

ECO KOH TAO



1/01/2014

Annual Report

2014 was another successful year for conservation organisation Eco Koh Tao. As a marine conservation organisation dedicated to the preservation and conservation of the waters around Koh Tao we are extremely proud once again of our fantastic achievements for 2014.

Eco Koh Tao

ANNUAL REPORT

INTRODUCTION

Protecting Koh Tao starts with developing extensive awareness and understanding of the marine environment through educational programs that highlight the issues that most threaten marine (especially coral reef) environments. These are highlighted by research projects to illustrate ways we can help protect and rehabilitate the reef. These research projects are an integral illustration of the things we can do and gets concerned individuals actively involved.

Working in conjunction with Crystal Dive Resort, Eco Koh Tao operates as a the marine conservation 'department' of Crystal Dive developing environmental polices and procedures and raising the awareness of the thousands of divers that go through Crystal's waters.

Eco Koh Tao collaborates with the local community, government officials and other stakeholders primarily through its active involvement in the Save Koh Tao Community Group. Save Koh Tao in the past often conducted monthly meetings but more recently has changed to more direct means of correspondence with the more dedicated members of its community.

Eco Koh Tao and Crystal Dive remain one of the most active marine branch members of the Save Koh Tao group and are clearly one of the few very active conservation organisations on Koh Tao.

2014 has been another successful year with demand for marine conservation education and awareness helping to drive the expansion and influence of Marine Conservation on Koh Tao. We feel that conservation is becoming more mainstream with customers more accepting of it's role, importance and their desire to become involved in the process rather than remain idle bystanders.



ENVIRONMENTAL ACTIVITY SUMMARY 2014

Meetings Attended	2
Beach & Dive Site Clean Ups Conducted	20
Whale Shark & Turtle Sighting Database entries	8
Biorock Lectures & Dives	5
Junkyard Artificial Reef & Alternative Dive Site	27
Coralwatch Coral Health Surveys Conducted	21
Coralwatch Coral Health Chart Specialties	7
Reef Check Surveys	34
Reef Check Ecodiver Certified	24
Koh Tao Ecological Monitoring Program Courses	18
Marine Resource Management Course	18
Other Non-Specific Maintenance and Project Work	31
TOTAL individual activities	174
TOTAL participation	678

Meetings

In 2014 members of the conservation community decided to take a different tack rather than waste time preparing and conducting too many meetings to which few people attended or contributed. This past year we collaborated more directly with active members of the Save Koh Tao Community Group. Eco Koh Tao worked predominantly with New Heaven Reef Conservation program and had assistance and contributions from a handful of other dive schools on the island throughout the year. We feel this provided more efficient use of resources on reporting and promotion of our conservation activities than in previous years.

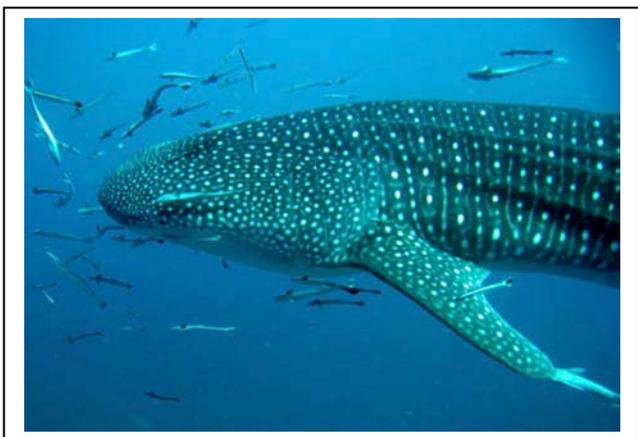
Marine Debris Management

In conjunction with community members under the banner of the Save Koh Tao group we conducted bi-monthly clean ups dives in one of the many bays around Koh Tao. This year we focused on our local beach in Mea Haad, one of Koh Tao's busiest bays and main harbor. These were conducted in conjunction with Project Aware's clean-up campaign Dive Against Debris. This campaign highlights the issues with marine litter and garbage as a fact of life in the oceans and our dives are fighting the ever-increasing debris found there. During these dives participants are usually given free dives and educated on both how to responsibly remove trash, and importantly how to reduce their impact in the future. (Read more at <http://ecokohtao.com/procleanups.html>)

This year Eco Koh Tao and Crystal Dive focused on our local beach in Mea Haad, one of Koh Tao's busiest bays and main harbor

Whale Shark & Turtle Sighting Database entries

Having intimate knowledge of some of the key species of an ecosystem is important to manage its protection and survival. To this end on Koh Tao in the past we established sighting databases for both Whale Sharks & Turtles.



