

TĀIKO BYCATCH DATA WORKSHEET

WORKSHEET A: BLACK PETREL BYCATCH

Aotearoa New Zealand is known as the seabird capital of the world!

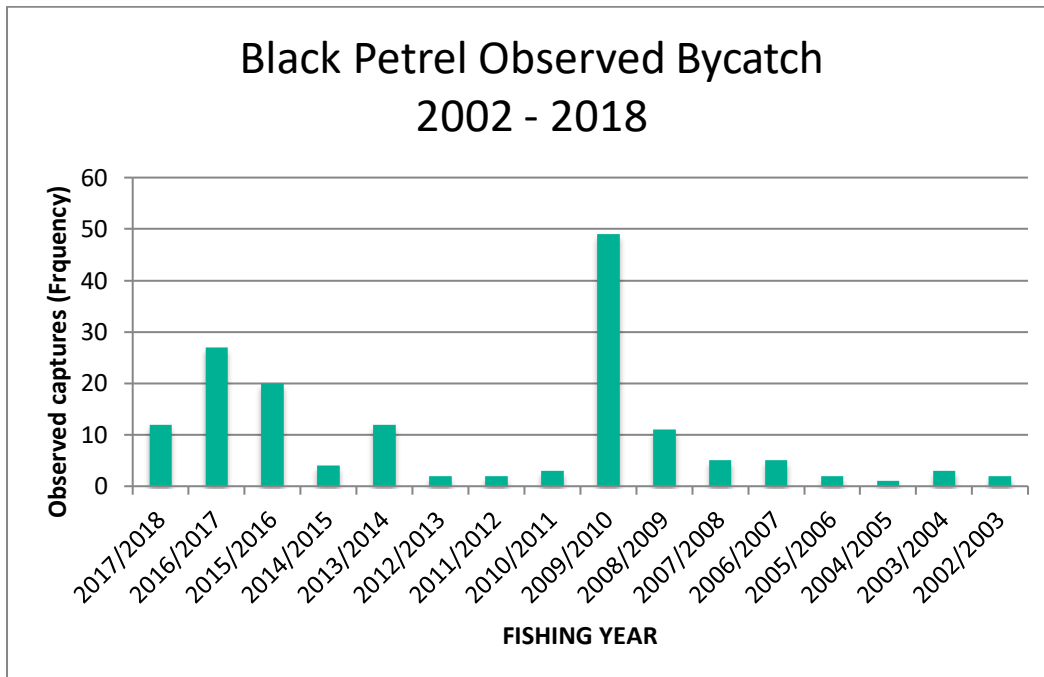
This is because we have the biggest variety [diversity] of seabirds in the whole world.

Tāiko or Black Petrel once bred all around the North Island and in the upper South Island. Now they only breed on one or two islands in the Hauraki Gulf (near Auckland).



Image: Charlie Westerinen

These birds are an endemic (unique to Aotearoa New Zealand) seabird. They are not found in many places now because of introduced predators (like rats, cats, stoats and weasels) and the loss of places that they like to nest (due to human activities). They are also caught as bycatch by commercial and recreational fishers as they like to scavenge [look for food scraps] behind fishing boats. Tāiko or Black Petrel like to eat squid and small fish. They can dive to a depth of 34m! Female Tāiko or Black Petrel lay a single egg in a burrow. Tāiko or Black Petrel breed here in Aotearoa New Zealand from October to May but from June to September they fly as far as South America (that's more than 12,000km away!).



Tāiko or Black Petrel are mainly caught by commercial fishers using long line and trawl methods. This graph (left) shows total numbers of observed captures of Tāiko or Black Petrel in recent years and includes both trawls and long lines.



QUESTIONS

How well did you read?

Multiple choice

Circle the correct answer

1. Aotearoa New Zealand is known as the seabird capital of the world because
 1. It has few seabirds
 2. Forest birds are plentiful
 3. It has large seabirds
 4. It has the greatest variety [diversity] of seabirds
2. Tāiko or Black Petrel are 'endemic' to Aotearoa New Zealand. What does 'endemic' mean?
 - (a) They are unique to New Zealand
 - (b) They are found all over the world
 - (c) They breed in many countries
 - (d) They fly all over the world

True or false

Read the statement and circle or underline the correct answer – either 'true' or 'false'

1. True or False? Tāiko / Black Petrel once bred all around the North Island and in the upper South Island.
2. True or False? Tāiko / Black Petrel are poor swimmers and seldom dive.

3. Which of the following is NOT a threat to Tāiko the Black Petrel?
 - (a) Being caught as bycatch
 - (b) Habitat loss
 - (c) Introduced predators (like stoats)
 - (d) Being a good flyer
4. Which of the following is NOT true of Tāiko or the Black Petrel?
 - (a) There are too many of them
 - (b) They eat small fish and squid
 - (c) They like to scavenge behind boats
 - (d) They lay a single egg in a burrow
5. Which commercial methods of fishing most commonly capture tāiko or Black Petrel as bycatch?
 - (a) Set net and drift gill net
 - (b) Pole and line
 - (c) Longline and trawl
 - (d) Fish traps or pots



3. True or False? Tāiko / Black Petrel build nests in well protected trees close to the water's edge.

Graph interpretation questions

1. What does the graph tell you about
 - a. The fishing year that had the highest number of Tāiko / Black Petrel observed captures?

