

1&2 MONTH MARINE CONSERVATION INTERNSHIPS



Global
Reef

OVERVIEW & WELCOME FROM THE GLOBAL REEF FOUNDER

Global Reef's marine conservation internships aim to educate and train individuals in reef ecology, biology and conservation, giving them the knowledge and skillsets to participate in active underwater conservation projects.

At the outset interns will be introduced to key topics relating to coral reefs and the reef associated organisms that inhabit these ecosystems. Other topics from course director, Piers' textbook, '*An Introduction to Corals, and The Reefs They Form*', are taught. These take an in-depth look into coral reefs, threats to these environments, and reef conservation. Interns will develop an in-depth knowledge and understanding of the biology and ecology of reef-associated corals, fish and invertebrates. Through direct observations during dives, interns will see first-hand the key interactions that occur between these different organisms, helping them to understand the essential roles each organism fulfils in maintaining a balanced and healthy ecosystem.

Interns will also develop a range of ID skills for marine organisms over a series of dives, as well as making observations on the threats evident on different coral reefs. They will be taught skills in the use of different survey methods for underwater research purposes – essential for when interns participate in the research, monitoring, and conservation projects, set up by Global Reef.

For interns who enrol on a two-month internship they will gain further experience during the second month working on all of Global Reef's projects as a valuable marine research assistant, and becoming a crucial member of the data collection team, assuming a lead role amongst research dive groups.

The Global Reef Marine Conservation internships provide an excellent opportunity for individuals to gain knowledge and hands-on experience working with a marine conservation organisation. In doing so, they will collect valuable data from Koh Tao's reef ecosystem, contributing to projects with the Thai Department of Marine & Coastal Resources (DMCR) and scientific research publications. Interns will play a key role in Koh Tao's protection and conservation in years to come.

Piers Baillie, Global Reef Founder.





Never dived before?

Not a problem – all preliminary dive training can be arranged on site through our partnered dive resort. Courses are led by highly qualified and experienced instructors, with all equipment included. Good in-water competence, confidence, and fine-tuned buoyancy skills, ensure individuals will get the most out of their internship. Prerequisites to all conservation internships therefore include the courses listed below.



- **Open Water**
- **Advanced Open Water**
- **Rescue Diver (Including First Aid & Oxygen Provider)**





Why choose Koh Tao?

Koh Tao lies in the crystal clear, warm waters of the Gulf of Thailand. Hailed as a Makkah for diving, the rich and biodiverse ecosystem surrounding the island has earned its reputation for being one of the most reputable diving hotspots in South East Asia. The 25+ dive sites that surround the island offer a number of key research sites, allowing a variety of different research projects to have been established over the years. With such diversity amongst its reef associated organisms, Koh Tao's underwater world provides a model ecosystem for studying coral reef environments, helping to contribute to our global understanding of how reefs are being affected, and what can be done to protect them.



With visibility often reaching 30+ meters under the glassy sea surface, this allows the team to access a variety of different research sites, from shallow reef walls, to deep isolated pinnacles further offshore, from artificial reefs, to WWII wrecks. Each hold their own secret, and are key to helping develop our understanding of different marine habitats and interactions between their associated marine life.

Working with Global Reef also extends to working with their partners. This will involve participating in collaborative projects with Thailand's Department of Marine & Coastal Resources (DMCR), as well as contributing to ongoing PhD and post-doc research projects being conducted directly through the organisation.



ITINERARY

Week 1: The biology and ecology of corals, reef substrates and marine invertebrates.

Through direct observations underwater, see first-hand the keystone organisms that engineer the world's richest ecosystem – corals. Further this by learning about the different types of reef substrates that contribute to structuring such high levels of biodiversity on the reef. Presentations and training will also be conducted on invertebrates that inhabit coral reefs, and how they interact with their environment. During this week you will learn about:

- Different types of corals and how coral reefs are formed.
- Why corals are so important in engineering an entire ecosystem.
- Evidence of reef health, as well as threats to corals in nearby reefs.
- The biology and ecology of a multitude of different types of invertebrates that live on coral reefs, and how they contribute to an ecosystem four times richer than the rainforest.
- The ecological niches (roles) that invertebrates occupy to maintain a balanced and healthy ecosystem.
- An introduction to coral and invertebrate monitoring and research methods.

