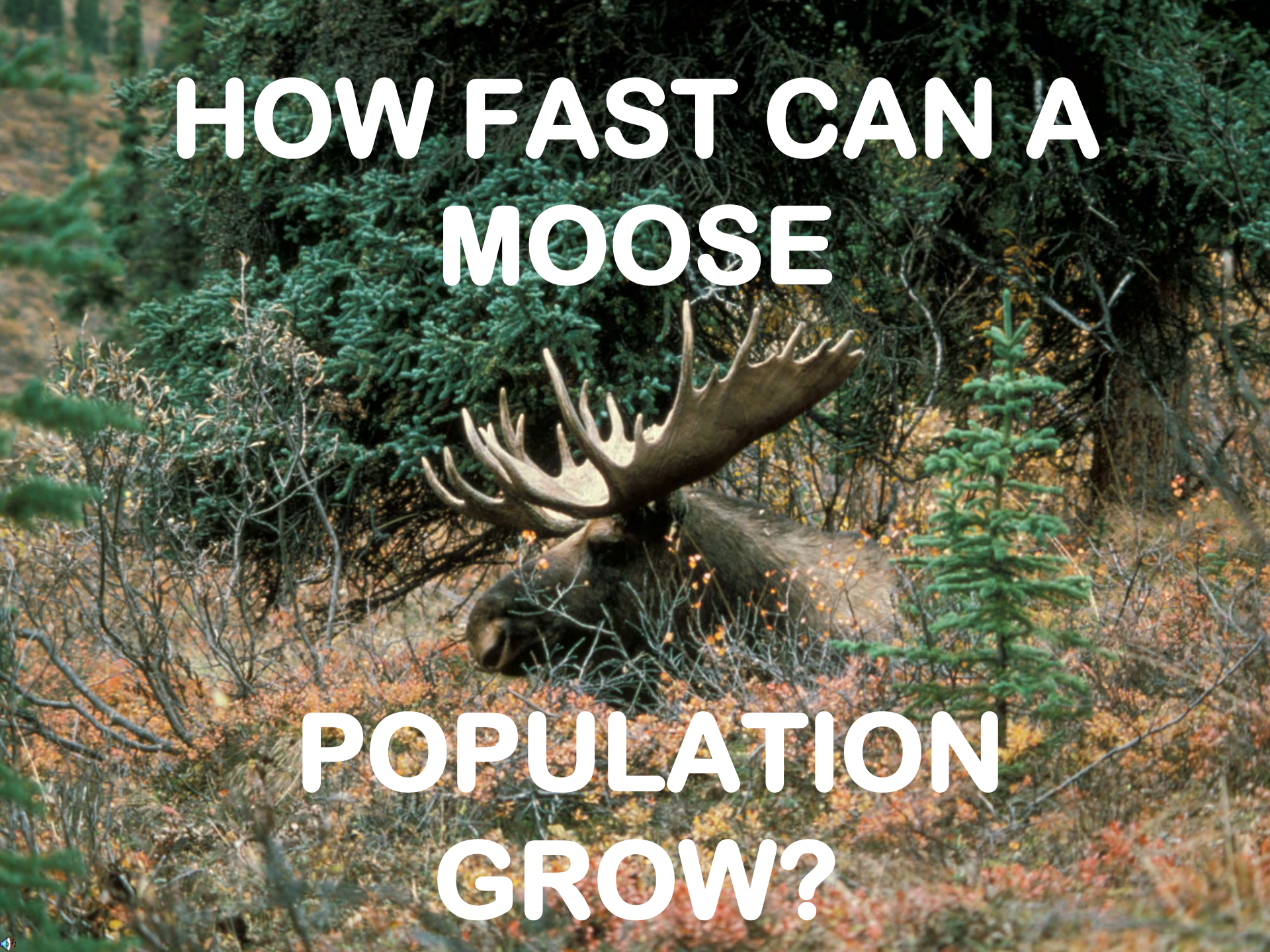
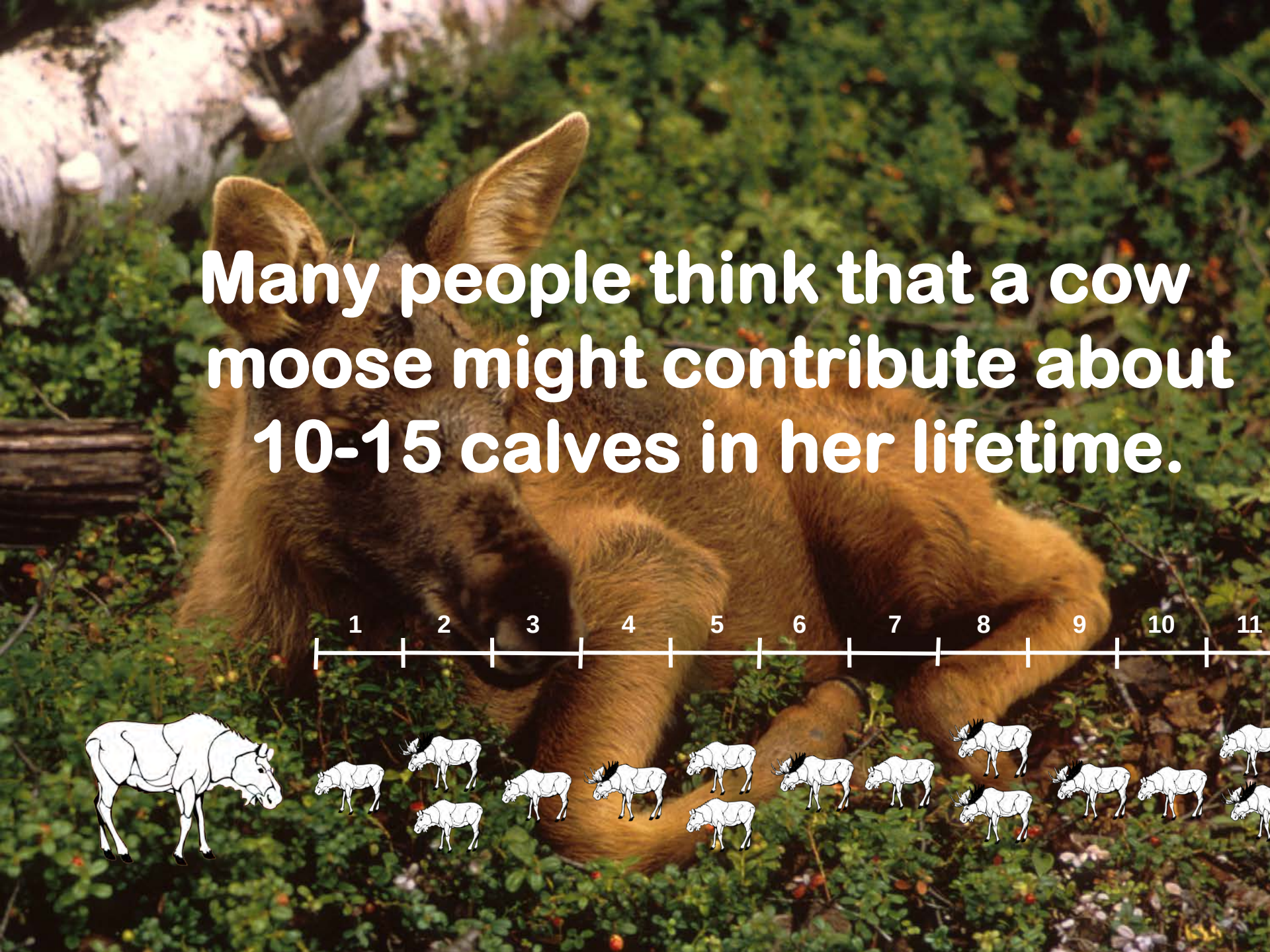

