions are highlighted to the company attention. On annual basis, the company conduct the Water Risk Assessment using WRI Aqueduct Tool to closely monitor the water related to risk, especially water-stress (visit [SAFETY, HEALTH AND ENVIRONMENT](#) for more information).

Despite these risks identified, we have our plans in place to ensure effective water pollution control by closely monitoring our discharged against compliance standard. Beyond compliance control, to ensure sustainable water use practices and reduce the dependence on water sources which are essential to our operation as well as surrounding communities, we are starting to adopt Zero Discharge concept which will be first implemented at our 5 main factories and to be explored for implementation in other factories.

Biodiversity Risk Filter Scape Risk Results				Scape Physical Risk	1. Provisioning Services	2. Regulating & Supporting Services - Enabling	3. Regulating Services - Mitigating	4. Cultural Services	5. Pressures on Biodiversity	6. Environmental Factors	7. Socio-economic Factors	8. Additional Reputational Factors
Site Name	Industry	Country	Land or Seascap	SPH	SRC1	SRC2	SRC3	SRC4	SRC5	SRC6	SRC7	SRC8
KO Poland	Food & Beverage Production	Poland	Baltic Sea (656)					No dependency or impact				
RF Hawesta		Germany	Baltic Sea (641)									
RF Sassnitz		Germany	Baltic Sea (641)									
TMK1 Farm	Fishing & aquaculture	Thailand	Andaman Sea									

Remark: Data not available for assessment at IOT Site.

Another key measure to mitigate impact on land biodiversity is by avoiding deforestation and preventing invasion of protected areas as per our continuous effort to promote sustainable agriculture through *Responsible Agriculture* and *Responsible Aquaculture* commitments as part of our [No Deforestation Policy](#) striving for zero deforestation. By implementing sustainable agricultural practices driving adoption of certified deforestation and conversion free (DCF) feed across the supply chain, and transforming our suppliers through development of standardized Aquaculture Improvement Programme (AIP) Framework with industry partners to ensure industry best practices.



On site-specific level, we closely monitor our operations with periodic internal audits and seek third-party accreditation to ensure that the practices align with industry standards and operated with effective management to continually improve their operations and contribute to the long-term sustainability of the seafood industry. The Site TMK1 farm is audited and accredited Aquaculture Stewardship Council (ASC) and the other 4 Sites which are manufacturing facilities are certified with Marine Stewardship Council (MSC). In addition, IOT located in Seychelles is accredited with ISO9001, ISO14001, OHSAS18001 / ISO45001 certificates. Effective management: The fishery must have effective management systems in place that adhere to relevant laws and regulations, and adapt to environmental conditions.

These integrated approaches, as well as several others listed in our [SeaChange®2030](#) strategy, enable sustainable production of food in while safeguarding biodiversity, reduced chemical inputs, ensuring healthier soils, water bodies and ecosystem as well as the well-being of both wildlife and communities.



## Biodiversity Exposure Report – Upstream: Critical Suppliers (Farms and Packaging)

Site	No of Sites	Name	Designation Types	IUCN Category
Shrimp farms in Thailand	13	Confidential	Reserved Forest and National Forest (not classified as IUCN Cat I – IV)	-
Salmon farms in Chile	10	Bosques Templados Lluviosos	Protected Area (not classified as IUCN Cat I – IV)	-
Packaging in Thailand	None	N/A	N/A	N/A

N/A – Not applicable

## Biodiversity Exposure Report – Downstream: Transportation and Distribution

Site	No of Sites	Name	Designation Types	IUCN Category
1 port in Seychelles port	1	Seychelles Ports Authority	Mangrove Area	-



A vibrant underwater scene of a coral reef. The reef is covered in various types of coral, including brain coral and sea fans. A large blue starfish is prominently displayed in the center. Numerous small orange and yellow fish are swimming around the reef, and a few clownfish are visible near the bottom left.

# BIODIVERSITY



Safeguarding life and ecosystems