



PROJECT SEAHORSE

advancing marine conservation

2018 ANNUAL
REPORT

Director's Message

Dear friends,

As our Ocean Planet completes another trip around the sun, I am delighted to share some of our Project Seahorse actions and achievements in 2018.

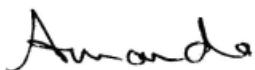
It's been a year where – in addition to advancing conservation, of course – we reflected and regrouped... and pondered next steps. In particular, I benefited personally from eight months of sabbatical travel until August. Some of that time was spent visiting conservation projects in South Africa, where I managed to get tick bite fever. Sadly that reduced my time with our colleague Louw Claassens and her great work to help the most threatened seahorse in the world, the endemic Knysna seahorse. The rest of my time was spent at the Centre National de la Recherche Scientifique in Montpellier France, where I had the chance to write and think... and to watch the seahorses of the Étang de Thau with our wonderful collaborator Patrick Louisy.

We are now ramping up to put a big push on bottom trawling. It's high time this terribly abusive destruction of the ocean ended. Most people know that already but can't quite see how to make the necessary changes. Luckily two of our own, Xiong Zhang from China and Tanvi Vaidyanathan from India, have ideas and relationships that can really help move the needle in their own countries. The rest of us are eagerly supporting this work, of course.

In a new venture, I'm thrilled to be Chair of the Marine Conservation Committee for the International Union for Conservation of Nature (IUCN) Species Survival Commission (iucn-sscmarine.org). The IUCN unites 1350 conservation organisations, so it's an exciting challenge to support, connect and promote its expertise in marine species conservation globally. I get to share Project Seahorse experience and knowledge with experts on many other marine species, while learning from them in ways that advance our own mission.

On behalf of everyone at Project Seahorse, I am so very pleased to thank our donors, collaborators, and team members for your tireless support and commitment. Together we're going to make our next trip around the sun a special one (#OceanOptimism).

Yours, in conservation



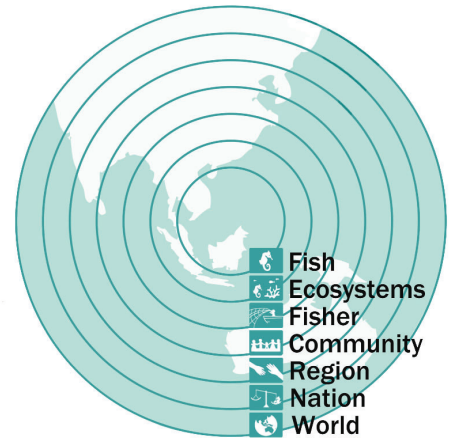
Prof. Amanda Vincent
Director and Co-Founder, Project Seahorse



Amanda and Mieke Callebaut (Managing Director, Guylian Belgian Chocolates) at a signing ceremony in Lisbon in the presence of his Majesty King Filip of Belgium. Project Seahorse and Guylian Belgian Chocolates celebrated 20 years of partnership and success in marine conservation around the world. Photo by Amanda Vincent/Project Seahorse.

MISSION STATEMENT

Project Seahorse is committed to
the conservation and sustainable use
of the world's
coastal marine ecosystems

