



Landings Trends Toolkit

Surveying wild seahorse landings in support of conservation

Ver. 1.0

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S.J. Foster², T.-L. Loh^{1,2} & C. Knapp¹

www.iSeahorse.org

iseahorse@projectseahorse.org

Daniel P. Haerther Center for Conservation and Research¹

John G. Shedd Aquarium

1200 S. Lake Shore Drive • Chicago, IL 60605, USA

Project Seahorse²

Fisheries Centre, The University of British Columbia

2202 Main Mall • Vancouver, BC, V6T 1Z4, Canada



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Table of Contents

Introduction 4

- What is iSeahorse? 4
- Why monitor seahorse landings? 4
- Terms and conditions 4
- About this Toolkit 5
- How your data will be used 6
- How you can use your data 6
- Why seahorses? 7
- Seahorses in trade 8

Getting Started 9

- Participant registration 9
- Get to know your seahorses! 9
- Starting a new survey site 10
- Fill out a Landings Site Datasheet 10
- Existing survey sites 11

Conducting Seahorse Surveys 12

- How often should I survey the sites? 12
- What you will need for your survey 12
- How many landing sites should I survey? 12
- Who should I interview? 12
- Measuring fishing “effort” 13
- Completing the Landings Survey Datasheet for each interview 14
- Sending data to iSeahorse 14
- Collecting seahorse data 15
- What if I didn’t find any seahorses? 16
- Unknown seahorse species 17

Frequently Asked Questions 18

- General questions 18
- Survey protocol 18
- Seahorse and marine conservation 19

Appendix A: Landings Site Datasheet 20

Appendix B: Landings Survey Datasheet 22



INTRODUCTION

What is iSeahorse?

iSeahorse is a tool for seahorse science and conservation.

iSeahorse harnesses the power of “citizen scientists” — anyone, anywhere in the world who sees a seahorse in the wild — to improve our understanding of these animals and protect them from overfishing and other threats.

Who can help?

This toolkit is aimed at stakeholders with a basic knowledge of local fisheries — researchers, government officers, conservation groups, fishers — who want to monitor seahorse landings with the aim of understanding trends in seahorse populations over time. This monitoring can be done as a standalone initiative or as part of ongoing port sampling activities for other species.

Why monitor seahorse landings?

We can find clues to the adverse impacts of fishing practices by monitoring seahorse landings over time for declines in the following:

- Relative abundance
- Geographic distribution
- Mean body size of animals
- Frequency of male pregnancy (can indicate disruption of breeding activities)
- Sex ratio

We are particularly interested in monitoring landings data to generate estimates of catch per unit effort (CPUE). CPUE is considered an index of population size, thus fluctuations in CPUE are assumed to provide informative relative indices of abundance.

What is iSeahorse Trends?

iSeahorse Trends is a seahorse monitoring program that will greatly increase the power of iSeahorse to contribute to seahorse conservation and management. This program will allow us to find out if seahorse populations are declining, increasing or staying stable through time, and so document seahorse population health through sustained monitoring by generating population trends.

The iSeahorse Trends program aims to monitor seahorse populations using two complimentary approaches. One is through underwater surveys of seahorse populations — you can find more information on this approach at www.iseahorse.org/trends. The second is through the monitoring of seahorse catches from fisheries once they arrive on land — termed “landings.”

Terms and Conditions

Please see www.iseahorse.org/terms-conditions for the terms and conditions of your participation in iSeahorse.



INTRODUCTION

About this toolkit

This toolkit will guide you in conducting long-term monitoring of seahorse populations by sampling landings at ports, docks, markets and other places fish are landed.

If a standard method is followed by all survey groups, it means that data can be compared through time and across different locations. The approach outlined here is designed to generate a basic understanding of catch trends over time while keeping the methods used practical and easy to implement across a wide range of situations. The approach can be developed further in order to explore reasons for observed trends in fish populations. Please contact us at iseahorse@projectseahorse.org if you are interested in more elaborate fisheries monitoring plans.

Check for new versions regularly

This toolkit and supporting material are living documents so please check for new versions regularly at www.iseahorse.org/trends-landings, and contact us at iseahorse@projectseahorse.org with any suggestions for improvement. We want to hear from you.



Photo: Shedd Aquarium/Brenna Hernandez



INTRODUCTION

Data

It is critical to understand that for all indices of fishing impacts, catch data alone are of limited value.

Catch data **must** be accompanied by corresponding data on fishing effort to be useful for tracking trends. Indeed the key to monitoring landings of any species is to collect information on fishing effort.

How your data will be used

Trends data from both underwater and landings monitoring helps to identify seahorse populations that are in need of further research and conservation management, and allows policymakers and managers to set priorities based on scientific information rather than anecdotal observations. By sharing results, plus collaborating with and supporting local groups, we can all work to improve the fate of seahorses while engaging more people in ocean conservation.