The databases on the Marine Conservation Koh Tao website have failed to be maintained throughout 2014 however we have continued to maintain an Excel spreadsheet with our in-house sightings. In the past Eco Koh Tao has been the largest contributor to our local Turtle and Whale Shark sighting database operated by Marine Conservation Koh Tao.

Despite the limitations we have continued to upload our Whale Shark sightings to international databases including the Whale Shark Project run in association with The Shark Trust (www.sharktrust.org) & Ecocean, another Whale Shark Sighting database (www.whaleshark.org).

Continuing to gain a greater understanding of some of the islands biggest drawcard is important and we hope to continue our excellent work in this area. (www.ecokohtao.com/prosightings.html)

Biorock Lectures and Dives

Biorock is ground breaking technology applying electrical current to an underwater structure thereby altering the nearby water chemistry to promote the growth of calcium carbonate. Biorock technology has been on Koh Tao since 2005 with the larger of the two projects being developed, built and established as a major project for the Save Koh Tao group in 2008

Its development depends on constant maintenance and consolidation. To this end Eco Koh Tao has conducted a number of dives that involve collecting and transplanting 'corals of opportunity' onto our Biorock structure. In addition growth & coverage data is collected by way of quadrant surveys and individual fragment measurement.

The Biorock site is looking fantastic and its progress has been astounding over the past few years. Divers, both old and new love the site and it is a pity we can't get there more often. (Read more at www.ecokohtao.com/probiorock.html)

Junkyard Artificial Reef & Alternative Dive Site

Junkyard Reef is Crystal Dive & Eco Koh Tao's own in-house artificial reef located in Mae Haad. Adjacent to Crystal Dive around 300 metres offshore dive centres island wide have also taken a liking to this new location which promises so little but delivers so much.

We began Junkyard in 2009 by promoting recycling of non-damaging items that could provide structure and substrate attracting marine life to the shelter and security it provides. The result has been (almost) an entirely new ecosystem home to a nice variety of weird and wonderful creatures uncommon on Koh Tao.

Junkyard is also home to coral nurseries and other coral fragmentation and transplanting experiments. Being an artificial location the site requires constant maintenance as we develop 'best practices' through extensive

experimentation. Our research ensures projects are designed and implemented more effectively & efficiently. Junkyard continues to be a flagship of our great work here.

One of the greatest results has been the traffic Junkyard has taken off of many of Koh Tao's more beautiful natural sites. This was a primary reason behind its conception and as a dive location Junkyard is being used daily by many dive schools on Koh Tao. Crystal Dive has taken an affection to it and due to their large numbers (Often with 30-40 divers, sometimes more, on their dive boats) the result of Crystal utilising the site for training has a large positive impact by keeping those divers off our natural reefs until proficiency underwater is gained. (www.ecokohtao.com/proart.html)

Coralwatch Coral Health Chart and Specialty Course

Coralwatch is a coral monitoring program developed in conjunction with the University of Queensland and Project Aware. (www.coralwatch.org).

In 2014 Eco Koh Tao conducted and submitted 21 Coralwatch Coral Health Chart surveys to the Coralwatch Website. Eco Koh Tao is the largest single contributor of Coralwatch data in the region. Crystal Dive's Course Director Matt Bolton and Master Instructors Nathan Cook, Simon Dowling and Jenny Dowling have been certified as some of the first Coralwatch Coral Health Chart Distinctive Specialty Instructors for the Asia Pacific Region.

This year we certified 7 people as distinctive Coralwatch specialists throughout 2014.



Reef Check and the Koh Tao Ecological Monitoring Program (EMP)

Reef Check International (www.reefcheck.org) is a global eco-monitoring 'citizen science' program collecting scientific data to help scientists and other stakeholders determine and track the health of the oceans. Through multiple programs focused on conservation, fisheries management and tourism Reef Check is working internationally to preserve the world's coral reefs.

