

Question: do minke whale sightings in the Moray Firth occur more often at a certain time of day?

Answer: we do not have sufficient numbers of minke sightings in our Shorewatch data to make a statistically significant response but by looking at the sightings across the general groupings of morning (7-11am), midday (11am-2pm), afternoon (2-6pm), and evening (6-10pm), we can see that sightings occur in all time blocks and that the encounter rate (sightings divided by effort) is relatively similar for all times. **The evening encounter rate appears lower but with just one more sighting it would leap to 0.007 demonstrating that the low variation between our time blocks is not significant.*

We combined data from Burghead, Cullen, Macduff, and Spey Bay in 2015-2015 to create the table below.

2015-2016 efforts & minke sightings from specified MF sites	Morning (7-11am)	Midday (11am-2pm)	Afternoon (2-6pm)	Evening (6-10pm)
Sightings on effort:	7	13	14	1
Shorewatches:	1,986	2,052	2,155	297
Encounter rate:	0.004	0.006	0.006	0.003*
<i>Casual sightings:</i>	<i>1</i>	<i>5</i>		<i>1</i>

This table shows the minke sightings (effort and casual combined) broken down by site and across the entire 2010-2016 time period. We are not looking at effort or encounter rate site-by-site because the sighting numbers are relatively low.

If you are interested in finding out more about a specific species or time at your local site, please be in touch by emailing

Shorewatch.data@whales.org

	Morning (7-11am)	Midday (11am-2pm)	Afternoon (2-6pm)	Evening (6-10pm)
<i>Total sightings:</i>	<i>15</i>	<i>20</i>	<i>20</i>	<i>2</i>
Burghead A				
2015	2	3	3	
2016		2	1	1
Burghead B				
2015	2	4	5	1
2016	1	4		
Cullen				
2011	1			
2012			1	
2013			1	
2014	1			
2015		1		
2016	1	2		
Macduff				
2011			2	
2013	2	1	1	
2014	1	1	1	
2015	1			
2016	1	1	2	
Spey Bay				
2012	2			
2016		1	3	

Of further interest: does our Shorewatch data reflect the popular theory that minke whales will be seen the most frequently in summer and early autumn? Yes. Again, our overall minke sightings are low and our encounter rates are not statistically significant but the below table shows a clear trend reflecting minke sightings between June and October, even when compared to months with relatively similar effort: April and May. We are now trialling sites in the Moray Firth where our minke encounter rate could be significant. This requires good height and locations where minkes come closer to shore.

2015-2016 all sites	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Shorewatches:	243	208	342	624	624	878	773	796	800	714	283	245
Sightings on effort:		1				13	4	1	5	7		1
Encounter rate:		0.005				0.015	0.005	0.001	0.006	0.010		0.004
<i>Casual sightings:</i>					1	3	2					

This table lays out the minke sightings when broken down by site and year:

	Totals:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Totals:		0	1	0	0	2	22	10	5	7	7	1	1
Burghead A	12												
2015	8						5	1			2		
2016	4					1	1	1			1		
Burghead B	17												
2015	12						7	1		1	3		
2016	5					1	2	2					
Cullen	8												
2011	1						1						
2012	1									1			
2013	1						1						
2014	1						1						
2015	1						1						
2016	3							3					
Macduff	13												
2011	2						1		1				
2013	4						1		2			1	
2014	2						1	1					
2015	1									1			
2016	4		1						1		1		1
Spey Bay	6												
2012	2								1	1			
2016	4							1		3			