By contributing to iSeahorse Trends, you will be making an important contribution to the conservation of seahorses and their habitats! Your data will be entered into the global database hosted at www.iSeahorse.org, together with data from other monitoring groups around the world. Following seahorse catches through time will enable researchers to track population status, reveal potential impacts from human activities, understand if existing management measures are helping seahorses or if further work is needed to secure seahorse populations, and discover new aspects of seahorse biology. This information will be compiled and released to the relevant authorities and influence direct conservation action.

How you can use your data

We also encourage you to use the data you collect for taking conservation action, especially if you notice any critical trends such as declines in CPUE. But you must be cautious when interpreting CPUE data as numerous factors affect catch rates—for example:

- Changes in fishing effort at the level of the fishery can affect individual fisher catch rates without necessarily reflecting a change in actual seahorse populations—there may have been a change in fishing locations or fishing gears, which changes the fisher's ability to catch the seahorses independent of changes or stability in the population.
- Landings data do not account for the seahorses that are never sorted from the catch, are thrown back or are not reported by the fishers. Indeed, fishing may be a big and unknown pressure even where landings data are scarce. These data should be used as indices rather than direct estimates of seahorse bycatch rates or population sizes.

If you do observe a trend in your landings data that suggests a potential for adverse fishing impacts, there are a few immediate steps you can take. You should start by notifying local experts—including government fisheries departments and non-governmental organizations. You should also alert Project Seahorse, the IUCN Species Specialist Group for Seahorses and related groups. There are many other ways to be an advocate for seahorses in your area. See www.iseahorse.org/action for some suggestions. In the coming months we will be adding a toolkit for taking conservation action and supporting features to the website, so please check back.



INTRODUCTION

Why seahorses?



Photo: Shedd Aquarium/Brenna Hernandez

Seahorses (species of the genus *Hippocampus*) are unusual, funny-looking fishes that live in a variety of important marine habitats, which include seagrass beds, kelp beds, mangroves, estuaries and coral reefs. Unlike most other fishes, seahorses move slowly, have small home ranges and typically mate for life, and so are likely to be affected by habitat disturbances and overfishing. Seahorses are heavily traded around the world for traditional medicine (especially traditional Chinese medicine), curios and aquaria displays. Most seahorses are caught as bycatch by trawlers in the tropics that drag large nets along the ocean floor catching shrimp and fishes, but also everything else in their path.

Despite their vulnerability, we do not know the full extent to which human activities impact wild seahorse populations. Currently, many seahorse species are considered “threatened” or “data deficient” on the International Union for Conservation of Nature Red List (IUCN, www.redlist.org), and all seahorse species are listed on Appendix II of the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES, www.cites.org).

Seahorse populations need to be preserved for ecological, biological, economic and medical reasons. These fishes are important predators on bottom-dwelling organisms; removing them may disrupt ecosystems. Their extraordinary life

history — only the male becomes pregnant and pairs are monogamous in many species — provides us with an unusual opportunity to expand our understanding of reproductive ecology.

Subsistence fishers in some nations make a substantial portion of their annual income catching seahorses, and that dependence could increase as other fisheries decline. Many forms of traditional medicine employ seahorses to treat a range of conditions and ailments.

Seahorses are flagship species, charismatic symbols of the various ecosystems where they make their homes. Protecting seahorses means protecting these diverse habitats and all of the marine life that lives therein.

See www.iseahorse.org/seahorse-facts for more about seahorses!



INTRODUCTION

Seahorses in trade

The vast majority of seahorses in trade (as many as 95 percent) are caught incidentally (as bycatch) by trawlers.

Many seahorses are vulnerable to capture in trawls because they live in the same habitats as targeted species, live on the sea floor, swim slowly, and are the same size as targeted taxa. Seahorses are also caught in many other gear types, ranging from beach, shore and purse seines to crab pots. Sometimes fishers sort the seahorses from the bycatch. Many of these seahorses are destined for international trade, but sometimes the seahorses are thrown back (discarded) or sent with the rest of the low-value catch to be processed into fishmeal or fertilizer.

Most direct, targeted exploitation of seahorses is by small-scale or subsistence fishers in developing countries, although some are taken by aquarium collectors in developed countries.



Photo: Shedd Aquarium/Brenna Hernandez



GETTING STARTED Registration

Participant Registration

Before you start, email iseahorse@projectseahorse.org to register as a surveyor. Include your name, contact information and the location at which you propose to carry out surveys.

Get to know your seahorses!

Go to the Seahorse Identification Guide at <http://www.iseahorse.org/id-guide> to familiarize yourself with seahorse features and the seahorse species in your area before you start any surveys. Be sure to practice your seahorse identification skills as much as possible!