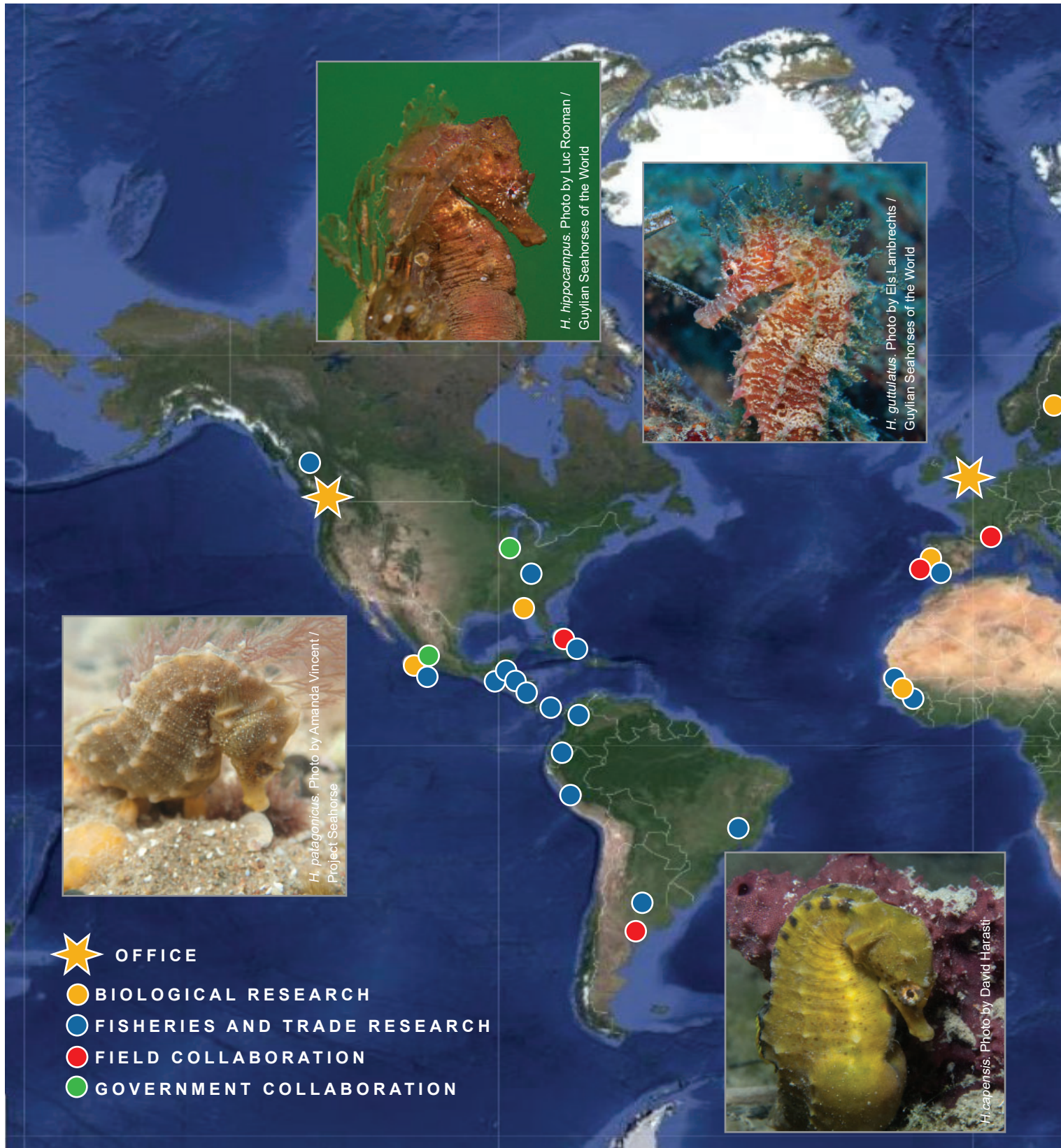


Seahorses are iconic, flagship species that focus attention on a wide range of marine conservation concerns, including overfishing and destructive fishing practices, sea-filling, pollution, the climate crisis and much more.



Long-snouted seahorse (*Hippocampus guttulatus*) "having a conversation" with a Mediterranean rainbow wrasse (*Coris julis*).
Photo by Lars Reichenbach/Guylian Seahorses of the World 2018, Grand Prize winner.

Where we work



We are engaged in cutting-edge research and highly effective conservation action, in collaboration with governments, local communities, and other stakeholders, in 34+ countries and 6 continents.



Starting with seahorses

Threatened by non-selective gear and other bad fishing practices, as well as habitat degradation, seahorses are flagship species for a wide range of marine conservation issues. Through biological and social research, management and policy change, field conservation, and citizen science, Project Seahorse is dedicated to ensuring that seahorse populations and their habitats are healthy and well-managed.

Partnerships for seahorse & pipefish conservation

Last year we established new partnerships in South Africa and France. We have been fortunate over the last two decades to have built lasting relationships with many wonderful researchers around the world, including Argentina, Brazil, the Bahamas, Thailand, and many more.

Partnerships play a key role in our efforts to secure seahorse populations and their habitats globally. Long-lasting conservation is achieved through collaboration with a range of extraordinary friends and colleagues, including

other researchers, governments, local communities, businesses and individual donors.

Increasingly, one of Amanda Vincent's highest priorities is to empower and support colleagues all around the world to conserve seahorses and their habitats. Her focus is on mentoring younger colleagues and those in developing countries to succeed in practical seahorse conservation.

