

We're looking forward to seeing you at



Swan Haven



Dear Teacher,

We're glad you will be bringing your class to Swan Haven Interpretation Centre this April. Here are some ideas to present to your class before and after the trip, along with a background of the interpretation centre and M'Clintock Bay.

Included in this package is your *Registration Confirmation* with a map to Swan Haven. There is also a helpful *Thank You Swan Haven Chaperone* card of instructions that you may copy and distribute to your chaperones. Finally, the *Kit List* can be copied and given to each of your students to take home to their parents before their visit to Swan Haven, so that they come to school that day prepared for their field trip.

When you arrive at Swan Haven, interpreters will divide the students into three groups. Each group will have an interpreter to guide them through the three activity stations:

1. Inside Swan Haven
2. Along the lakeshore
3. The outdoor play area

Please remember that you must have at least **1 teacher/chaperone for every 10 students**. Though the building itself is heated, be aware that there is no running water and only outhouses as toilets.

If you intend to have lunch at Swan Haven, you must book the space ahead of time (e-mail: wildlife.viewing@gov.yk.ca or call 667-8291). We have been short on space in the past, and will let you know if another class has already booked the facility. Note that Sprucewind Girl Guide Camp is across the road and available to rent as a picnic space, free of charge. An indoor facility is also available for rent at the camp for a small charge. Please contact the Girl Guide office at 667-2455 to book that facility.

If you have any questions about your visit, please contact Scott Cameron, the Wildlife Viewing Technician, at 667-8291.

We look forward to seeing you at Swan Haven!

The Wildlife Viewing Program

NOTE: All the materials in this package are also posted online under "School Programs" at www.swanhaven.gov.yk.ca. If you misplace any of the sheets or materials, feel free to download them from the website.

Before, During and After your Visit Activities for Grade 6

Before your visit to Swan Haven

Before you visit Swan Haven, try the **Plotting Swan Numbers** math and graphing exercise. Swan Haven data from 2000 to 2010 has been provided. This exercise will demonstrate that there is often significant variation in migration from year to year. Students will be able to compare the swan count on the day of their visit with the count on the same date 10 years ago.

At Swan Haven

- **Station #1 Inside Swan Haven**

This activity station includes a grand view of the bay with spotting scopes mounted on the upper deck. Here interpreters will share some of the features that make this place so great! Back inside, discover the sounds and sights of swans up close. Now it's time to pull out some of the learning from previous visits as students research, then describe, **Migration Flyways**. This map-reading exercise gives us an idea of what the birds have been through to get here, and gives us a better appreciation of their lives during migration. Not everything is ducky in the swan world. At this station, students can also view and vote for their favourite piece of student art.

- **Station #2 The outdoor play area**

Thinking caps are still needed here as we explore the complex and intricate '**Ecosystem Web**'. Your interpreter will guide you through the game that leaves everyone thinking about how we all make an impact on our planet.

- **Station #3 Along the lakeshore**

Here is the place for some quiet looking and listening. Your interpreter will guide your group for a closer look at the birds with binoculars and spotting scopes. This is where you'll get to use your **Swan Haven Birding Passport** as we search for some of the birds featured there. Mitts, hats, warm boots and a coat make this a more comfortable viewing experience.

After your visit to Swan Haven

After all that learning during your visit to Swan Haven, it's time to apply what you've learned in a **Wetlands Crossword** puzzle. What was the name of a young swan again? The answers are included in this package.

PLOTTING SWAN NUMBERS

Grade: 6.

Subjects: Math, Biology

Skills: Counting, comparing, connecting points.

Duration: 30 minutes.

Group Size: variable

Setting: Indoors.

Vocabulary: Peak, staging, estimate, population, fluctuation, variables.

Objectives:

1. Realize that swan numbers in M'Clintock Bay vary from year to year, and for varying reasons.
2. Understand that numbers of swans counted in M'Clintock Bay is not an accurate count of the population size; but is used as an estimate of swans using the bay as a staging area.

