2016 METROPOLITAN EDUCATION PROGRAMS

Learn... discover... experience!
The Department of Fisheries has an exciting range of education programs for teachers and students of all ages.

We offer professional learning experiences for educators and supplementary resources for use in the classroom, such as our highly-regarded curriculum-linked Marine WATERs (Marine Western Australian Teacher Education Resources). And if you can’t make it to one of our scheduled professional learning sessions, we can come to you (see p3 for details).

Our activities provide students with hands-on learning experiences focused around the sustainability of the marine environment. These learning programs are based on current scientific methodology and data collection and revolve around three main themes:

- Aquatic biology and ecology
- Science behind the management
- People and communities.

All of our educational experiences and resources are linked to learning areas within the Australian Curriculum and also address the Sustainability cross-curriculum priority.

A variety of complex issues impact on the sustainable management of Western Australia’s fish and aquatic resources. We invite you to learn how Fisheries, in partnership with the fishing industry, manages our aquatic resources sustainably to ensure there are fish for the future.

To discuss your education needs please telephone 9203 0112 or email education@fish.wa.gov.au

For professional learning queries please email marinewaters@fish.wa.gov.au
The Community and Education team at Hillarys offer regular Professional Learning opportunities to all teachers (including pre-service teachers) and other educators.

In 2016, each session will be aimed at teachers of a specific phase of learning or course of study (Senior Secondary).

Come and learn about our excursion activities and how to implement Marine WATERs into your classroom teaching. All sessions provide you with the chance to try some of our hands-on activities and receive take-away hard copy resources.

**Where:** Department of Fisheries, 39 Northside Drive, Hillarys WA 6025  
**Time:** 4.00 pm – 5.30 pm (Registration from 3.45 pm)

<table>
<thead>
<tr>
<th>Date</th>
<th>Session Focus</th>
<th>Phase of Learning/ Course of Study</th>
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<tbody>
<tr>
<td>Thursday 18 February</td>
<td>Fisheries Research</td>
<td>Marine &amp; Maritime Studies Biology</td>
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<tr>
<td>(Week 3, Term 1, 2016)</td>
<td></td>
<td>– ATAR and General</td>
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<tr>
<td>Thursday 12 May</td>
<td><em>Marine Connections</em> - excursions and activities for Primary Students</td>
<td>K – 6</td>
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<tr>
<td>(Week 3, Term 2, 2016)</td>
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<tr>
<td>Thursday 4 August</td>
<td>Certifying Sustainable Commercial Fisheries</td>
<td>Year 9 – 12</td>
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<tr>
<td>(Week 3, Term 3, 2016)</td>
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<td>Marine &amp; Maritime Studies Biology</td>
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<td>– ATAR and General</td>
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<td></td>
<td></td>
<td>Humanities and Social Sciences</td>
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<td>– ATAR and General</td>
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<tr>
<td>Thursday October 27th</td>
<td><em>Future Leaders for Fish for the Future</em></td>
<td>K – 12</td>
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<td>(Week 3, Term 4, 2016)</td>
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**Tailored professional learning**

Can’t make it to one our scheduled sessions? We can come to you! Get 10 or more colleagues together, provide us with a venue (within 50 km of Hillarys) and we will run a professional learning session tailored to your requirements on a day and time of your choice.

For further information about scheduled, tailored and regional professional learning requests, email marinewaters@fish.wa.gov.au.
INTRODUCTORY SESSION – ALL YEARS

Aquatic Natural Resource Management

Year K–2: 15 minutes
Year 3–9: 30 minutes
Year 10–12: 45 minutes

This introductory session asks students to consider how they use the marine environment and the impact they may have on it. It also provides students with an overview of the role that the Department of Fisheries has in sustainably managing our aquatic natural resources. Year 10-12 students will also discuss the Leeuwin Current as one of the driving forces of the Western Australian marine environment.
YEAR K – 2

Scientific Sandcastles $5.00 per student
SU, SIS

Build sandcastles with a difference! Students make sandcastles of some of our more recognisable fish and marine creatures, learning about their external features and some fun facts too.