During her sabbatical year Amanda spent some time in South Africa with Dr. Louw Classens - director of the

Knysna Basin Project. Knysna is home to the Endangered, endemic Knysna seahorse.

Amanda then spent five months in France. During this time she cultivated a wonderful partnership with Dr. Patrick Louisy, a passionate champion for seahorses and pipefishes. Patrick pioneered citizen science programs in France and is also a well-known underwater photographer.

We look forward to many more fruitful collaborations and partnerships, all in the name of saving seahorses... and the seas.



Sincere thanks to the Oceanário de Lisboa, Oceano Azul Foundation and Guylian Chocolates Belgium for their support for the European meeting and for syngnathid (and marine) conservation in general.

More at iucn-seahorse.org

Some of the European syngnathid researchers and professionals gathering for the first time in Portugal at the Oceanário de Lisboa.



Korean seahorses (*Hippocampus haema*) mating in Kumamoto, Japan. Photo by Zhang Jinggong/Guylian Seahorses of the World 2018, 2nd Grand Prize winner.

Highlights

1ST GATHERING OF EUROPEAN SEAHORSE & PIPEFISH EXPERTS

For the first time, many of the Europeans who know seahorses & pipefishes best got together... and came up with really good ideas for conserving their populations. On 20-21 October 2018, the Oceanario de Lisboa and Oceano Azul Foundation hosted a gathering of researchers and other professionals from Portugal, Spain, France, Italy and Finland. Together, these seahorse & pipefish wizards began re-assessing the conservation status of Europe's seahorses and creating rapid response capacity to address the next conservation threat. They also launched into agreeing on common research protocols and setting up networks to connect those who care about these fishes. Most of the participants have been working in isolation, engaging with these fishes as additions to their day jobs, so this was a golden opportunity to rekindle their passion and advance a shared mission. The meeting was arranged by the global expert group* on these fishes and benefited from further kind sponsorship by Guylian Chocolates Belgium.

*IUCN Seahorse, Pipefish and Seadragon Specialist Group

GUYLIAN SEAHORSES OF THE WORLD

Congratulations to Lars Reichenbach and Danny van Belle, who won the Grand Prizes in our photo and video competition! Lars' beautiful photo of a Long-snouted seahorse "having a conversation" with a rainbow wrasse put a smile on our face, while Danny delighted us with a gorgeous (and informative) compilation of seahorse video clips. We use the images for our scientific work and to promote seahorse conservation. Be sure to look for images from the winners throughout this report and also on our website.

RECOGNITION FOR OUR DIRECTOR

Amanda Vincent, Professor in the Institute for the Oceans and Fisheries at The University of British Columbia, was awarded the Le Cren Medal by the Fisheries Society of the British Isles (FSBI). This medal is awarded those who have made a lifelong contribution to all aspects of the study of fish biology and/or fisheries science, with a focus on conservation, training or public understanding of the discipline. We are so proud!

Securing shallow seas

Shallow seas - which encompass the first 10 metres of depth along the world's coastlines - contain many of the planet's most valuable and threatened marine ecosystems, including estuaries, seagrasses, mangroves and reefs. Many of these habitats are home to seahorses. Project Seahorse combines conservation research, sustainable fisheries management, marine protected areas and stakeholder engagement to help safeguard shallow seas.

Where in the shallow seas are the seahorses?

We developed robust tools to help us find seahorses globally, and identify what habitats they prefer.

To conserve seahorses we need to know where they are found and what habitats they prefer. Given that we still don't have enough information, we need tools to help us figure it out.

Species distribution models are useful for analysing a species' range and the habitats they prefer, as Dr. Xiong Zhang showed during his PhD at Project Seahorse.

Xiong found that he could create reliable models for 33 seahorse species by using "proximity to habitats" and integrating research-grade data, citizen science contributions, and museum-collection information.

Based on his models, he found that only 59% of the area within the global distribution ranges of seahorses could provide

suitable habitat for them. In total, the predicted suitable area for seahorses is nine million km² (2.5% of ocean surface), with large extents of geographical separation among species. He further found that the highest concentration of different seahorse species (species richness) was mainly in the Philippines. Proximity to sponges was also an important habitat variable. Worryingly, Xiong found that 12 seahorse species currently considered "Data Deficient" under IUCN Red List criteria were actually likely to be threatened.

Habitat, prey & predators

Seahorses have undergone dramatic population declines, in part due to habitat degradation, so a better understanding of which components of their environment actually matter will equip us with information that has important conservation benefits.