HOW FAST CAN A MOOSE
POPULATION GROW?

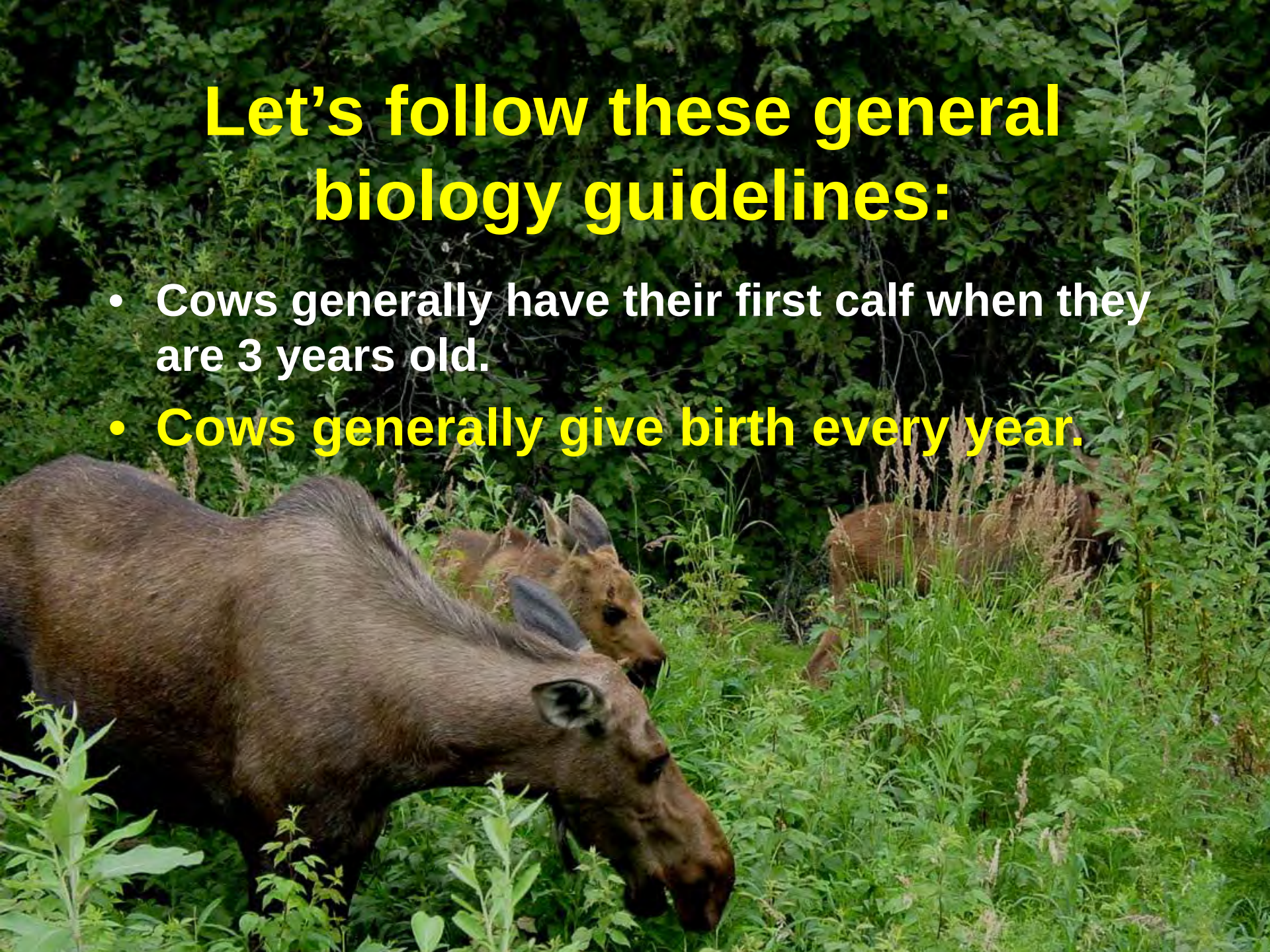

Let's start by asking…
How many calves is a single cow moose responsible for in her life?


Many people think that a cow moose might contribute about 10-15 calves in her lifetime.
1
2
3
4
5
6
7
8
9
10
11


but, this is only part of the picture

To keep things simple, lets follow these general biology guidelines (this will vary from region to region depending on several factors such as habitat and predation):

- **Cows generally have their first calf when they are 3 years old.** In areas with good habitat this may be 2 years old.