 - b. The number of fishing years with ten or more observed captures of Tāiko / Black Petrel?

2. What doesn't the graph tell you?

For fast finishers

Write three sentences about Tāiko / Black Petrel

Using your own words, write three sentences about what you have learnt about Tāiko / Black Petrel.

Extra space for writing answers



FOR TEACHERS

Answers (Worksheet A)

Multiple choice

1 (d); 2 (a); 3 (d); 4 (b); 5 (c)

True or False

T, F, F

Graph interpretation

1. a. 2009/2010; b. there have been 6 fishing years with more than ten observed captures of Tāiko / Black Petrel
2. Answers could include: How many birds were captured that were not observed; what type of fishing methods were used...

WORKSHEET B: BLACK PETREL BYCATCH

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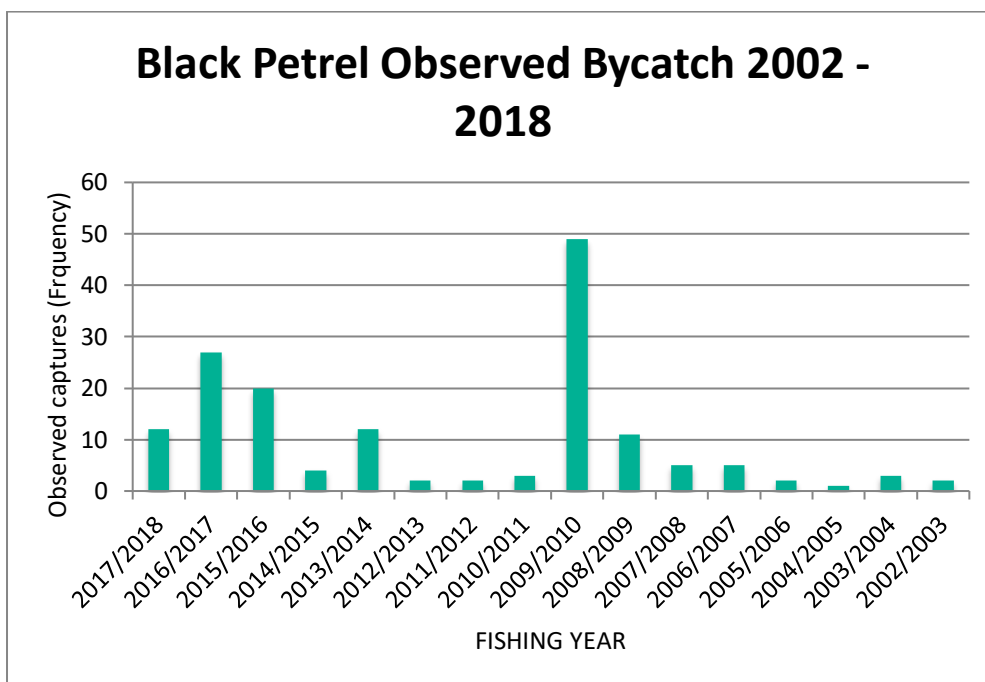
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Seabirds, marine mammals, and turtles are sometimes caught during commercial fishing. To monitor the impacts of fishing on protected species, government observers on fishing vessels record any protected species bycatch. Observers are only present on some fishing vessels.

Tāiko or Black Petrel are mainly caught by commercial fishers using long line and trawl. The graph on the previous page shows total numbers of observed captures of Tāiko or Black Petrel in recent years.

The table to the right shows the number of observed captures of Tāiko / Black Petrel for trawl, surface longline and bottom longline fishing for each fishing year between 2002 and 2018.

Observed captures of Tāiko /Black Petrel by fishing method (2002 – 2018)			
Fishing year	Trawl	Surface longline	Bottom longline
2017/2018	0	10	2
2016/2017	6	8	13
2015/2016	13	7	0
2014/2015	2	0	2
2013/2014	5	0	7
2012/2013	0	0	2
2011/2012	1	1	0
2010/2011	0	1	2
2009/2010	0	6	43
2008/2009	0	2	9
2007/2008	1	1	3
2006/2007	1	0	4
2005/2006	0	0	2
2004/2005	0	0	1
2003/2004	0	1	2
2002/2003	0	2	0

GRAPHING ACTIVITY

Work with a buddy to:

Activity 1

1. Create a graph comparing all observed captures of Tāiko / Black Petrel for all three fishing methods and all fishing years.
2. What does the graph tell you about
 - (a) The frequency of capture by trawlers?
 - (b) The frequency of capture by surface longline?
 - (c) The frequency of capture by bottom longline?
3. What (if any) trends are evident?
4. What does the graph not tell you?