Week 2: Fish ecology biology, and behavioural observations.

By this point in the program, you will have potentially seen over 150 species of fish during the preliminary dive training courses. This week is all about learning what they are, what roles they fulfil in maintaining balanced and healthy ecosystems, their position in the food web, and the interactions they share with other reef associated organisms. During these training dives you can expect to:

- Make direct observations of anatomical/morphological features of different fish families.
- Observe key behavioural traits that reveal information about the ecological roles of reef associated fishes.
- Witness interactions occurring between different fish species, and their environment, helping develop a general understanding of how the ecosystem functions as whole.



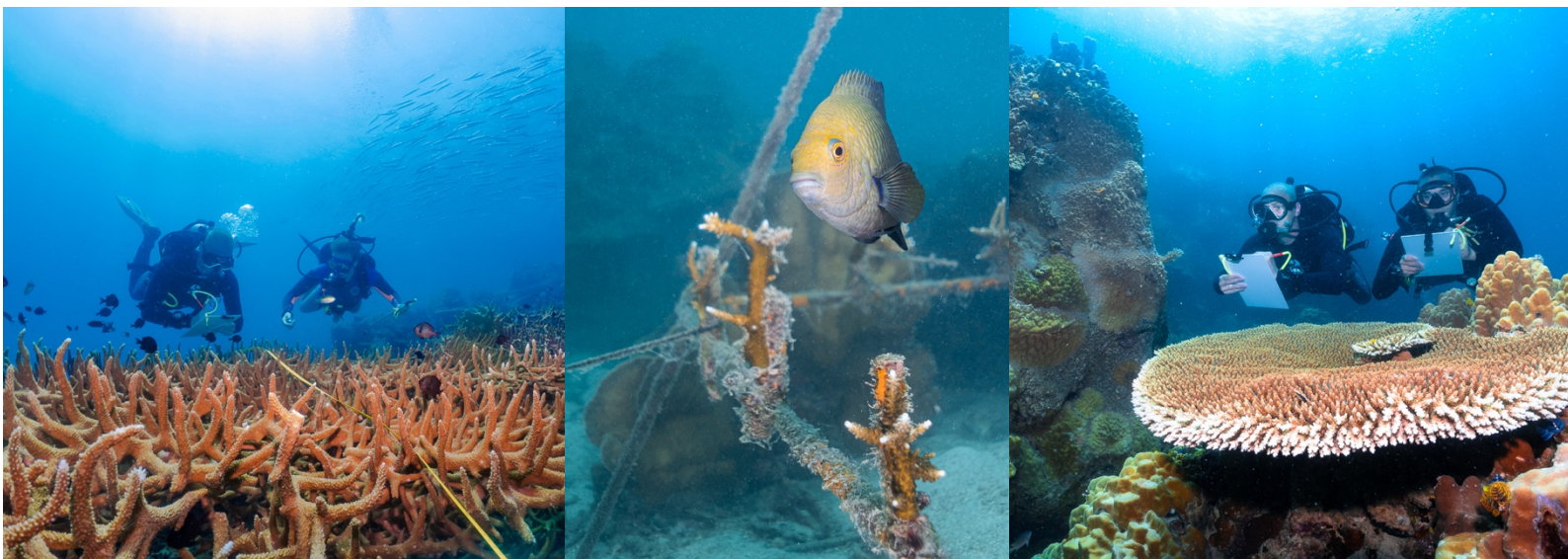
Week 3: An introduction to underwater survey methods.

Interns will then develop a range of ID skills over a series of training dives, both for marine organisms, as well as for identifying evidence of threats subject to coral reefs. These ID skills will allow them to participate in Global Reef's monitoring projects later on in the internship. During this time, interns will also develop skills in the use of different survey methods for underwater research purposes which will also be deployed in subsequent research involvement. Training dives will include:

- Practicing ID skills through direct observations underwater.
- Developing skills in timed swim surveys, belt transects, fixed transects, and other underwater research methods.
- Developing skills in survey protocols used to quantify the abundance and biodiversity of reef fish.