You can print these guides out and take them with you on the surveys.



Photos: Shedd Aquarium/Brenna Hernandez



GETTING STARTED

Starting a new survey site

Decide on where to look

Here are some suggestions for choosing potential fish landings sites, such as fishing ports, in your area:

- **Ask local fishers** if they have ever caught seahorses or know of fishers that have/do.
- **Ask local traders** if they know of seahorse landing sites.
- **Ask local conservation groups and/or researchers** about whether and where they have seen seahorses being landed nearby.
- **Ask local boaters, divers and dive shops** if and where they have seen seahorses being landed.
- **Visit your local fishing port or fish landing site** to ask if fishers are catching seahorses.

Fill out a Landings Site Datasheet (appendix A)

On this form, fill in what you know about the landings site where you will carry out your interviews. You will need to know:

- | | |
|---|--|
| • The site's name | • GPS Coordinates of the site (if known) |
| • Name of the nearest human population center (e.g. town) | • A description of the conservation or fisheries management measures used in the area (optional) |

Interview a fisher

See “Conducting interviews,” on page 13, for instructions.

You may not encounter any fishers that report catching seahorses at your site during your initial searches.

Report this information too. It is useful for us to know where seahorses are not being caught. Do not be discouraged — fishers may land seahorses at that site even if you did not find any on your first visit. Do try and survey the site again.



GETTING STARTED

Existing survey sites

Check for existing survey sites

Before you survey a new landings site, you should see if there are existing iSeahorse survey initiatives in your area. The most valuable information comes from repeat surveys of the same sites, even if you sometimes don't find seahorses.

- **To find an existing site**

Email iseahorse@projectseahorse.org to check for sites near you and the survey teams or surveyors who assessed those sites.

- **Review and submit changes**

Review the “Landing Site Datasheet” for the landing site at the start of each survey to see if anything has changed from the previous surveys (iSeahorse can send this to you). Submit any changes to iSeahorse.

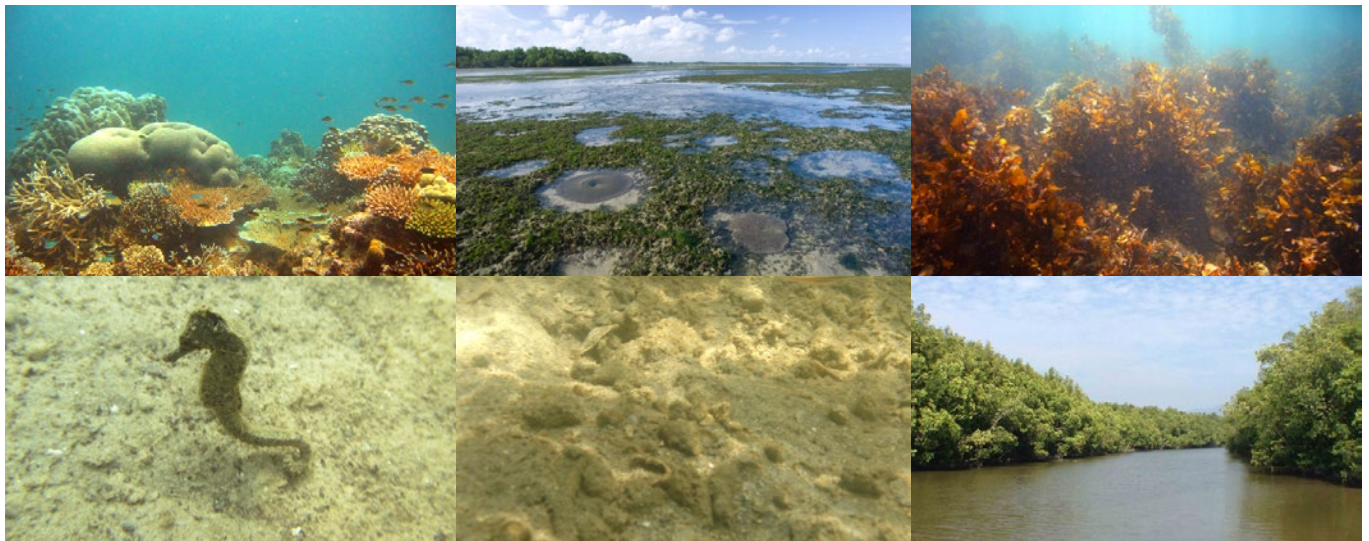


Figure 1. Potential seahorse habitats. Clockwise from top left: coral reef, seagrass bed, seaweed, mangrove forest, sand and rubble, and sand. Photos by Tse-Lynn Loh, Ria Tan/Wild Singapore, Jeffrey Low, Lindsay Aylesworth/Project Seahorse, Kerrie O'Donnell/Project Seahorse.