Activity:

Students plot Swan Haven swan numbers on graphs using real data and compare differences between years.

Background:

Both Trumpeter and Tundra swans use M'Clintock Bay as a **staging** (resting) and **feeding** area on their migration north to their nesting grounds. Trumpeter swans come from as far away as the Pacific coast of British Columbia and Washington state. Tundra swans come from as far away as the Pacific coast of central California. The swans and other migrating birds that stop at Swan Haven fly along the Pacific Flyway to their nesting grounds but do not nest here. These Trumpeter swans are destined for southwestern Yukon and central Alaska; the Tundra swans are believed to be en route to northwestern Alaska.

M'Clintock Bay is an important staging area for migrating water birds for three reasons:

1. Early open water (the warm water flowing from Marsh Lake keeps part of the bay ice free through most of the winter.
2. The M'Clintock River deposits lots of nutrient-rich silt in the bay which supports an abundant growth of aquatic plants.
3. Low spring water levels allow the birds to reach the roots and tubers of the plentiful aquatic plants.

A count of all the birds frequenting M'Clintock Bay is conducted every day during the month of April and early May. Distinguishing between Trumpeter and Tundra swans is not possible from such a distance; therefore numbers include both Trumpeter and Tundra swans. Trumpeter swan **cygnets** (young swans) are counted separately from Tundra cygnets and adults of both swan species because they are still grey in colour and are easily identified. During the brief period when Tundra swans have not yet arrived at M'Clintock Bay, the ratio of grey to white birds provides biologists

with a measure of the birds' breeding success the previous summer. On some days, as many as 2,500 swans have been counted in M'Clintock Bay.

Materials:

Sheets of graph paper

Pencils

Coloured pencils

Colour markers

Swan Haven swan numbers for various years

Procedure:

1. Arrange students into groups of eight students (or however many years of data are provided); each student can plot data for one year.
2. Hand out pencils and coloured pencils; have students assign a specific colour to a specific year.
3. Call out the numbers for the specific dates, allowing time for each student to plot them on their graph. Do this for all data points for the years you select to graph.
4. Once the graphs have been completed, ask the students the following questions:
 - Which year had the highest count of swans? What is the date?
 - Which year had the lowest count of swans? What is the date?
 - Which year had the widest **fluctuations** in numbers?

Extensions:

1. Have students plot this year's data after the results have been finalized. How does it compare to other years?
2. Allow students to count the present number of swans during their visit to Swan Haven using the scopes provided.
3. Allow students to count the number of Trumpeter swan cygnets.

Evaluation:

1. What might be some of the **variables** (something that changes) affecting the numbers of swans counted at M'Clintock Bay?

