



Friends of Cooper Island

Monitoring a Changing Arctic since 1975

Seabird Population Scenarios

Use the list of **scenarios** to **generate changes** in your Black Guillemot population. The playing cards will determine your scenario. Pick a starting population between 350 and 950.

1. **Draw** a playing card.
2. **Find** the number of your card on the sheet of scenarios. This tells you what happens to your guillemots this season.
(Ace=1, Jack=11, Queen=12, King=13, number cards = their value)
3. **Calculate** your new population of birds.
4. **Record** the season, scenario, your work and your new population number.





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Math Vitamin: Black Guillemot Research Scenarios

1. New nest boxes laid out by scientists have protected many of the chicks from polar bears and the population **doubles**.
2. **Half** of the guillemots find a new source of food, fish called sculpins, and they each raise **one** chick. As for the other **half**, **half** of them raise **2** chicks, and the other **half** raises **zero**.
3. Your guillemots fly far out to sea. On their way back to the island, **33** don't make it through a storm, but **sixty-two** new birds get blown off course and settle on your island.
4. Puffins are trying to move in! They have taken over **10** nest sites. Decrease the population by 15 chicks.
5. **Twelve** marauding polar bears have eaten **3** chicks each.
6. Summer was short and only **27** pairs of birds were able to mate, lay eggs, and raise chicks. Add 27 chicks to your population.
7. Summer was mild and long and for every current pair of birds, **two** chicks are hatched.
8. An oil spill causes **82** of the birds to die.
9. There is little sea ice and, therefore, very few Arctic cod. **47** seabirds die.
10. Over the course of the summer, **9** polar bears eat **4** birds each.
11. There have been large schools of Arctic Cod this month, which has kept the seabirds well fed. A **quarter** of the population triples, and one **half** of the population doubles, and the last **quarter** don't produce any chicks.
12. Each nesting pair of birds produced **1** chick, but then Jaeger came through and ate **half** of the chicks.
13. Early snow fell and only the toughest birds survived. **43** guillemots didn't make it.
14. **Eight** Arctic foxes snuck into the bird's territory and half of them ate **3** chicks each, the other half ate **5** chicks each.
15. **Fifteen** guillemots are caught in a fisherman's net while fishing for cod. **5** manage to free themselves and return to the island.

***** If your population goes down to 0, check in with a teacher!!**