Figure 2. Clockwise from top left: trawlers in Gulf of California, Mexico; cages in Thailand; measuring seahorse landings in Sri Lanka; seahorse in trawl bycatch in Mexico; seahorse catch in the Philippines; target fishers in the Philippines. Photos by Sarah Foster, Lindsay Aylesworth, Nishan Perera, Jennifer Selgrath, Kerrie O'Donnell (all Project Seahorse).



CONDUCTING SEAHORSE SURVEYS

Basics

How often should I survey the sites?

You will need to evaluate how often sampling is feasible for you, seeking consistency in timing. Monthly surveys provide seasonal information, for example finding out peak months for seahorse catches, or even when seahorses reproduce. That said, we know you have resource constraints. Data collected every six months are still very useful, as are those collected once a year—but preferably at the same time every year. **We recommend repeating surveys at a landing site three times a year**—recognizing that more frequent monitoring will provide useful information more quickly.

What you will need for your survey

At the most basic level, you need a notebook to record what the fishers tell you. However, if you can take a datasheet and some simple tools with you, you will add valuable information to the survey.

Highly Recommended

- Clipboard with attached pencil
- Landings Survey Datasheet (Appendix B)
- A ruler or calipers (can be attached to the clipboard)
- Laminated Seahorse ID Guide (currently available for SE Asian seahorses in English, Thai, Vietnamese and Bahasa Indonesian at www.projectseahorse.org/NDF)

Optional, but very useful

- Waterproof camera
- Handheld GPS, or GPS-enabled device

How many landings sites should I survey?

We suggest you pick several “sentinel” or indicator sites that can be monitored at regular intervals over time to determine trends in CPUE and other catch parameters. How many and which sites you choose will depend on the questions that you are trying to answer. For example, if you would like to monitor all gears that catch seahorses, you may have to monitor several landings sites. Replication of sampling effort is also very useful—monitoring a few sites for the same gear will provide more robust information than data coming from only one site.

Who should I interview?

You should interview as many fishers as possible at landing sites (e.g. ports) to record information on their seahorse catches and the fishing effort used to obtain those seahorses. You may choose to interview fishers that use the same gear, or fishers that use different gears. As with number of sites, replication of sampling effort is very useful—interviewing several fishers will provide more robust information than interviewing only one.

You will record information from fishers that report catching seahorses and from those who do not. For fishers that report catching seahorses, it is ideal if they can show you seahorses they have captured but it is ok if they do not have them (e.g. they might have just sold them). Just be sure to indicate if you actually observed

the seahorses in your data submission. If a fisher tells you they usually catch seahorses but do not have any at that time, ask when you might be able to come back to observe their catches.



CONDUCTING SEAHORSE SURVEYS

Conducting interviews

Sampling should always take place at the same sites, at the same times of year, using the same method—and always include effort data!

It bears repeating that catch data alone are of limited value and must be accompanied by data on fishing effort to be useful for tracking trends. Only then can the data be used to understand trends in CPUE. We would be pleased to provide input into any landings sampling plans—please contact us at iseahorse@projectseahorse.org!

Stay respectful during interviews and surveys

Data are important, but so is respect for the fishers you want to interview. If a fisher is reluctant to talk or share particular details about their fishing practices or seahorse catches, thank them and move on. You do not need to complete the entire survey dataset for your efforts to be useful—just send in what you can.

Interview tips

Fishers will be more likely to speak with you if you engage in their work and show you actually care about them as well as the seahorses they catch. **Keep the interviews as casual, and conversational, as you can.** Try to start with normal, friendly conversation before jumping into the core of the interview. Ask them about their fishing activities in general and how the catches have been before moving onto the topic of seahorses.

Avoid interviewing people in groups. People tend to be more comfortable answering questions when they aren't speaking in front of a large audience, especially in front of other fishers or people with whom they do business.

Record whether the seahorses that fishers show you or tell you about come from a single fishing trip or multiple fishing trips (and so have been collected over time). Data from both are useful, but the effort measurement will change (see Measuring fishing “effort,” below).

Measuring fishing “effort”

It is important for us to know the “effort” expended in catching the seahorses being reported by the fisher so we can compare results with respect to both time and location. For example, seahorses are more common at a fishing ground where five individuals were seen during one day of fishing than five individuals within ten days (controlling for fishing method). Make sure you always ask about fishing effort and include that effort in your data submission.

In this toolkit, fishing effort is measured as “days spent actively fishing.” This is simply the total number of days fishers had their gear in the water. It does not include days spent travelling to or from the fishing ground. We recognize that the actual length, in hours, of different fishing days may vary—but the idea is to get a crude estimate of effort that can be used to compare catches of the same gear in time and space. If you would like to collect more robust information on effort then please contact us at iseahorse@projectseahorse.org.