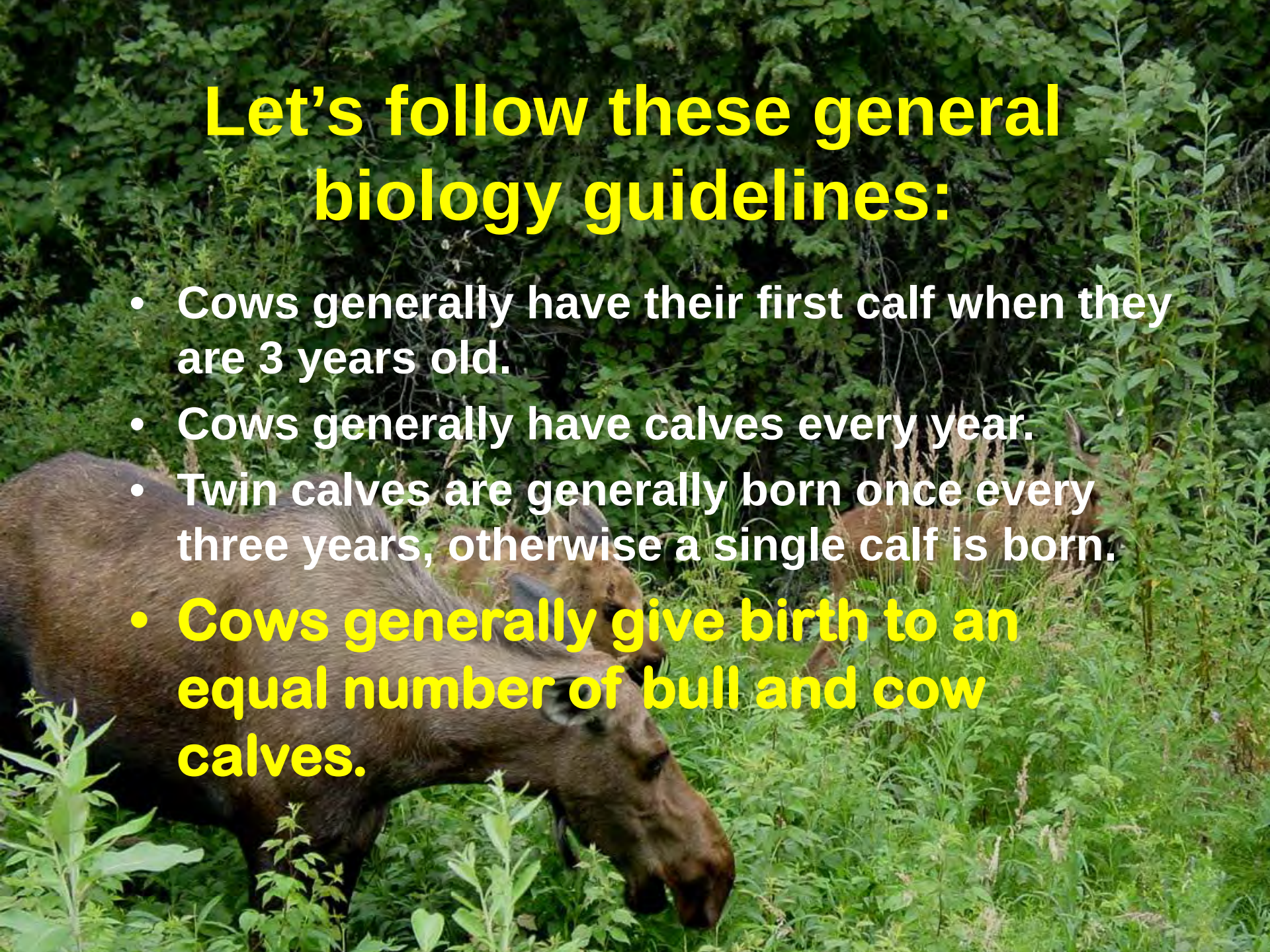


Let's follow these general biology guidelines:

- Cows generally have their first calf when they are 3 years old.
- Cows generally give birth every year.

Let's follow these general biology guidelines:

- Cows generally have their first calf when they are 3 years old.
- Cows generally have calves every year.
- **Twin calves are generally born once every three years, otherwise a single calf is born.**



Let's follow these general biology guidelines:

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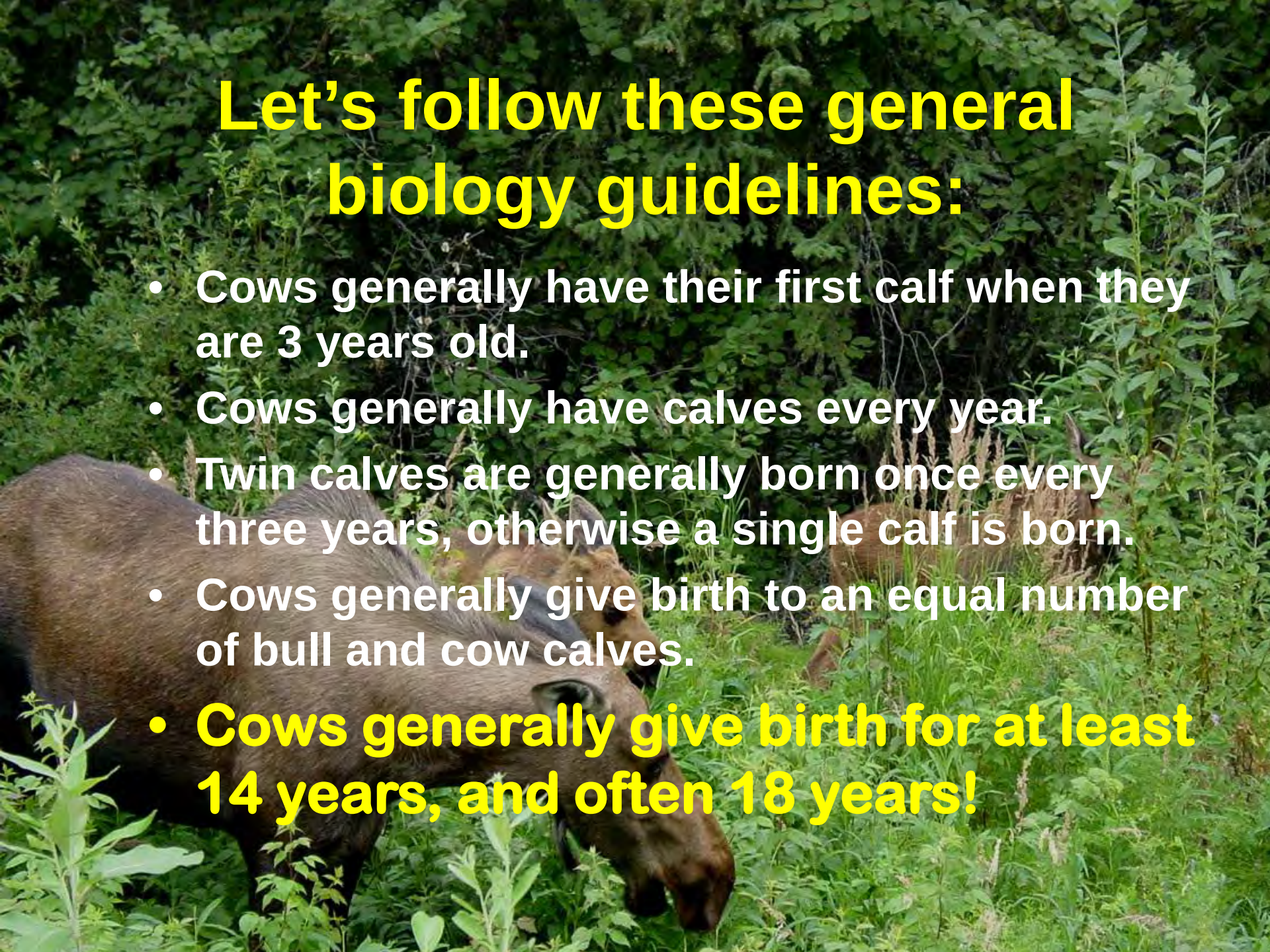
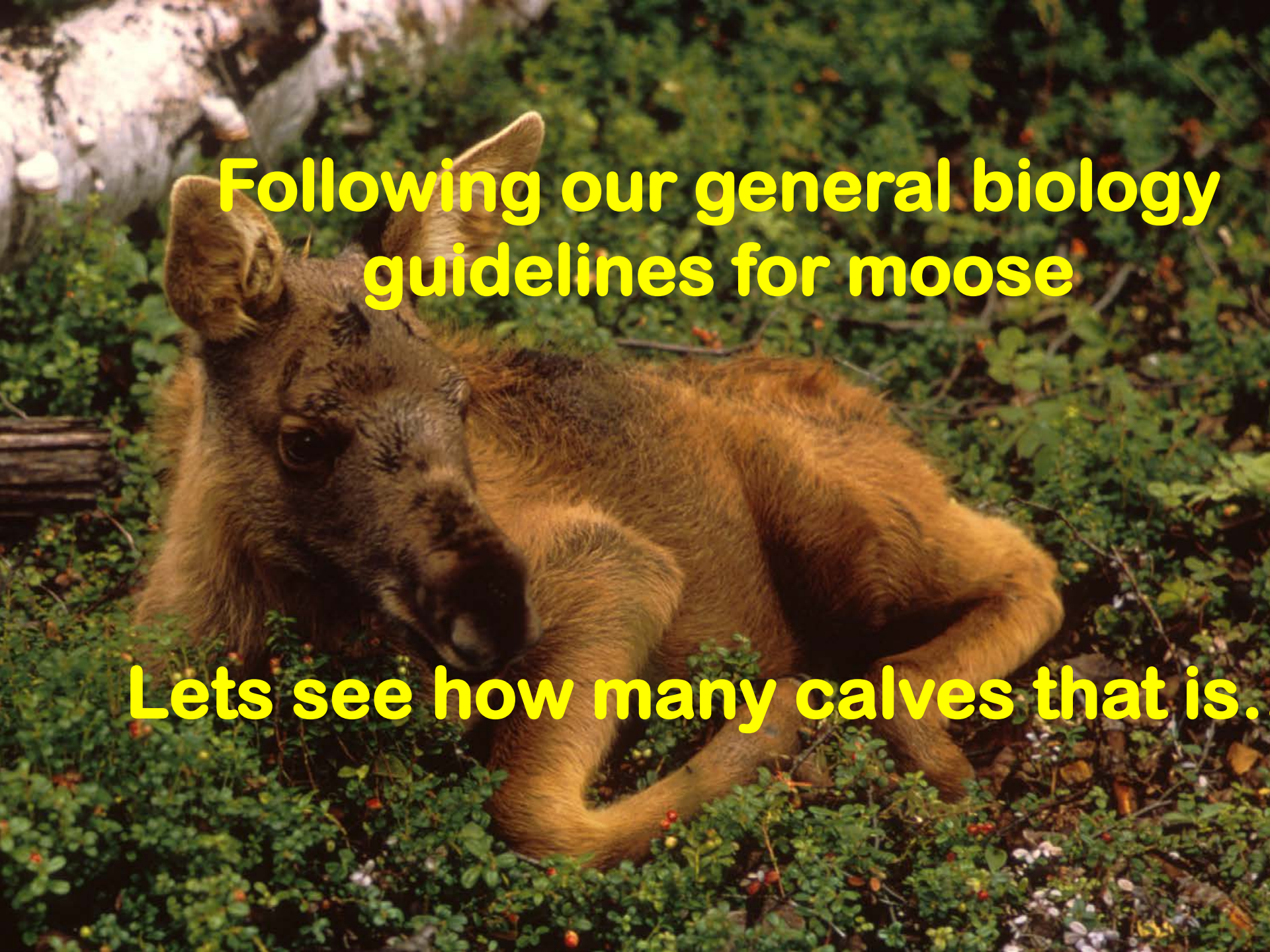
- **Cows generally give birth to an equal number of bull and cow calves.**



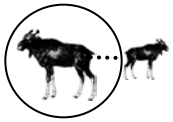
Let's follow these general biology guidelines:

- Cows generally have their first calf when they are 3 years old.
- Cows generally have calves every year.
- Twin calves are generally born once every three years, otherwise a single calf is born.
- Cows generally give birth to an equal number of bull and cow calves.
- **Cows generally give birth for at least 14 years, and often 18 years!**


Following our general biology guidelines for moose
Lets see how many calves that is.

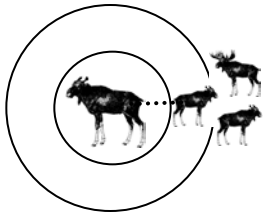

A cow has her first calf
when she is 3 years old...

The cow is 3 years old.
The circle is her 1st year of giving birth.