Eco Koh Tao have been integral partners to Reef Check's monitoring program in Thailand having completed more than 20 Reef Check surveys this year



alone. Reef Check Surveys can only be conducted by appropriately trained and certified 'Ecodivers'.

In 2012 Chad Scott from the New Heaven Reef Conservation Program developed the Koh Tao EMP distinctive specialty and Master Instructors Nathan Cook, Simon Dowling and Jenny Dowling are certified instructors providing training in both the Reef Check and the Koh Tao EMP methods. Funds from the certification of students as EMP divers are directly devoted to the local community group, Save Koh Tao. (Read more at <http://ecokohtao.com/proemp.html>)



Marine Resource Management Program (MRM)



For the last four years Eco Koh Tao is the only dive or conservation centre providing training and certification in the PADI distinctive specialty. 2014 was a particularly productive year with 18 students certified in the Marine Resource Management Specialty including probably the youngest MRM diver, Kailash Cook, at 12 years he is the future of our conservation initiatives. This program has been expanded and developed into a week long process combining the detailed dive theory with an introduction and practical application of specific Reef Rehabilitation projects. These include Biorock, artificial reefs and coral nurseries. (Read more at

<http://ecokohtao.com/mrm.html>)

Other Projects

Throughout the year Eco Koh Tao has been comprehensively involved in the marine conservation of Koh Tao and its environs through involvement in a variety of programs and projects.

Coral Nurseries



2014 saw the continued development of coral nurseries initially installed with the Save Koh Tao Community Group, the Prince of Songkhla University and the Department of Marine and Coastal Resources. Eco Koh Tao manages nurseries in two locations around the island and has arguably been one of the more active members of this project planting, tending and maintaining the nurseries consistently. (www.ecokohtao.com/pronursery.html)

In 2014 Eco Koh Tao has successfully transplanted all its growing coral fragments from the two nurseries in Mae Haad & Twins. To do this we developed new transplant locations specifically designed to receive the coral fragments. In Mae Haad we used rope nurseries tied to metal structures, developed concrete templates to plant corals in, took unwanted toilets and made them coral homes all in an attempt to provide suitable destinations for these corals as well as promoting recycling of unwanted, non-polluting items.

The nurseries themselves have proven very successful, with growth & survival rates high, and our methods improving with each new incarnation. The first year we used many unsuitable species that



did not take well their nursery locations. As a result many of them went ‘missing’ or fell out and never really developed. In the years following their development in 2010 many of the nurseries are showing upwards of 95% survival and a similar figure for attachment. This is a marked improvement and shows we are learning from experience. Practice makes perfect.



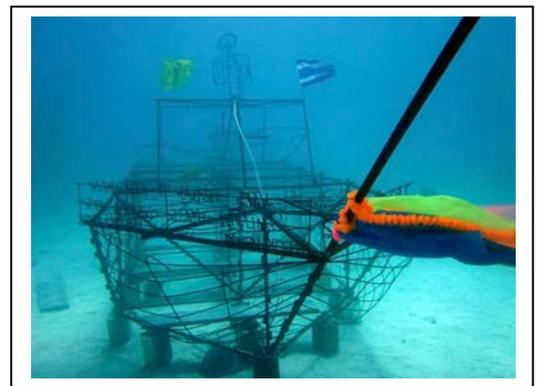
Giant Clam Nursery

Since 2012 Eco Koh Tao has been working with the Save Koh Tao group to increase the population of Giant Clams on Koh Tao. This important mollusk species helps to improve water quality and provides important substrate for a variety of

other reef species. We have received over 1000 giant clam juveniles over the past two years and reared them in protective cages just offshore in Mae Haad. In the past we have transplanted mature clams onto natural reef areas only to see them decimated by predators within days. This time around we have tried a different method transplanting the mature clams onto the natural reef and continuing to cover them for around a month to allow them to settle. So far results have been encouraging with 70% survival from with our giant clams using these new methods.