Basic information about the type of fishing gear used to catch the seahorses should also be recorded. It is important that each interview record seahorses caught by different fishing gear separately. It is fine, however, if the seahorses represent several fishing trips. Just record the total days spent actively fishing across all trips.

Also useful, but not critical, is information about the fishing ground where the seahorses were captured—such as average depth and habitat type. Fishers may not want to share this information with you—in which case, do not worry about it.



CONDUCTING SEAHORSE SURVEYS

Starting landings surveys

Each interview with a fisher during which you ask about seahorses they may have caught is considered one survey interview.

You can interview as many or as few fishers as you like per site, just complete a separate datasheet for each interview and/or gear type. The Landings Survey Datasheet (Appendix B) can be printed or copied into a notebook.

Completing the Landings Survey Datasheet for each interview (Appendix B)

Record information about the seahorses the fisher has caught. This can simply be recording the total number of seahorses, or collecting more detailed information on species and sizes of seahorses in the landings. See next section for details. You will also need to ask and record the following:

- Take note of the **date** and number of the interview. Number each interview on a given date consecutively.
- **Give the fisher a unique but anonymous identifier** so you can tell fishers apart in your data. Repeat interviews with the same fisher over time can provide valuable information—but no one should be able to tell the true identity of the fisher from the identifier (i.e. do not use fisher name, vessel name, etc.).
- **Explain to the fisher the purpose of your questioning**—that you are asking questions to learn more about seahorse biology and populations in their area.
- Ask the fisher to describe the **depth and main habitat** at the fishing ground where the seahorses were caught.
- Ask about the effort it took to catch the seahorses they have shown you or are telling you about. Record the **number of days they spent actively fishing**. If the seahorses represent several fishing trips, record the total days spent actively fishing across all trips.
- Ask for the **dates** of the fishing trips, as well as the **average depth** where they were fishing.
- Ask the fisher about the gear used to catch the seahorses, taking note of:
 - **Gear category** – is the gear active (moves; e.g. a trawl net), or static (stays in one place; e.g. a trap) when it is fishing?
 - **Gear type** – choose from one of the following gear types: gill net, push net, trap, trawl net, other; if 'other' then describe on sheet.
 - Ask the fisher for additional gear details, such as mesh size, boat size, etc., or add this information after the interview based on observation. It would be very helpful if you could take a photo of the gear that caught the seahorses (optional).

Sending data to iSeahorse

Visit www.iseahorse.org/trends-landings to download a spreadsheet for your data. Complete it as best you can and email it to iseahorse@projectseahorse.org.

Please remember that any information is useful information.

Try to record all of this information, but gaps in your data are fine—do what you can. Some fishers will be very willing to talk with you, others less so. Just get what you can and move on if fishers are uninterested. The Landings Survey Datasheet (Appendix B) can be printed can be printed and brought with you or copied onto your slate.



CONDUCTING SEAHORSE SURVEYS

Collecting seahorse data

Ask fishers to see their seahorses

Ask fishers to see their seahorses and record the total number they have landed on your Landings Survey Datasheet (Appendix B).

If they do not have the seahorses with them, simply ask the fisher to estimate how many they had and record this information on your datasheet. Be sure to also record that you did not see the seahorses on the datasheet.

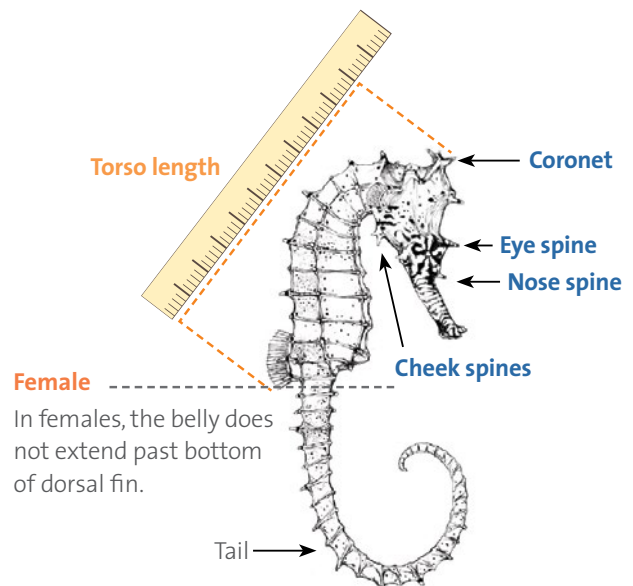
If they are willing to let you handle the seahorses, then you can gather more detailed information, as described below.

If they have the seahorses but are reluctant to let you handle them, ask if they will simply let you count or estimate how many they have, and record this information on your datasheet. Be sure to also record that you did in fact see the seahorses on the datasheet.

