



Exploring the Coastal Marine Environment
Student Science Journal

*Hope is the thing with feathers
That perches in the soul,
And sings the tune--without the words,
And never stops at all
-Emily Dickinson*

Name _____

Grade _____

School _____

Contents: **News from the Farallon Islands**
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 Restoring the Common Murre (Devil's Slide Rock)
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Webs Under Waves: Exploring the Coastal Marine Environment



(Aerial view of the Farallon Islands)

News From the Island:

Your Farallon Fanatic News Letter Data Sheet

The following data was collected by the scientists living on the Farallon Islands. The scientists collect this information so that they can observe changes to the marine mammals, seabirds and island conditions.

Month/ Year	Average Air Temperature (celsius)	Average Ocean Temperature	Common Murre	Elephant Seals	Stellar Sea Lions	Humpback Whales (highest)	Cool News
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		(celsius)				number seen in a day)	
August 2005	14.5°C	13.5°C	50	39	68	4	3 Western Gulls were found covered in oil
September 2005	15°C	13.3°	10	176	18	5	30 Hoary Bats on the island
October 2005	14.7°C	12.9°C	10,000+	378	46	11	A sea otter was seen diving for food
November 2005	13.9°C	12.7°C	30,000+	242	34	9	Scientists put 11 tags on sharks
December 2005	13.4°C	12.3°C	30,000+	187	42	3	Earliest elephant seal pup ever was born on December 8th

(Webs Under Waves, cont.)

Month/Year	Average Air Temperature (celsius)	Average Ocean Temperature (celsius)	Common Murres	Elephant Seals	Stellar Sea Lions	Humpback Whales (highest number seen in a day)	Cool News
August 2004	15°C	13°C	50	43	38	1	Two sharks seen attacking seals
September 2004	15°C	13°C	10	166	51	13	Over 1000 seal lions on the island
October 2004	15°C	13°C	10,000	372	52	12	11 Sight-seeing boats visited the island
November 2004	14°C	14°C	20,000	375	64	5	“Cut-tail” (a well known shark) was seen feeding
December 2004	12°C	12°C	30,000	171	26	4	56 Gray Whales were seen

Month/Year	Average Air Temperature (celsius)	Average Ocean Temperature (celsius)	Common Murres	Elephant Seals	Stellar Sea Lions	Humpback Whales (highest number seen in a day)	Cool News
August 2003	17°C	14°C	100	52	29	12	Lots of baby birds still on the island
September 2003	16°C	14°C	10	287	40	15	Fighter jet scared off many birds and marine mammals!
October 2003	16°C	12°C	3,000	474	86	15	It was 31°C during one day this month!
November 2003	14°C	12°C	15,000	827	131	20	Thousands of birds feeding on krill east of the island
December 2003	13°C	12°C	15,000	171	27	11	Last of the baby birds have fledged

Interpreting the Data (You are the scientist)

1. How many Stellar Sea Lions were seen during the month of October 2003?

2. What was the name of the shark seen on November 2004?
3. How many more Common Murres were there in December 2005 when compared to December 2003?
4. How many Common Murres were seen in November 2004. Why were there so many?

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What Do We Know About the Farallon Marine Environment?

Video: Ask a Farallon Island Scientist – 8 minutes

While viewing the video find the answers to these questions.

What jobs were the scientists doing on the island? _____

Can you name two species of seabirds:

1. _____ 2. _____

Can you name two species of marine mammals:

1. _____ 2. _____

What do we want to know about the Farallon Marine Environment?

Let's Ask a Scientist!

List 3 questions you would like to ask a scientist. (Teacher can write these on the whiteboard)

Students choose one of these questions to ask a scientist

Question Selected to Ask a Farallon Scientist: _____

Webs Under Waves: Exploring Coastal Marine Life



Location of Devil's Slide Rock

Restoring the Common Murre: News From Devil's Slide Rock

The Common Murre Restoration Project is reestablishing a colony of Common Murres on Devil's Slide Rock along the San Mateo Coast of Central California. An oil spill in 1986 killed 9,000 seabirds, 6,000 of which were Common Murres. The breeding colony on Devil's Slide Rock was wiped out as a result of the spill. A trust fund established to restore resources damaged in the spill is being used to reestablish the murre colony. The project has been underway since January of 1996. Social attractants, including decoys of adult murres, decoys of murre chicks and eggs, CD players projecting amplified murre sounds, and three-sided mirror boxes, were being used to lure the highly colonial birds back to the rock.

A. Data from Common Murre breeding seasons on Devil's Slide Rock.

(Number of Murre Breeding Pairs recorded)		
<u>Year</u>	<u>Year</u>	<u>Year</u>
1996--6	2000--100	2003--110
1997--9	2001--113	2004--190
1998--13	2002--123	2005--164
1999--70		2006--361

A. Data from Common Murre breeding seasons on Devil’s Slide Rock.

(Number of Murre Breeding Pairs recorded)		
<u>Year</u>	<u>Year</u>	<u>Year</u>
1996--6	2000--100	2003--110
1997--9	2001--113	2004--190
1998--13	2002--123	2005--164
1999--70		2006--361

Graph the Common Murre Data (Webs Under Waves, cont.)

Number
of
Common
Murres

360											
330											
300											
270											
240											
210											
180											
150											
120											
90											
60											
30											
0	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006

Year

B. What was the best breeding year on Devil’s Slide Rock?

C. Live Web Cam Observation of murres on Devils Slide Rock

www.fws.gov/sfbayrefuges/murre/murrehome.htm

Month/ Day/ Year	Number of murres observed	First murre egg observed	Behavior of murres	Cormorant courting behavior	Other birds observed

Webs Under Waves: Exploring the Coastal Marine Environment

A W K N H K U P O Y K N X C W
M D E R W H R Y F O O D W E B
U P A H A E N Z A I C D C B X
R Y A P D H F N L S C M Y K B
R L R A T Y S A W K O R A P K
E E T M V A E I T S R C F Z S
N O I G P S T X Y Y M H E C A
R O X L N T Z I S H O S R A Z
R H T Y U O B Z O R R I A W N
E K E K S T U X Z N A F V J D
T G F O N N Z E N Q N K A B W
R R Y C R A A H J I T C V L B
L L I R K W L T O L S O K K S
T D V Z T U A P Z Y U R Q R W
L L I P S L I O M K B Q Q U P

ADAPTATION
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OIL SPILL
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