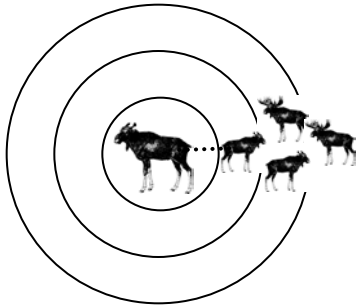

In her second year of giving birth she has her first set of twins…

Her 2nd year of giving birth.
She is age 4.




The following year she has
a single calf...

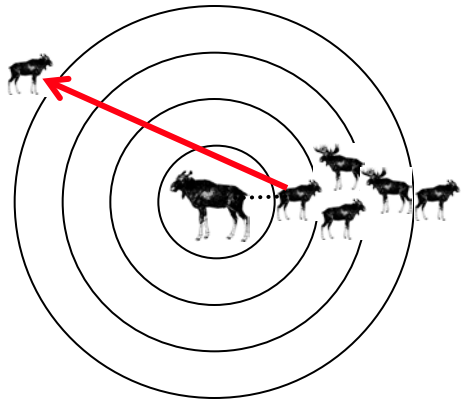
Her 3rd year of giving birth. Age 5

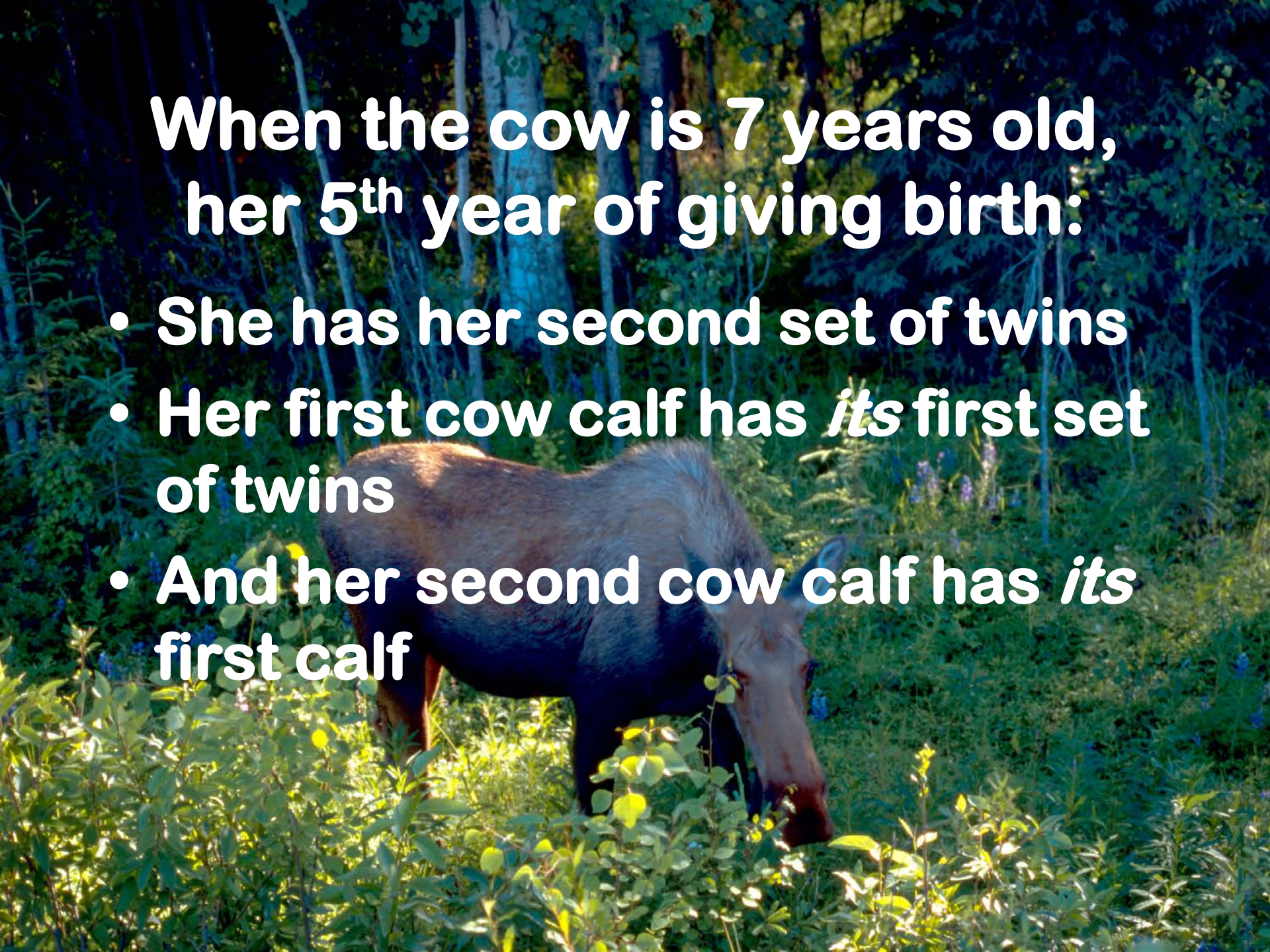


The cow is now 6 years old

- She has another single calf.
- Her first cow calf now has *its* first calf.