1. Measure torso length

Place your ruler or a grid behind the seahorse to measure **torso length** (see Figure 3).

- **Torso length** is the distance between the top of coronet and the base of the dorsal fin. Record to the nearest 0.5 cm.
- This should ideally be a **straight line measure**, with the seahorse's head at a 90 degree angle to its body. You may be able to adjust the head of seahorses that are not yet fully dried.
- Or measure torso length from a **photo** of the seahorse with a scale or grid (see point 3, next page).



2. Record the sex of the seahorse

- **Male seahorses** have a brood pouch under the belly (Figure 3). Sometimes, the pouch is not apparent but the male belly meets the tail at a tapered angle and extends beyond the base of the dorsal fin.
- **Female seahorses** do not have brood pouches. The belly of the female meets the tail at a right angle and ends level with the base of the dorsal fin (Figure 3).
- In **juvenile** (young) seahorses, the brood pouch may not be apparent. If you are not sure, record sex as "unknown."

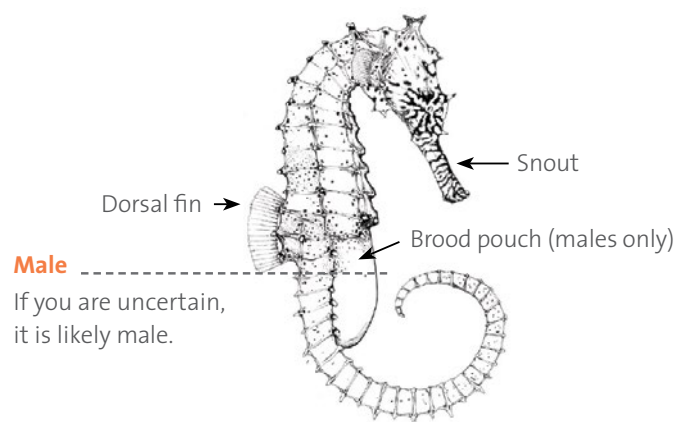


Figure 3. Side views of female and male seahorses.

- If the seahorse is male, record whether he is **pregnant** (swollen brood pouch) or not. Pregnant dried seahorses may still have obviously full brood pouches, but sometimes the pouch contents have been emptied so that the pouch is not full but wrinkled. See Figure 4 for examples.



CONDUCTING SEAHORSE SURVEYS

Collecting seahorse data

3. Take a photo

Finally, take a photo of the side profile of the seahorse with your ruler if you can (Figure 5). Make sure the facial spines and the coronet can be clearly seen in the photo. Record the photograph number on your datasheet.



Figure 4. A sample of caught and dried *H. spinosissimus*, where P = pregnant male, NP = not pregnant male, F = female. Photo by Lindsay Aylesworth/Project Seahorse



Figure 5. Kerrie O'Donnell/Project Seahorse

Repeat the above 3 steps for as many seahorses as you can.

Note that there may be more than one species of seahorses in the catch so you should confirm the ID of each one. Use the ID Guide and/or a key to determine which species are present.

If the fisher has a lot of seahorses, you may only be able to collect detailed information for some of them. This is still useful as we can extrapolate up from your sample based on the total number of seahorses in the catch.

What if I didn't find any seahorses?

You just spoke to ten fishers but no one reported ever catching seahorses. Now what?

Your data are still very useful! It is useful for us to know where seahorses are not landed as well as where they are. Submit your datasheet even if no seahorses were found in your survey. If fishers report catching seahorses at other times, but just do not have any, you can try the site again, because seahorses are generally caught in low numbers and might take a few tries to find, or may not be there now but could appear in a different season. Alternatively, you could try interviewing fishers at another site.



CONDUCTING SEAHORSE SURVEYS

Unknown seahorse species

What if I don't know the seahorse species?

Your data are still important! Record “unknown” on your datasheet for species, and be sure to take at least two good photographs of the seahorse.

- Photo of the side profile of the seahorse with a ruler. Include the entire head and dorsal fin, so torso length can be measured (Figure 5).
- A close-up of the side profile of the head, with clearly visible facial spines (especially cheek spines) and coronet (Figure 6).