Clayton Manning, during his MSc studies at Project Seahorse, was the first to investigate explicitly the relative importance of habitat, prey, and predators to the Endangered *Hippocampus whitei* populations in the wild (in an estuary in New South Wales, Australia). He found that

all three parameters - habitat, prey, and predators - mattered to populations to some extent. For example, within the seagrass bed with the greatest number of *H. whitei* individuals preferred locations that were deeper, had denser seagrass, more prey types that live on the surface of seagrasses and fewer predators.

In the future, evaluations of other animal populations would also benefit from such holistic approaches, ones that simultaneously consider the many ways that an animal interacts with its environment.



Short-snouted seahorse (*Hippocampus hippocampus*). Photo by Brigitte de Groof/Guylian Seahorses of the World.

Making trade & fisheries sustainable

Project Seahorse team members track the global seahorse trade through a combination of field work and data analysis. In the 1990's we uncovered the vast geographical and economic scope of this trade. About 15-20 million seahorses are traded, live and dead, around the world each year. They are used in traditional medicine, for display in aquariums, and as curios. Working with the United Nations' global agreement, the Convention on International Trade in Endangered Species (CITES), we continue to make notable contributions to trade regulation.

Global seahorse smuggling ignores bans

We revealed that substantial international smuggling of seahorses continues unabated, from many countries that ban such exports.

Working in collaboration with local traders in Hong Kong's traditional Chinese medicine marketplaces, our researchers Dr. Sarah Foster and Dr. Ting-Cho Kuo (and field researcher Anita Wan), found evidence of vast illegal and unrecorded imports in dried seahorses from many countries that ban seahorse exports. Indeed, traders' accounts indicated that 95% of dried seahorses had been imported from source countries - mainly Thailand, the Philippines

and Indonesia - that did not allow seahorse trade. India, Malaysia and Viet Nam were also implicated.

CITES member countries are required to limit export of Appendix II listed species, like seahorses, to levels that are safe for wild populations. Some countries elect to suspend or stop official seahorse exports as a pre-emptive management measure if they feel unable to meet CITES provisions. Despite such bans, our study indicated that trade continued from several Asian countries, such that their seahorse populations may be as threatened as ever.

Nonselective fishing gear drives trade persistence. Gears such as trawls and gillnets scrape the bottom of the ocean, incidentally catching seahorses and other valuable species. At least 37 million seahorses have been obtained as bycatch each year in the process of nonselective fisheries. We certainly need to insist on better enforcement of trade regulations, including bans. However, and more urgently,

we need to end indiscriminate extraction of marine species by bottom trawls and other non-selective fishing methods.

"Seahorses are quirky marine species and not as noticeable as endangered terrestrial species such as elephants and tigers. However, stopping their exploitation is as vitally important to our planet's biodiversity" said Sarah. "I'd rather have imperfect, but improving, CITES implementation for ongoing trade than a completely black-market trade that we can't even track, let alone manage."

CITES needs to enhance its activities and work more closely with its member nations to ensure stricter enforcement. Importers must not accept seahorses from source countries with trade bans, at risk of confiscation and stiff fines. It is going to take all actors in this game to curb the substantial illegal trade that riddles the commerce in wildlife. Project Seahorse will always do its part.

Achieving global trade regulation for seahorses, under CITES

We are mobilizing CITES to address our discovery of a large illegal trade in seahorses, with proposals for action supported by the USA, Maldives, Monaco, Seychelles and other Parties... We are also preparing for votes at CITES 18th meeting of the Conference of the 183 Parties.

Did you know that as a direct result of our work – in ecology, taxonomy, trade, management, and policy – CITES voted in 2002 to restrict export of seahorses to sustainable levels, and only from legal sources (Appendix II listing)? This was an epic breakthrough, and incredible win for marine fishes. Seahorses became the first marine fishes on CITES Appendix II since the inception of CITES in 1975, overcoming vehement opposition.

This precedent opened the door to subsequent export controls on sharks, rays, and reef fishes. Our work led to the suspension of legal exports of seahorses from Viet Nam (2013), Guinea, Senegal and Thailand (2016). As of 2018, these Parties and others that previously exported a total of 96% of the world's dried seahorses had suspended trade.

Baskets of bycatch destined for chicken feed in Mandapam north, India. Photo by Amanda Vincent/Project Seahorse.