*Note: This activity takes place on nearby Hillarys Beach.*

Beach Exploration $5.00 per student
SU, SHE, SIS, GKU

Explore Hillarys Beach and discover the wonders of what our oceans leave washed up in their wake. Identify different organisms and learn some fun facts about the things we find washed up.

*Note: This activity takes place on nearby Hillarys Beach.*

Bringing the Beach to You $5.00 per student
SU, SHE, SIS

This activity is the indoor version of a beach walk. Students will sort through buckets of marine organisms collected for you prior to your visit, learning how to identify these organisms and how they are related.
Bringing the Beach to You $5.00 per student
SU
Students work in groups to investigate a range of marine organisms that are commonly found on our local beaches. They then learn how to classify and identify these organisms.

Fishing for Sustainability $5.00 per student
SU, SHE, GKU
This interactive session gives students an overview of the role that the Department of Fisheries plays in managing our aquatic natural resources. Students will try their hand at our fishing game and observe the effects of fishing pressure on our fish stocks, and how management and science play an important role in conserving them.

Beach Exploration $5.00 per student
SU, SHE, GKU
Explore Hillarys Beach and discover what our oceans leave washed up in their wake. Identify and classify different organisms, whilst investigating the human impacts on our oceans and beaches.

*Note: This activity takes place on nearby Hillarys Beach.*

Fishy Features (Year 5 – 6 only) $5.00 per student
SU
You can tell a lot about a fish by the way it looks - such as where it lives, how it feeds, and how it moves through the water. Students will examine the external features of a variety of fish species, learning about their adaptations for life in the marine environment.
YEAR 7 – 10

**Fishing for Sustainability**  
$5.00 per student  
SU, SHE, SIS, GKU

This interactive session gives students an overview of the role that the Department of Fisheries plays in managing our aquatic natural resources. Students will try their hand at our fishing game to observe the effects of fishing pressure on our fish stocks, and how management and science plays an important role in conserving them.

**Bare Bones Fisheries Science**  
$8.00 per student  
SU, SHE

Learn why fisheries scientists dissect fish and how extracting the ear bones of bony fish provides information that is used to assess the health of fish stocks. Students will work in pairs to carry out their own fish dissection.

*Note: This activity has a maximum of 60 students per day.*

**Fishy Features**  
$5.00 per student  
SU

You can tell a lot about a fish by its external anatomy – such as where it lives, how it feeds, and how it moves through the water. Students will examine the external features of a variety of fish species, learning about their adaptations for life in the marine environment.

**Plethora of Plankton**  
$5.00 per student  
SU

Discover the world of plankton! Learn how fisheries scientists use plankton to estimate fish populations and determine the health of fish populations. Students will use microscopes and learn how to identify common plankton. (Year 9 – 10 only – students will also complete their own plankton tow in nearby Hillarys Boat Harbour).
Bare Bones Fisheries Science
$8.00 per student

Learn why fisheries scientists dissect fish and how extracting the ear bones of bony fish provides information that is used to assess the health of fish stocks. Students will each carry out their own fish dissection and examine both the internal and external features of their fish.

Note: This activity has a maximum of 60 students per day.

Classifying Creatures
$5.00 per student

Why is seaweed not a true plant? How is an octopus related to a mussel? In this activity students will learn the importance of scientific classification and attempt to identify and classify local marine organisms using simple dichotomous keys.

Fish of Ages
$5.00 per student

Why do fisheries scientists age fish? How do they do it? With the aid of prepared materials, students will use microscopes to determine the age of a sample of fish, record data and present their findings graphically. Students will also learn how this information assists in the sustainable management of our fisheries.