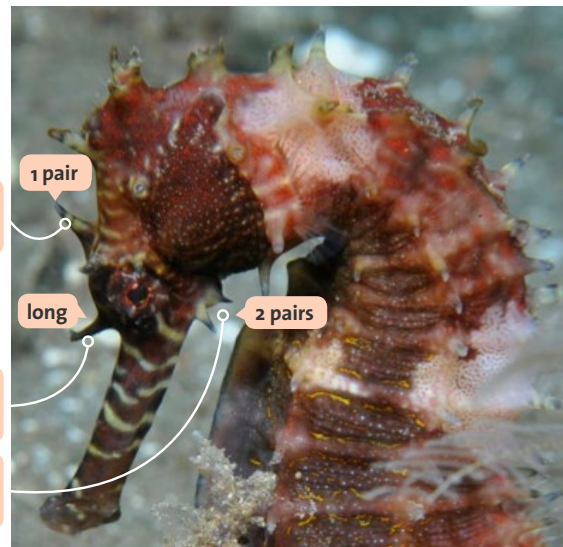
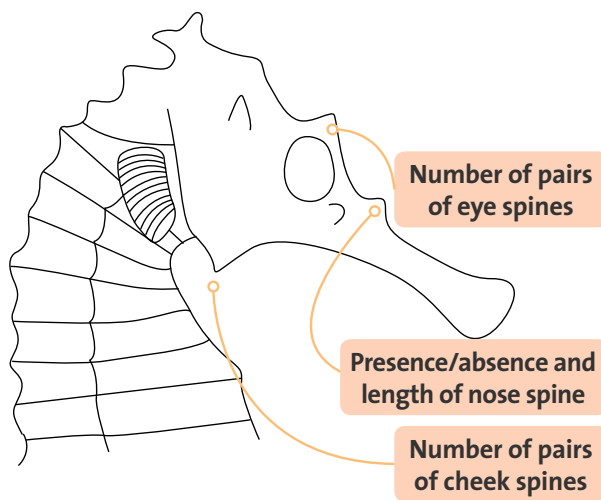


Figure 6. Close-up of side profile of seahorse head (*H. barbouri*). Note that the facial spines and coronet are clearly visible. Photo by Theophile Peeters/GuyLian Seahorses of the World 2012.

No camera?

If you do not have a camera, record as many of the following characteristics as you can:

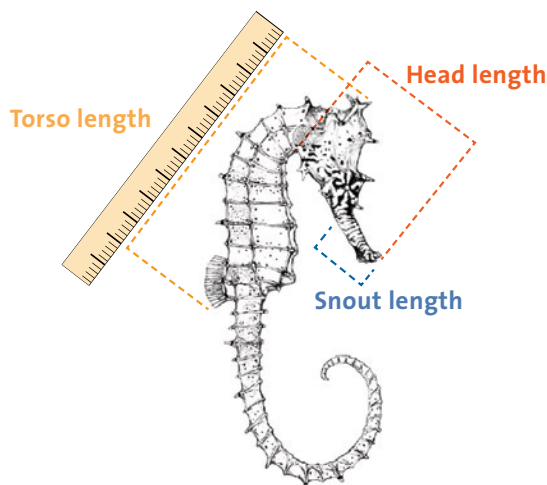


Figure 7. How to measure head length, torso length, and snout length.

- Torso length (Figure 7)
- Head length (Figure 7)
- Snout length (Figure 7)
- Number of pairs of cheek spines (Figure 6)
- Number of pairs of eye spines (Figure 6)
- Presence/absence of nose spine, whether it is long (prominent) or short (low) (Figure 6)
- Any other distinguishing features, e.g., spines or bumps on body, stripes on snout/tail

Send your photos and accompanying measurements to us at iseahorse@projectseahorse.org and we can help you ID your seahorses.



FAQ

General questions

Who can join seahorse surveys?

This toolkit is aimed at stakeholders with a basic knowledge of local fisheries — researchers, government officers, conservation groups, fishers — who want to monitor seahorse landings.

However, anyone who sees seahorses in the wild, including divers, photographers, scientists and other nature-lovers, can join in on seahorse surveys in their marine habitats using the toolkits at www.iseahorse.org/trends.

What if I want to survey seahorses underwater?

Data on wild seahorses monitored in their marine habitats, underwater, are an important complement to landings data. You don't even need to swim as you can survey seahorses found in inter-tidal coastal areas such as rock pools during low tides. You can find more information on this approach at www.iseahorse.org/trends.

If I can't swim, can I still survey seahorses?

You don't even need to swim as you can survey seahorses found in intertidal coastal areas such as rock pools during low tides.

What are the main threats to seahorses?

As with many other fish species, seahorses face threats on many different fronts — almost all from human activities.

- Many are also targeted by fishers for use in traditional medicines, tonic foods, souvenirs and the live ornamental aquarium trade.
- The majority are caught in non-selective fishing gear, predominantly in trawls. Many of these seahorses get used for traditional medicines, tonic foods and souvenirs.
- Habitat degradation and loss, such as from destructive fishing gear, coastal development and pollution.

I found a seahorse/took a photo of a seahorse on a dive/snorkel/walk. What do I do?

Congrats! Seahorses are not easy to find, so well done! In addition to seahorse surveys, we collect information on seahorse sightings. It is very useful to know where seahorses occur. Do register on www.iSeahorse.org and log your sighting and/or upload your seahorse photo.