Dried seahorses for sale in Hong Kong. Photo by Tyler Sitem/Project Seahorse.

Training conservationists & building capacity

Under greater pressure than ever before, our oceans need more champions and more optimists. Project Seahorse is training the next generation of scientists, conservationists, and advocates to stand up for our oceans. To date we have trained 175+ professional conservationists (and ~80 volunteers) around the world, with backgrounds ranging from the biological sciences to law to the arts. We also mentor and support many other colleagues.

Where are they now?

*Our alumni
have gone on to
build impressive,
difference-making
careers as scientists,
policymakers and
conservationists.*

So, where are they now, and what are they doing?

This year we put the spotlight on a few of the wonderful people who have worked with us in different capacities - volunteers, undergraduates, and interns. Here is a snapshot of what some of them are doing for the oceans. More on others next year.

Allison Perry, PhD: Deputy Director, Research & Expeditions, [Oceana EU](#).

Andres Cisneros-Montemayor, PhD: Program Manager & Research Associate, [Nereus Program](#) at The University of British Columbia, Canada.

Anna Magera, MSc: Shellfish Resource Manager, [Fisheries and Oceans Canada](#).

Jade Barnaby, MA: Sustainability Manager, Aesop, Melbourne, Australia.

Jana McPherson, D.Phil: Conservation Research Senior Specialist, Centre for Conservation Research, [Calgary Zoological Society](#), Canada.

Julia Baum, PhD: Professor at the University of Victoria, Canada. Director of the [Baum Lab](#), which focuses on ocean resource management, conservation and policy.

Kristin [Lunn] Worsley, MSc: Manager of Marine and Coastal Resources, [Ministry of Forests, Lands, Natural Resource Operations and Rural Development](#), BC, Canada.

Marie-Annick Moreau, PhD: Teaching Fellow in Environmental Anthropology / Human Ecology, [University College London](#), UK.

Noella Gray, PhD: Associate Professor, [University of Guelph](#), Canada. She focuses on the political ecology of marine conservation.

More information - www.projectseahorse.org/about-alumni.



Short-spouted seahorse (*H. hippocampus*) Photo by Janny Bosman/Guylian Seahorses of the World 2018 - 3rd prize (tie)

Highlights

CONSERVATION OUTREACH TOOLKITS

We are creating many popular outreach toolkits in collaboration with IUCN Seahorse, Pipefish and Seadragon Specialist Group members. The toolkits provide an array of resources for like-minded groups to use for education and community programming, and when engaging with policy-makers. We also developed a toolkit to help CITES Authorities implement the Appendix II listing of seahorses and overcome challenges to ensure that wild seahorse populations are sustainable. Our latest toolkits include:

- CITES for seahorses: iucn-seahorse.org/cites-toolkit
- Sweetings Pond, Eleuthera Island, Bahamas: iucn-seahorse.org/eleuthera
- Seahorses in the Ria Formosa / Cavalos-marinhos na Ria Formosa (Portugal): iucn-seahorse.org/toolkits/portugal

More toolkits - www.projectseahorse.org/conservation-tools?category=Toolkits

CONGRATULATIONS EMILIE & IWAO


We are delighted to report that Emilie Stump and Iwao Fujii both graduated in 2018 with Masters of Science, Zoology. Emilie is now an Environmental Specialist at the Florida Department of Environmental Protection's Coral Reef Conservation Program, USA. Iwao is an Associate Program Officer at the Ocean Policy Research Institute for the Sasakawa Peace Foundation, Japan.

iSEAHORSE - FROM STRENGTH TO STRENGTH

Our iSeahorse citizen science platform continues to grow from strength to strength. We now have 900+ users, many of whom share their sightings on a regular basis. More than 4200 seahorse sightings have been reported and the known range for many species has been extended by over 1000 km in some cases. We also have 22 National Seahorse Experts and 22 Ambassadors, who provide their expertise and advocate for seahorses around the world.

SOCIAL MEDIA METRICS @PROJECTSEAHORSE

Twitter: @projectseahorse 6172 followers (20K + impressions per month), @AmandaVincent1 4217, and @HeatherKoldewey 4998 followers
Instagram: 3600 followers
Facebook: 7608 followers (average 7000+ likes / week)



Publications

(peer-reviewed)

Thorny seahorse (*Hippocampus histrix*).
Photo by Gunther Meiresone/Guyanese Seahorses of the World 2018, 3rd prize (tie).