Her 4th year of giving birth, Age 6.

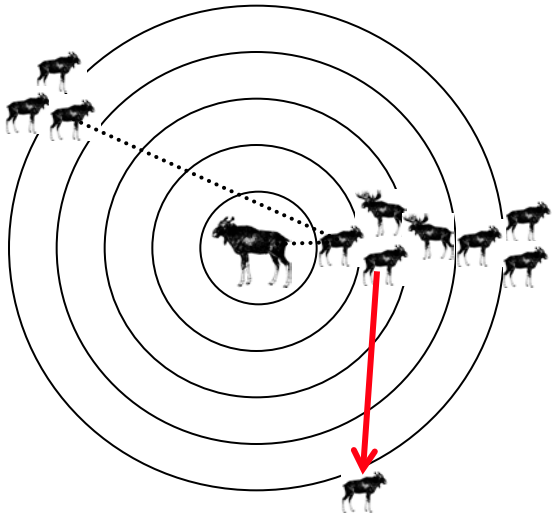




When the cow is 7 years old, her 5th year of giving birth:

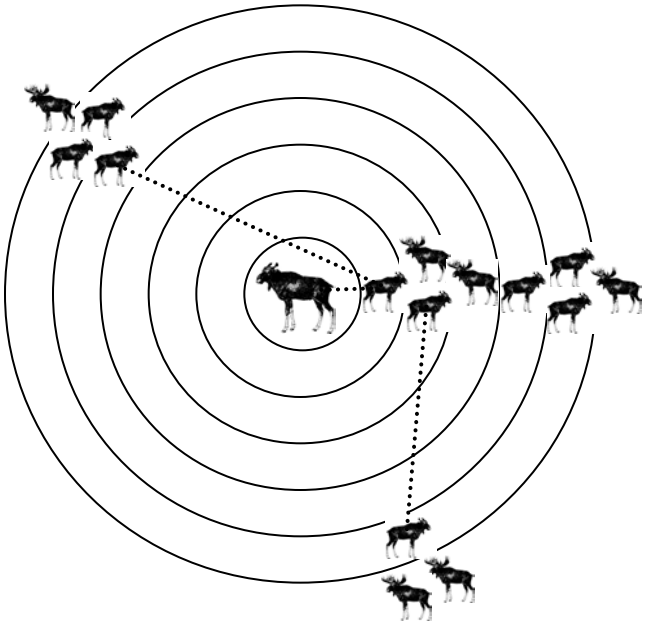
- She has her second set of twins
- Her first cow calf has *its* first set of twins
- And her second cow calf has *its* first calf

Her 5th year of giving birth, age 7.