Week 4: Project work/data collection

For interns enrolled on the 4 week internship, the final 10 dives are all about putting the knowledge and skillset developed during previous weeks into 'hands-on' underwater research. Interns will be briefed on the projects established by Global Reef around the island, and will gain their first experience in becoming part of a marine research team, conducting marine research and conservation work underwater. During this time, interns will learn how to gather, analyse, and interpret data collected during the week, helping them see first-hand the contribution they have made to furthering our scientific understanding of coral reefs and marine organisms, as well as the ongoing conservation work around Koh Tao.





Weeks 5-8: Join the Global Reef research team, and participate in active Global Reef projects as a research diver and data collector.

Over the course of weeks 5-8, interns will become a key member in ongoing research projects established through Global Reef, delving deeper into the field of marine conservation as a valued marine research assistant. Weeks 5-8 will involve being briefed on various research projects, and conducting research, surveys and conservation activities in the field. Interns will assume a higher level of responsibility, often taking more of a lead role when conducting work underwater in groups.

During this month, interns can expect to play a key role in the following marine research and conservation projects:

Crown of Thorns Starfish Population Studies.

- Identify areas of population outbreaks that pose a significant threat to reef health.
- Gather size data from COTs to identify potential recruitment 'hotspots'.
- Assess the relative impact of differing population densities on reef health, to help redefine local outbreak population densities around Koh Tao.
- Closely monitor population trends to inform effective conservation methods.

Artificial reefs and wreck research.

- Acquire data from wrecks and artificial reefs to understand the impact they have on conserving natural reefs and populations of reef associated organisms.
- Gather information on the characteristics of wrecks and artificial reefs to understand how they support different marine organisms.

Pelagic/predatory fish research.

- Gather data on key predatory fish around isolated pinnacles further offshore, in order to understand the relative impact of various stakeholders on larger predatory species.
- Contribute to an ongoing research project assessing population trends that have emerged since pre/during/post COVID lockdowns.
- Assess population trends of vulnerable/threatened and economically valuable species of pelagic fish.



Monitoring of marine functional groups.

- Gather data on key marine functional groups to further develop our understanding of the interactions that occur between marine organisms on the reef.
- Identify population trends and correlations that exist between different marine functional groups.

Reef restoration

- Transplant coral fragments onto artificial reef substrates.
- Gather data that reveals information on survival and growth rates of transplanted corals.
- Conduct research to assess the relative impact of restoration projects on surrounding reefs and populations of reef-associated organisms.





WHAT'S INCLUDED

Dive equipment:

A full set of diving equipment will be supplied to all interns by the dive resort. All equipment is state-of-the-art, well maintained, and regularly serviced to ensure a maximum level of safety for all divers. This includes:

- BCD
- Wetsuit
- Fins
- Weights and weight belts
- Mask (although it is highly recommended that interns purchase their own after arriving)
- Snorkel
- Dive computer

Not Included:

- Flights
- Travel insurance
- Personal dive insurance
- Visa

ACCOMMODATION

Global Reef has partnered with a beach front dive resort which provides a full range of services and facilities. Participants have the option of finding their own accommodation, or are able to stay at the resort for the duration of their stay. Accommodation options range from; dorm rooms and private rooms, to simple bungalows.





OTHER INFORMATION

Staff:

All classroom and in-water diving activities will be led by highly qualified staff with years of experience working in the diving industry. Led by marine biologist, researcher and published author, Piers Baillie, his team provide top level training in diving, marine biology and underwater research, having acquired an abundance of knowledge from Koh Tao's reef ecosystem through ongoing research over past years.

Visas:

Visa applications may vary in how long they take to process depending on nationality/country of application, therefore it is important to research and complete all visa applications within the required timeframe prior to departure. Furthermore, as entry/visa requirements are subject to change, it is important to keep up to date with the latest requirements prior to travelling.

Insurance:

As this is a diving-related internship, we advise all participants to acquire personal diving insurance that covers them to a maximum depth of 30m.

Flights:

For those travelling from abroad, a recommended travel itinerary can be found below:

- International flight to arrive in Suvarnabhumi International Airport, (Bangkok).
- Domestic flight to arrive in Samui International Airport (Koh Samui).
- Lomprayah ferry from Samui to Koh Tao.

Medical:

Interns will be required to complete a dive medical form before engaging in any-water activities. It is advisable that this is completed in advance, in the event of a further medical appointment with a doctor being necessary, based on answers given on the dive medical form.