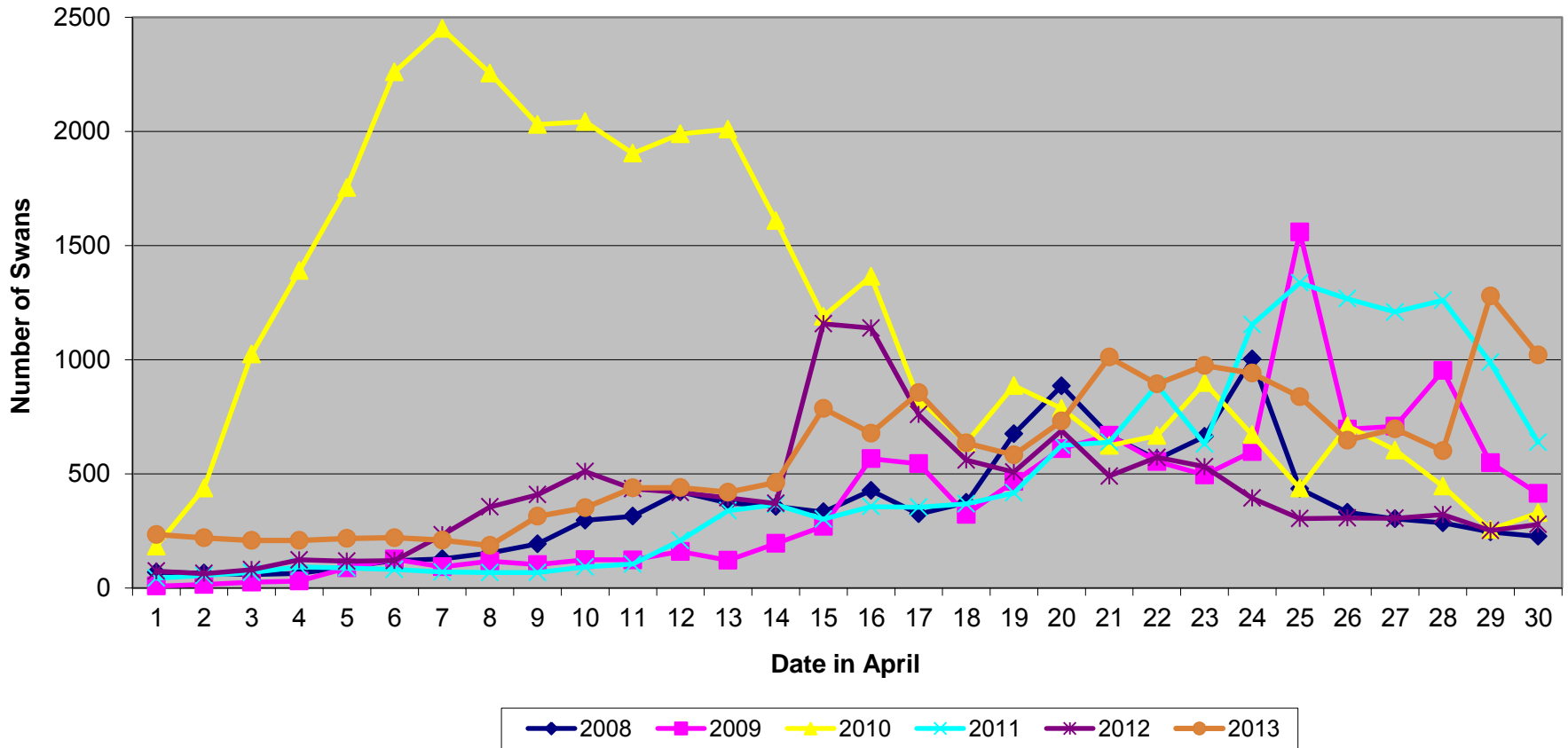
References:

Organization adapted from *Wildlife for the Future*, Alaska Department of Fish and Game and Alaska Natural Resources and Outdoor Education Association, Juneau, Alaska.