Activity 2

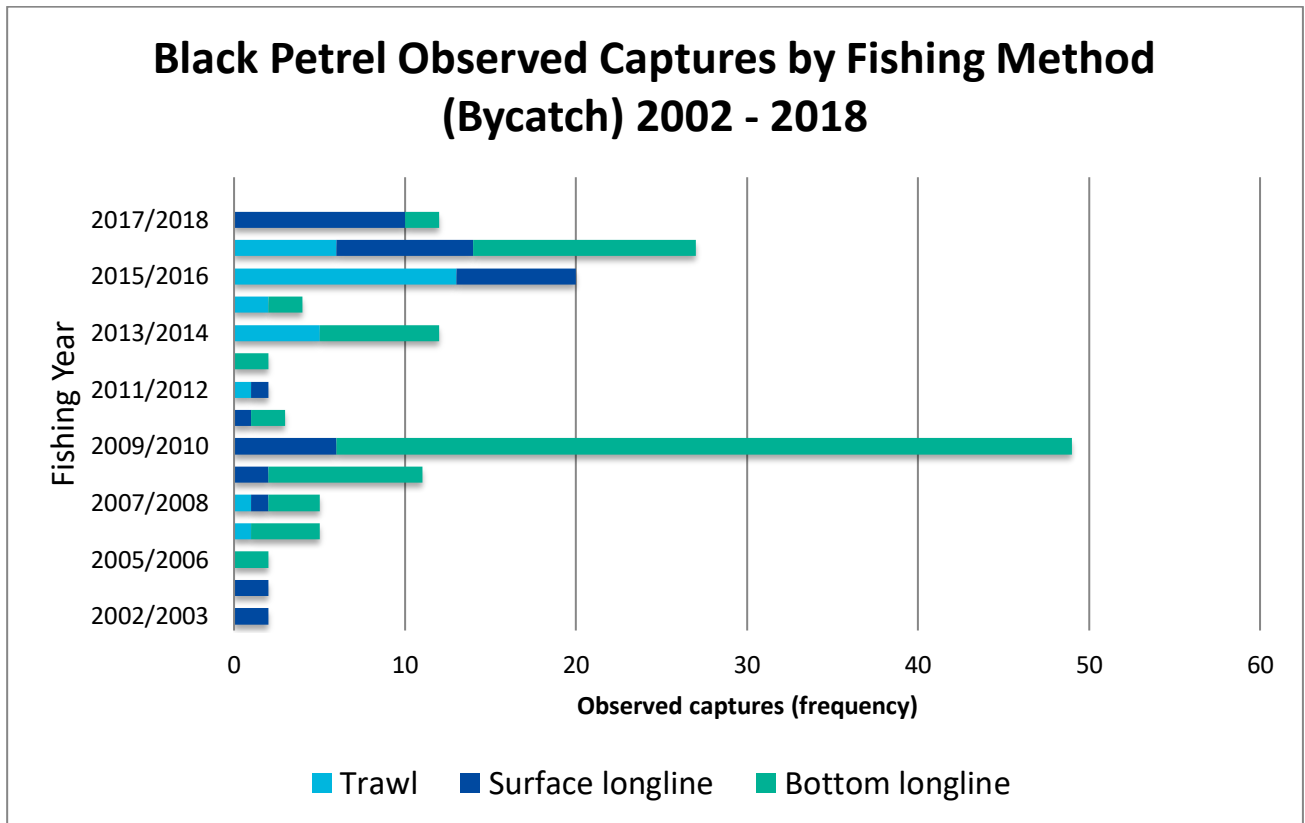
1. Create a pie graph comparing total number of Tāiko / Black Petrel caught between 2002 and 2018 (all fishing years) by each of the three fishing methods.
2. What does the graph tell you about the total number of Tāiko / Black Petrel caught using each method?

FOR TEACHERS

Answers (Worksheet B)

Activity 1

1. Create a graph comparing all observed captures of Tāiko / Black Petrel for all three fishing methods and all fishing years.



2. What does the graph tell you about
 - (a) The frequency of capture by trawlers?

Bycatch by trawl was less commonly observed 2002 -2010. Has increased in recent years. Most observed captures occurred in 2015/2016 fishing year.
 - (b) The frequency of capture by surface longline?

Has increased in last three fishing years. Was less commonly observed 2003/2004 – 2014 although there was a spike in the 2009 / 2010 year.
 - (c) The frequency of capture by bottom longline?

Probably shows as having the highest number of observed captures out of the three methods - especially high number of observed captures in 2009 / 2010.
3. What (if any) trends are evident?

Some evidence of an increasing number of observed captures.
4. What does the graph not tell you?

Doesn't tell us all captures – only observed captures. Doesn't tell us the effect of fishing effort. To review charts that include fishing effort see: <https://psc.dragonfly.co.nz/2019v1/released/black-petrel/surface-longline/all-vessels/eez/2002-03-2017-18/> (note this is just one fishing method – you can change the fishing method by altering tabs at the top of the page).

Activity 2

1. Create a pie graph comparing total number of Tāiko / Black Petrel caught between 2002 and 2018 (all fishing years) by each of the three fishing methods.
2. What does the graph tell you about the total number of Tāiko / Black Petrel caught using each method?

Bottom longline is the method with the highest number of observed captures and trawl has the lowest.