Plethora of Plankton
$5.00 per student

Learn how fisheries scientists use plankton to estimate populations of marine organisms and determine the health of fish populations. They will carry out a plankton tow from a nearby jetty and learn to identify common plankton.
Science of Sampling
$5.00 per student

MMS 11 ATAR, 12 ATAR, 11 General
ISC 11 ATAR
BLY 11 ATAR, 11 General, 12 General

Learn how fisheries scientists sample fish populations for stock assessment. This activity simulates scientific sampling techniques and uses real data to determine the health of iconic Western Australian fisheries including abalone and rock lobster.

Shake, Settle & Roll
$5.00 per student

MMS 11 ATAR, 11 General
ISC 11 General, 12 General
BLY 11 ATAR

Learn about the lifecycle of the Western rock lobster and the environmental factors that influence this fishery. Students will also learn how the Department manages the fishery and what data is collected to estimate the future rock lobster catch and ensure the sustainability of the fishery.
Fishing for Sustainability
$5.00 per student
MMS 12 ATAR, 11 General  BLY 11 ATAR, 12 General

This interactive session provides students with an understanding of the role that the Department of Fisheries plays in managing our aquatic natural resources sustainably. Students will try their hand at ‘dry fishing’ to observe the effects of fishing pressure on our fish stocks and how fisheries management has a role in sustaining these stocks.

Adapting to their Environment
$5.00 per student
BLY 12 ATAR, 11 General

The Department of Fisheries plays an important role in managing our aquatic natural resources sustainably. But what do fish do to help themselves? Students will learn first-hand about the variety of behavioural, physiological and structural adaptations that allow fish to survive in the aquatic environment.

Reef Transect*
$8.00 per student, 1.5 – 2 hours
MMS 11 ATAR  ISC 11 ATAR  BLY 11 ATAR, 12 ATAR

As well as a variety of fish species, many common invertebrate species live incredibly close to the shore. Come and discover what is found on the reef and conduct an ecosystem survey using transects and quadrats.

* This activity requires you to transport students to and from the designated reef area. Students will be in the water, no deeper than waist height. It is the school’s responsibility to provide staff with suitable qualifications to meet the Department of Education Water Based Excursion requirements. This activity is weather dependent and will only be scheduled in Term 1 and 4.
Free of charge with a paid activity – 30 minutes

Citizen Science at the Department of Fisheries

Would you like to do your bit for our aquatic environment? Would you like to assist the Department of Fisheries with sampling, data collection and observations, all whilst you are out and about in the marine environment? Through our citizen science projects, you can assist us in collecting data for research whilst you are fishing, snorkelling, diving or just visiting the beach. Learn more about these projects, including monitoring species distribution along the coast of Western Australia, how research data helps to determine recreational fishing rules and what species we’re currently tagging to collect data from.

Are commercial fisheries sustainable?

Western Australia is a world leader in fisheries management. In 2000, the West Coast Rock Lobster Fishery became the first in the world to achieve Marine Stewardship Council (MSC) third-party certification. The Department of Fisheries, in partnership with the Western Australian Fishing Industry Council and with support from the State Government, has embarked on a program providing the opportunity for all the State’s commercial fisheries to achieve MSC certification. The MSC is an independent non-profit organisation that sets a standard for sustainable fishing. Learn what commercial fishers and fisheries managers need to comply with to attain MSC certification and how WA fisheries are progressing in their bid to become certified.

Chat with a Fisheries scientist

Exactly what does one do when their job title is ‘Fisheries scientist’? Come and meet one of our scientists and find out what a typical day at work involves, and how they got to be there.
To plan and book a visit to the Department of Fisheries, please phone our education staff on 9203 0112 or email education@fish.wa.gov.au.

A written confirmation, itinerary and other documentation relevant to your excursion will be forwarded on to you upon completion of your booking.

**Duration**

All activities run for one hour in duration unless otherwise stated.

**Costs**

All costs quoted include GST.

We require minimum payment for the equivalent of 10 students for all activities.

Cheques are to be made payable to the Department of Fisheries.