SWAN HAVEN DATA FOR YEARS 2003-2013

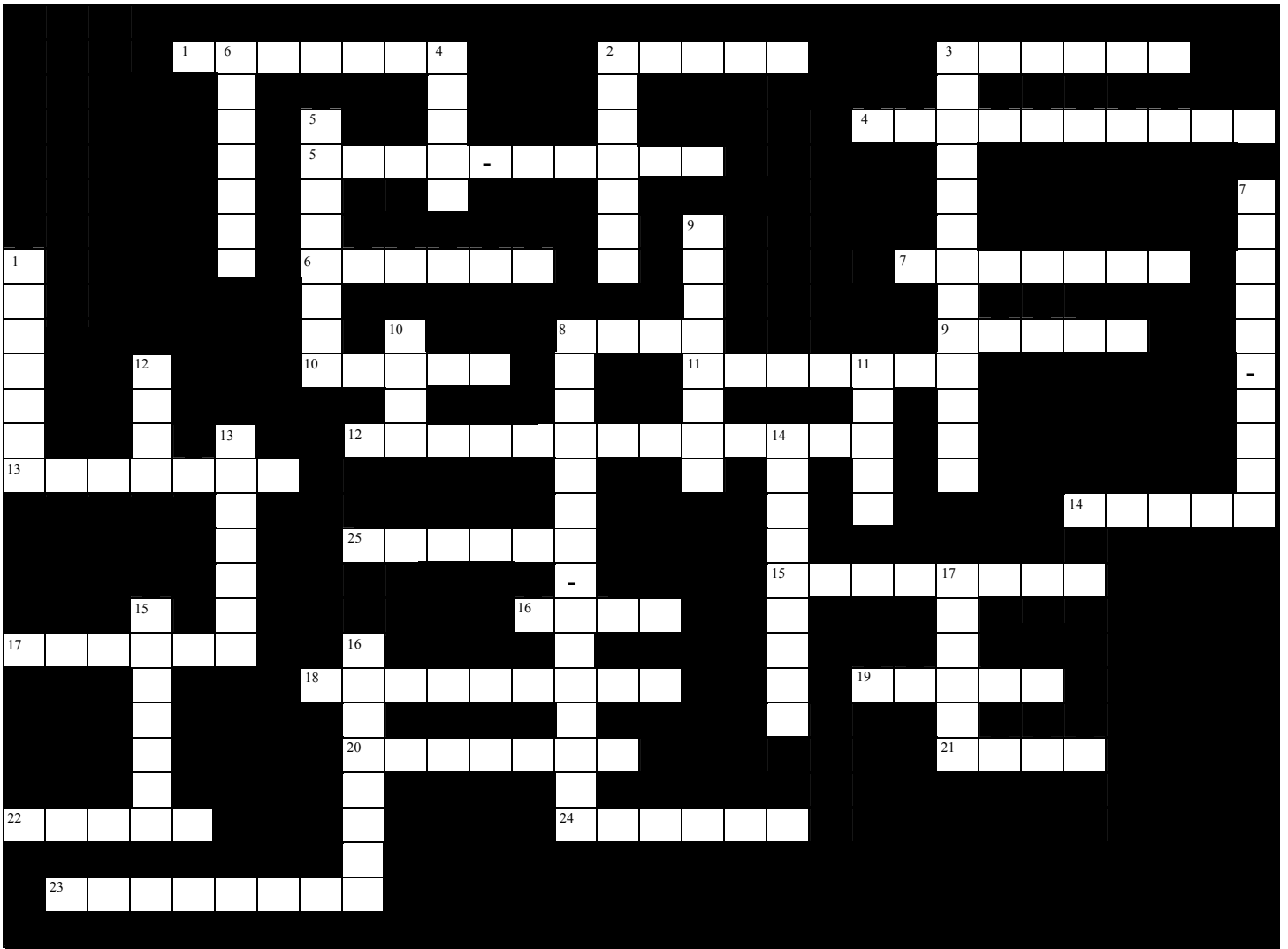
DATE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
April 1	79	296	94	42	58	69	8	183	43	74	234
April 2	100	282	126	88	93	65	15	437	55	63	219
April 3	108	620	144	118	108	59	25	1024	67	80	208
April 4	116	917	257	148	130	64	30	1390	93	123	208
April 5	133	865	277	332	132	93	88	1754	88	117	217
April 6	202	795	324	299	138	120	126	2260	81	120	220
April 7	318	1116	324	320	163	127	93	2450	70	232	209
April 8	371	1106	321	476	196	153	117	2255	67	355	186
April 9	380	1124	435	827	203	193	102	2030	68	409	314
April 10	391	1346	686	959	215	296	124	2043	92	510	351
April 11	427	1423	718	626	272	314	123	1904	105	434	438
April 12	463	1437	741	541	328	421	160	1989	208	418	439
April 13	649	1336	991	684	330	372	121	2009	339	395	419
April 14	934	838	1498	675	314	357	195	1609	365	370	462
April 15	903	777	1721	321	347	333	270	1189	301	1157	786
April 16	768	866	1598	411	378	427	566	1365	356	1138	678
April 17	1049	845	1319	927	438	324	544	826	354	759	855
April 18	1119	795	2322	936	717	374	322	636	368	560	635
April 19	1009	903	957	956	760	675	466	886	416	508	583
April 20	1076	1248	820	1516	619	885	610	786	625	690	731
April 21	774	1854	628	994	803	668	669	624	639	490	1011
April 22	677	1008	670	662	909	564	554	667	888	572	894
April 23	1158	834	521	604	935	663	495	899	630	531	974
April 24	700	683	436	592	782	1003	597	671	1154	394	941
April 25	709	505	483	511	756	435	1559	437	1336	304	837
April 26	799	484	251	821	774	331	696	710	1267	306	647
April 27	439	482	196	525	545	303	708	604	1209	305	697
April 28	347	419	215	489	794	285	952	446	1260	321	601
April 29	271	307	207	440	727	245	549	255	988	252	1279
April 30	367	324	217	427	677	226	414	329	638	278	1021