Aylesworth, L. & Kuo, T.-C. 2018. Reporting time period matters: quantifying catch rates and exploring recall bias from fisher interviews in Thailand. *Canadian Journal of Fisheries and Aquatic Sciences*, doi.org/10.1139/cjfas-2017-0169

Correia, M., Koldewey, H.J., Andrade, J.P., Esteves, E. & Palma, J. 2018. Identifying key environmental variables of two seahorse species (*Hippocampus guttulatus* and *Hippocampus hippocampus*) in the Ria Formosa lagoon, South Portugal. *Environmental Biology of Fishes*, doi.org/10.1007/s10641-018-0782-7

Kleiber, D., Harris, L. & Vincent, A.C.J. 2018. Gender and marine protected areas: a case study of Danajon Bank, Philippines. *Maritime Studies*, doi.org/10.1007/s40152-018-0107-7

Kuo, T.C. & Vincent, A.C.J. 2018. Assessing the changes in international trade of marine fishes under CITES regulations – A case study of seahorses. *Marine Policy*, 88:48–57. doi.org/10.1016/j.marpol.2017.10.031

Kuo, T.C., Laksanawimol, P., Aylesworth, L., Foster, S.J. & Vincent, A.C.J. 2018. Changes in the trade of bycatch species corresponding to CITES regulations: the case of dried

seahorse trade in Thailand. *Biodiversity and Conservation*, doi.org/10.1007/s10531-018-1610-2

Manning, C.G., Foster, S.J., Harasti, D. & Vincent, A.C.J. 2018. A holistic investigation of the ecological correlates of abundance and body size for the endangered White's seahorse *Hippocampus whitei*. *Journal of Fish Biology*, doi.org/10.1111/jfb.13745

Selgrath, J.C., Gergel, S.E. & Vincent, A.C.J. 2018. Shifting gears: Diversification, intensification, and effort increases in small-scale fisheries (1950–2010). *PLoS ONE*, 13(3): e0190232. doi.org/10.1371/journal.pone.0190232

Woodall, L.C., Otero-Ferrer, F., Correia, M., Curtis, J.M., Garrick-Maidment, N., Shaw, P.W. & Koldewey, H.J. 2018. A synthesis of European seahorse taxonomy, population structure, and habitat use as a basis for assessment, monitoring and conservation. *Marine Biology*, 165(1):19. doi.org/10.1007/s00227-017-3274-y

Zhang, X. & Vincent, A.C.J. 2018. Predicting distributions, habitat preferences and associated conservation implications for a genus of rare fishes, seahorses. *Diversity and Distributions*, doi.org/10.1111/ddi.127

For a complete listing of our publications visit www.projectseahorse.org/research-publications

Partners & donors

OUR PARTNERS & HOME INSTITUTIONS



The University of British Columbia hosts much of the team. Director and co-founder Prof. Amanda Vincent is a Professor in the Institute for the Oceans and Fisheries. www.oceans.ubc.ca



The Zoological Society of London is our other home base. Dr. Heather Koldewey, Project Seahorse's co-founder and Field Conservation Manager, is also Head of Marine and Freshwater Conservation Programmes ZSL. www.zsl.org

OUR MAJOR SPONSOR



Guylian Belgian Chocolates has been our major sustaining partner and sponsor for 20 years, providing truly extraordinary support for our conservation research and management projects around the world. Indeed, Guylian's commitment to marine conservation is matched only by the excellence and deliciousness of its chocolates. www.guylian.com

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our partners and donors for
their ongoing support
of our work to
advance marine conservation.
Together we will
save seahorses,
and the seas."*

For all past and present partners and donors see www.projectseahorse.org/partners-collaborators

Special thanks to an anonymous donor who for many years provided essential support to Project Seahorse. Thank you also to our many clever and hard-working volunteers and interns around the world for their enthusiasm and dedication.

Online

info@projectseahorse.org
projectseahorse.org
iseahorse.org
iucn-seahorse.org



projectseahorse
AmandaVincent1
HeatherKoldewey



Canada office

Institute for the Oceans and Fisheries
The University of British Columbia
2202 Main Mall
Vancouver, B.C.
V6T 1Z4 Canada
+1 604-827-5141

United Kingdom office

Zoological Society of London
Regent's Park
London NW1 4RY
United Kingdom