**Free of charge ratio**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Free of charge supervision ratio Adult : Student</th>
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<tbody>
<tr>
<td>Kindergarten/Pre-primary</td>
<td>1 : 5</td>
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<tr>
<td>Year 1 – 3</td>
<td>1 : 5</td>
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<tr>
<td>Year 4 – 6</td>
<td>1 : 10</td>
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<tr>
<td>Year 7 – 12</td>
<td>1 : 10</td>
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WHERE ARE WE?

The Department of Fisheries’ school excursion programs are conducted at **39 Northside Drive, Hillarys**, which is located at the northern end of Hillarys Boat Harbour.

There is plenty of free parking near the building (but please note that parking is reserved for boat trailers before 12 noon).

**Opening times**

Monday to Friday, 8.30 am – 4.30 pm *(closed public holidays)*.
Excursion materials

All materials that students require during their activities are provided by the Department of Fisheries.

Laboratory sessions

If your visit includes a laboratory activity, please ensure students come prepared with enclosed footwear and long hair tied back.

Beach activities

The school’s supervisory team are expected to accompany their class to and on the beach. Students are not permitted to enter the water at any time. Please ensure students come prepared with a hat, water bottle and have applied sun cream. Sneakers or sandals should be worn – thongs are not appropriate.

Weather

In the event of inclement weather, or extreme heat, students will complete a modified or alternative activity.

Arrival and departure times

We advise that you plan to arrive 5–10 minutes prior to your excursion start time to allow students time to use the facilities and get settled.

Please note – if you arrive well before your excursion start time (> 15 minutes) you may be asked to take your class to the nearby park to wait until your teaching space is available.

Arriving late or leaving earlier than confirmed in your booking process may result in your activities being cut short.

Contacting the Department of Fisheries on the day of your excursion

Should you need to contact us on the day of your excursion, please call 9203 0348.
OTHER INFORMATION TO ASSIST WITH YOUR EXCURSION PLANNING continued...

**Lunches and school bags**

You are welcome to use the courtyard area adjacent to Flinders Coffee Shop (located within the building) during break times. Alternatively, Whitfords Nodes Park is located directly across the road from the Department of Fisheries.

It is preferable that large groups (more than one class) have students bring their lunch/snacks in a marked bag that can put into class tubs rather than each student having a school bag.

Students are permitted to use the café at the discretion of the classroom teacher, however we do ask that you advise both the café staff and education staff prior to your visit so that an appropriate break time can be allocated and the café can prepare food in a timely manner. Flinders Coffee Shop can be contacted on 9246 7044.

School bags and lunches may be placed in the ‘Cod Spot’ (indoor, air conditioned area) whilst students are participating in their excursion activities.
Looking for related pre- and post- excursion resources? Check out Marine WATERs!

Marine WATERs (Western Australian Teacher Education Resources) is an online resource with materials specific to Western Australia’s unique marine ecosystems. Resources are linked to the Australian Curriculum and include lesson plans, posters, PowerPoint presentations, games, student worksheets, videos, fact sheets and more! Registration is required to access these great resources, but it’s FREE!

Click on the mailing list box at the bottom of the registration page to receive email updates of new resources and professional learning opportunities.

Lesson Plans
Finding the teaching resources and information you need in Marine WATERs is easy!

1. To download the resources from Marine WATERs, you will need to **register**.
2. Check out the latest uploads on Marine WATERs.
3. Resources have been arranged into five modules – Processes, Marine Biology, Habitat, Humans and Management. Select any one of them to explore the available resources.
4. Search for resources specific to your needs through our range of filtering options, including Australian Curriculum codes and phases of learning.
5. Share an idea, report a bug or tell us what you think via our feedback function.
OTHER RESOURCES

Check out some of our other great West Australian specific fisheries and marine education resources.

**Activity teacher guides**

Teacher Guides provide you with suggestions for pre- and post-exursion learning opportunities specific to your chosen excursion activities.

[marinewaters.fish.wa.gov.au](http://marinewaters.fish.wa.gov.au)

**Perth Beachcombers Education Kit**

The *Perth Beachcombers Education Kit* is designed to help you discover and understand more about our coastal and marine environments for yourself.