April Swan Counts, M'Clintock Bay, Marsh Lake
2008 to 2013



Example for Plotting Swan Numbers Exercise

WETLAND CROSSWORD PUZZLE



ACROSS

1. How would you describe the way a duck walks?
2. What is one part of the aquatic plant that swans are feeding on?
3. What is the name for a young swan?
4. Which feathers provide buoyancy and insulation?
5. What is one feature that makes M'Clintock Bay an important spring staging area for migrating water birds?
6. Which swan species has a concave bill with a yellow tear drop-shaped marking near the eye?
7. What do many bird species do every spring and fall when they fly from one climatic region to another?
8. What structure is built by a bird to hold its eggs and young?
9. What is the word that means all birds?
10. What other type of bird, besides swans and ducks, belongs to the waterfowl group?
11. What is the name for a place in which an animal or plant lives and grows?
12. What group of animals lack a backbone?
13. What depth of water do dabblers feed in?
14. What does a river form when it flows into a lake or ocean?
15. What is one species of aquatic plant that swans feed on in M'Clintock Bay?
16. What does a female bird lay in the nest?
17. What type of habitat is Vancouver Island and the coast of Vancouver for Trumpeter swans?

18. What is the common group name for swimming birds such as swans, geese, and ducks?
19. What is another part of the plant that swans are feeding on?
20. What head motion is used between two or more communicating swans?
21. What type of bird is a Northern Pintail?
22. What are the appendages that enable birds to fly?
23. What is the name for the activity which all birds engage in to groom their feathers?
24. What season of the year do migrating waterfowl stage at M'Clintock Bay?
25. What feeding method do mergansers, loons and some ducks, such as Buffleheads and Goldeneyes use?

DOWN

1. What are the depressions in the mud caused by feeding swans called?
2. What is one of the activities of waterfowl at M'Clintock Bay?
3. What do swans use different neck postures for?
4. What birds are among the largest flying birds today?
5. What is the process whereby a bird sheds its feathers?
6. What type of plants do waterfowl such as swans and ducks eat?
7. What is one species of invertebrate eaten by swans and ducks at M'Clintock Bay?
8. Where are the swans, geese, ducks and other water birds heading to when they leave M'Clintock Bay?
9. What covers and protects a bird's body?
10. What type of feather provides insulation from the cold?
11. Birds feel for food in their bill because they have a poor sense of _____.
12. What is the name for the beak-like mouth-part of waterfowl?
13. Which feathers provide waterproof covering and are necessary for flight?
14. Which swan species has a wedge-shaped bill with a red border on the lower mandible?
15. What kind of area is M'Clintock Bay? Hint: A resting area for migrating water birds.
16. What method of feeding do swans, geese, and some ducks, such as Mallards and American Wigeons use?
17. What type of feet do waterfowl have?