Buoyancy World

Buoyancy World is an artificial reef developed in conjunction with the Save Koh Tao group and the DMCR. The concept idea was developed by Eco Koh Tao’s manager, Nathan Cook and voted on by the local community group as the major project for 2009-10. Our first installment involved a number of dive schools constructing artificial objects and sinking them near an established dive site. The aim was to develop a purpose built artificial location to train beginners and keep them off the pristine natural reefs. In addition it was decided to place it next to a busy dive site so dive businesses could moor at their usual site, but had an alternative location nearby.



Buoyancy World 1.0 has been a huge success. Eco Koh Tao and Crystal Dive contributed, amongst other smaller objects a ‘Bamboo Forest’. It wasn’t the smartest choice of material and the bamboo quickly deteriorated and disintegrated. In 2011 we replaced the old bamboo with steel uprights which returns the structure to its former glory and will ensure its long term survival and worth. This is a classic example of us learning from our mistakes, developing solutions and solving problems.

In 2011 the community decided to expand the site through the Buoyancy World 2.0 project. Fewer dive schools participated but the quality of structures highlighted the lessons learned from previous attempts.



Crystal Dive & Eco Koh Tao took an integrative approach to the construction of a 'shipwreck' built especially to provide buoyancy training games and aids but also develop the artificial ecosystem through extensive biotic growth. Construction of the ship took almost a month and subsequent to its deployment 588 fragments from our coral nursery in Twins have been transplanted onto the ship. Survival rates have been exceptional and settlement & attachment to their new home has been similarly impressive. This after only a couple of months!

Subsequent to transplant the nurseries have been replanted and are also performing well. In addition to our main structures at Twins Eco Koh Tao has been

helping to develop other dive schools structures using similar integrative processes transplanting corals and introducing a biotic element to our man made reef.

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Buoyancy World is one of our most successful creations yet and continues to improve as our work benefits from prior experience and the implementation of best practices in reef rehabilitation processes.



Buoy lines

With so much boat traffic frequenting the surrounding waters installing, repairing and maintaining buoy lines is one of the most important conservation jobs conducted by volunteers on the island. Throughout 2013-14 Eco Koh Tao joined forces with the Save Koh Tao Community group and corporations to develop mooring anchors for lines around the island. Companies like Chevron, Salamandr Energy and PTEP Thailand all contributed funds to help us install large concrete

anchors around the island. 45 in total were installed many of them helped increase the number of moorings while some will enable us to remove moorings tied to coral heads and natural features.

Crystal Dive and Eco Koh Tao regularly undertook days to install new buoy lines, replace damaged ones and repair those in need of some maintenance. In addition as part of our overall island



zoning we helped install yellow floated ropes to protect shallow snorkelling areas in many of the bays around the island. It is an on going process requiring constant attention. Limited resources mean that long term solutions are difficult to come by. we are constantly working to develop new methods of installation and anchoring so that lines last longer and are not always attached close to fragile reef environments.

(www.ecokohtao.com/probuoys.html)

Conclusion



2014 has been a very productive and successful year in the 'Eco' department. Our environmental commitment took on new levels with Crystal Dive and as a community as a whole. This in part was driven by excellent leadership and in part by the increasing demand by consumers for a more environmental approach to diving. Recreational divers have been searching for more understanding leading to a demand for courses like Reef Check. From a career perspective the development of exceptional programs like the Marine Resource Management Course has allowed professional divers seeking a career in marine conservation and research an avenue to develop important access to the practical elements of the coral reef environment,

Our involvement with the Save Koh Tao Community Group has been exceptional with Crystal Dive and Eco Koh Tao being awarded for their continued support.

Our environmental commitment has been driven by excellent leadership and in part by the increasing demand by consumers for a more environmental approach to diving.

Acknowledgements

The achievements of Eco Koh Tao would not have been possible without the tireless support of its members and contributors throughout the year. This includes but is not limited to

Crystal Dive Resort and all its management and staff.

Linda Zijlstra

Simon and Jenny Dowling

Project Aware

Reef Check International

Marine Conservation Koh Tao

Save Koh Tao

All the many volunteers and students who contributed to our great work throughout 2014



Nathan Cook

Project Manager and Coordinator

Environmental Awareness & Action

Eco Koh Tao

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