The very popular beachcombers guide is available to download as a PDF or as an App from the App store and Google Play.


**Recfishwest**

Recfishwest conducts free fishing clinics for children aged 10-17 years in the Perth Metropolitan area and Western Australian regional areas.

[recfishwest.org.au](http://recfishwest.org.au)
## DATES TO REMEMBER

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<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January</td>
<td></td>
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<tr>
<td>February</td>
<td>Monday 1</td>
<td>Term 1 begins</td>
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<tr>
<td></td>
<td>Tuesday 2</td>
<td>World Wetlands Day</td>
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<td></td>
<td>Thursday 18</td>
<td>Department of Fisheries Professional Learning</td>
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<tr>
<td>March</td>
<td>Thursday 3</td>
<td>World Wildlife Day</td>
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<td></td>
<td>Friday 11</td>
<td>Sustainable Seafood Day</td>
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<td>April</td>
<td>Friday 8</td>
<td>Term 1 ends</td>
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<tr>
<td></td>
<td>Tuesday 26</td>
<td>Term 2 begins</td>
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<tr>
<td></td>
<td>Friday 22</td>
<td>Earth Day</td>
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<td>May</td>
<td>Thursday 12</td>
<td>Department of Fisheries Professional Learning</td>
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<tr>
<td></td>
<td>Sunday 22</td>
<td>International Day for Biodiversity</td>
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<td>June</td>
<td>Sunday 5</td>
<td>World Environment Day</td>
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<tr>
<td></td>
<td>Wednesday 8</td>
<td>World Oceans Day</td>
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<tr>
<td>July</td>
<td>Friday 1</td>
<td>Term 2 finishes</td>
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<tr>
<td></td>
<td>Monday 18</td>
<td>Term 3 begins</td>
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<tr>
<td>August</td>
<td>Thursday 4</td>
<td>Department of Fisheries Professional Learning</td>
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<td></td>
<td>Saturday 15 – Sunday 23</td>
<td>National Science Week</td>
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<td>September Biodiversity Month</td>
<td>Wednesday 7</td>
<td>National Threatened Species Day</td>
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<td></td>
<td>Thursday 22</td>
<td>World Maritime Day</td>
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<tr>
<td></td>
<td>Friday 23</td>
<td>Term 3 finishes</td>
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<tr>
<td>October</td>
<td>Monday 10</td>
<td>Term 4 begins</td>
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<tr>
<td></td>
<td>Thursday 27</td>
<td>Department of Fisheries Professional Learning</td>
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<tr>
<td>November</td>
<td>Monday 21</td>
<td>World Fisheries Day</td>
</tr>
<tr>
<td>December</td>
<td>Thursday 15</td>
<td>Term 4 finishes</td>
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Department of Fisheries’ Community and Education staff are also located in regional centres including Broome, Busselton and Albany and service the surrounding local areas. Our staff also deliver fisheries and marine education programs in the Indian Ocean Territories.

The Department’s education programs can be tailored to meet the specific needs of each region and include schools, community, events and festivals.

**Northern Region**

**Jessamy Ham**  
Community Education Officer (Broome)  
T: (08) 9193 8600  
E: jessamy.ham@fish.wa.gov.au

**Indian Ocean Territories**

**Kim Boothman**  
Community Education Officer  
T: 61 (08) 9203 0345  
E: kim.boothman@fish.wa.gov.au

**Southern Region**

**Jennifer Bennett** and **Alicia Reagan**  
Community Education Officers (Busselton/Bunbury)  
T: (08) 9752 2152  
E: jennifer.bennett@fish.wa.gov.au  
E: alicia.reagan@fish.wa.gov.au

**Tahryn Thompson** and **Kylie Outhwaite**  
Marine Education Officers (Albany)  
T: (08) 9845 7400  
E: tahryn.thompson@fish.wa.gov.au  
E: kylie.outhwaite@fish.wa.gov.au