Survey protocol

How do I join a seahorse survey?

Start by registering with iSeahorse! Contact the iSeahorse Coordinator at iseahorse@projectseahorse.org to find out about existing survey sites before registering a new site, to avoid duplication of effort.

Do you offer training workshops for seahorse surveys?

We will offer hands-on training periodically for the underwater surveys only. Check www.iSeahorse.org for the next available workshop and location. Training materials can also be found on our website. However, we are pleased to provide one-on-one input into landings surveys — just contact us!



FAQ

I'm not sure about my seahorse ID, what should I do during the survey?

It is important for us to keep accurate records from the surveys. If you're unsure of the seahorse species, put "unknown" in the species box and upload photos of the seahorse. Also see the section on "unknown seahorse species" for the list of characteristics that will help you identify the seahorse later. You may put the suspected species name in the Remarks section of the survey datasheet.

Is there a minimum number of fisheries I should interview or ports I should visit for the survey?

No, any data you can contribute will help a lot! However replication of survey effort — interviewing many fishers at several ports — will greatly increase the value of your data and the rate at which we can begin to notice trends.

I've found a site with lots of seahorses and would like to do more rigorous surveys. What should I do?

Wonderful! We're happy to help you set up a more detailed survey program. Please get in touch by emailing iseahorse@projectseahorse.org.

Seahorse and marine conservation

Now that I've completed a seahorse survey, what can I do with my data?

We hope the survey data will provide the information you need to take direct conservation action to protect seahorses. If you see worrying trends in your data, you should start to take action by notifying the local experts of your observations — including government fisheries departments and non-governmental organizations. You can also alert Project Seahorse, the IUCN Species Specialist Group for Seahorses and related groups.

There are plenty of ways to make a difference for marine conservation as an individual.

See www.iseahorse.org/action for ways you can help seahorses.

I can't find any seahorses. Does this mean seahorses are in trouble?

Not necessarily. Seahorses generally occur in low densities and are patchy in their distribution, which means they are normally caught in low numbers by any individual fisher. You may have to re-survey a site a few times before you encounter a fisher with any seahorses. However, if fishers tell you they used to catch lots of seahorses but no longer catch them, then this could indicate a decline in the seahorse population that warrants further investigation.

I was walking along a pier and a fisherman pulled up a seahorse in a net.

Would this information be useful to iSeahorse?

Yes, fishing and gleaning activities can provide information on where seahorses live as well. Politely ask if you could take a closer look at the seahorse and record information for iSeahorse Sightings (species, date, time, location, photograph). If the fisher is not keeping the seahorse, and it is still alive, try to encourage the fisher to release the seahorse back into the water.



Appendix A

Landings Site Datasheet



iSeahorse Trends

Landings Site Datasheet

Basic information

Country

Province/State/Territory

Site name

GPS Coordinates (if known)

Nearest human population center (e.g. town, city)

Name of surveyor

Surveyor affiliations and contact information

Optional detailed information

Other site information (e.g. size of fish landings site, types and numbers of gears/boats that land there, etc.)

Describe any conservation or fisheries management measures that apply in the area (e.g. fishing restrictions, national parks, access restrictions, etc)?

Attach related files (optional): (e.g. dated photo of area, map of area, related publications, news articles, etc.)





Appendix B

Landings Survey Datasheet



iSeahorse Trends

Landings Survey Datasheet

Complete both sides of sheet for each interview—you may need to use additional sheets for many seahorse observations. Complete **site name** and **interview information** for each sheet so data can be matched up.

Site

Site name*

Site remarks:

Interview

Surveyor name*

Interview date*

Interview number*

Unique identifier:

* = mandatory

Fishing Gear

Gear photo number

Gear category (circle one)*

active static

Gear type (circle one)*

gill net push net trap trawl net other

If you selected 'Other' for 'Gear type' please describe:

Gear details:

Fishing Effort

Start date of fishing trip(s)*

End date of fishing trip(s)*

of days spent fishing*

Avg. fishing depth (m)

Marine habitat at fishing ground (circle one)

artificial coral mangrove seagrass
rock rubble sand mud
seaweed/algae open water other unknown



iSeahorse
Saving seahorses together

www.iseahorse.org/trends-landings
iseahorse@projectseahorse.org

iSeahorse Trends

Landings Survey Datasheet

Seahorse Observations

Did you get to see the seahorses? (circle one)

All Sample

Total number of seahorses in catch

Are you reporting data for the entire catch,
or a sub-sample? (circle one)

All Sample

Species (<i>Hippocampus</i> sp.)	Torso length (cm)	Sex (M/F/Unknown)	If male, pregnant? (Yes/No)	Photo #	Comments