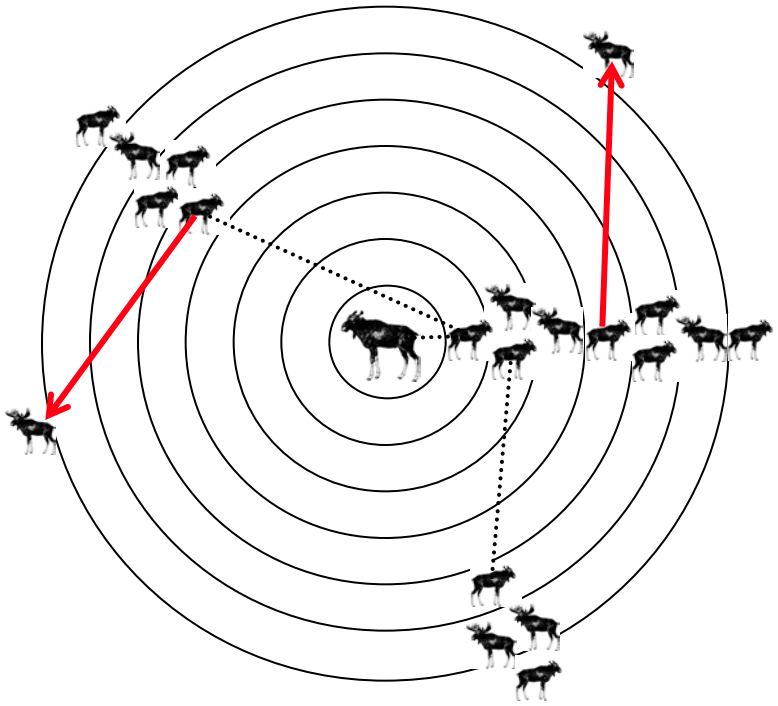



And so on until she
becomes 16 years old…

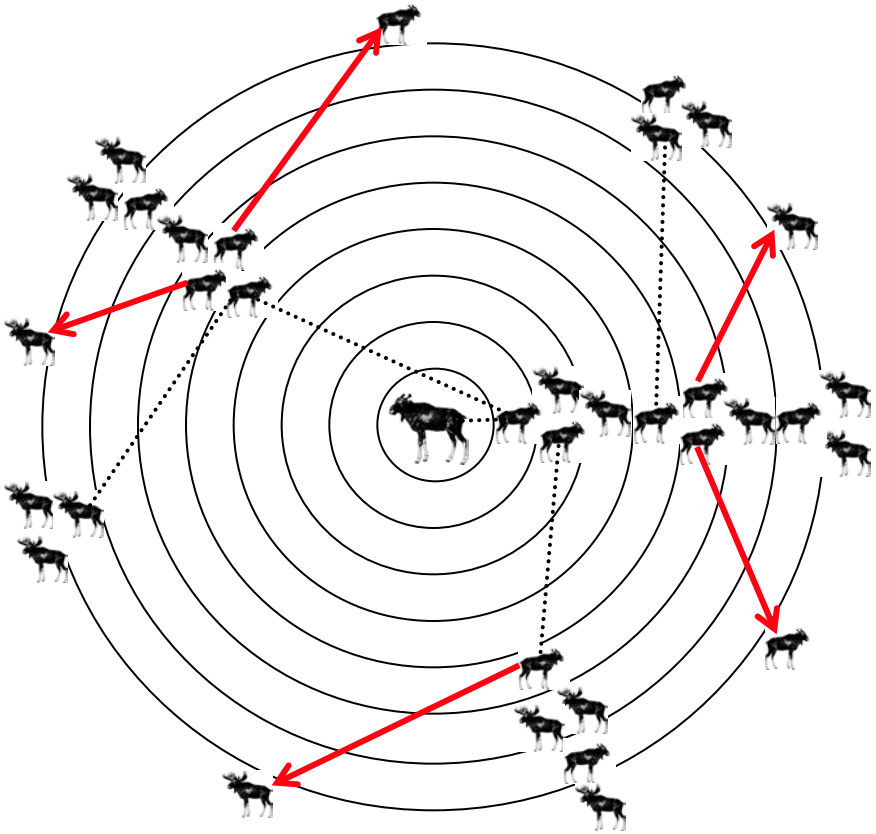
Her 6th year of giving birth, Age 8.



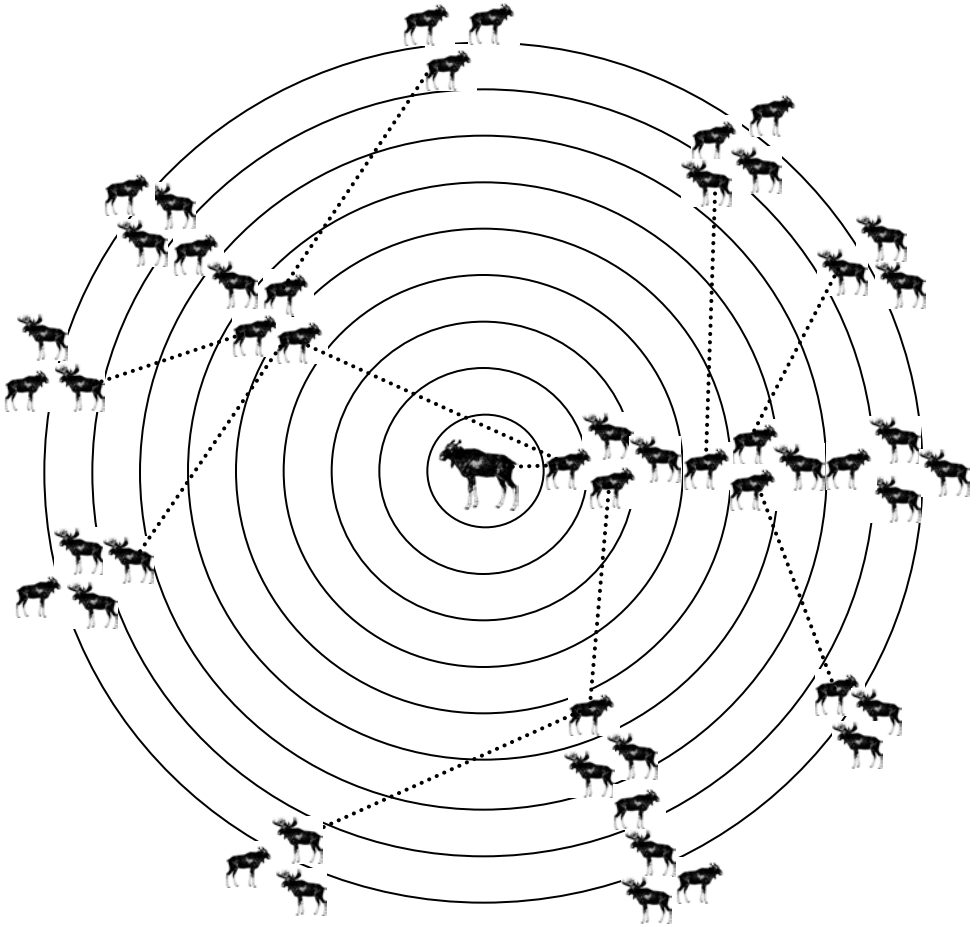
Age 9



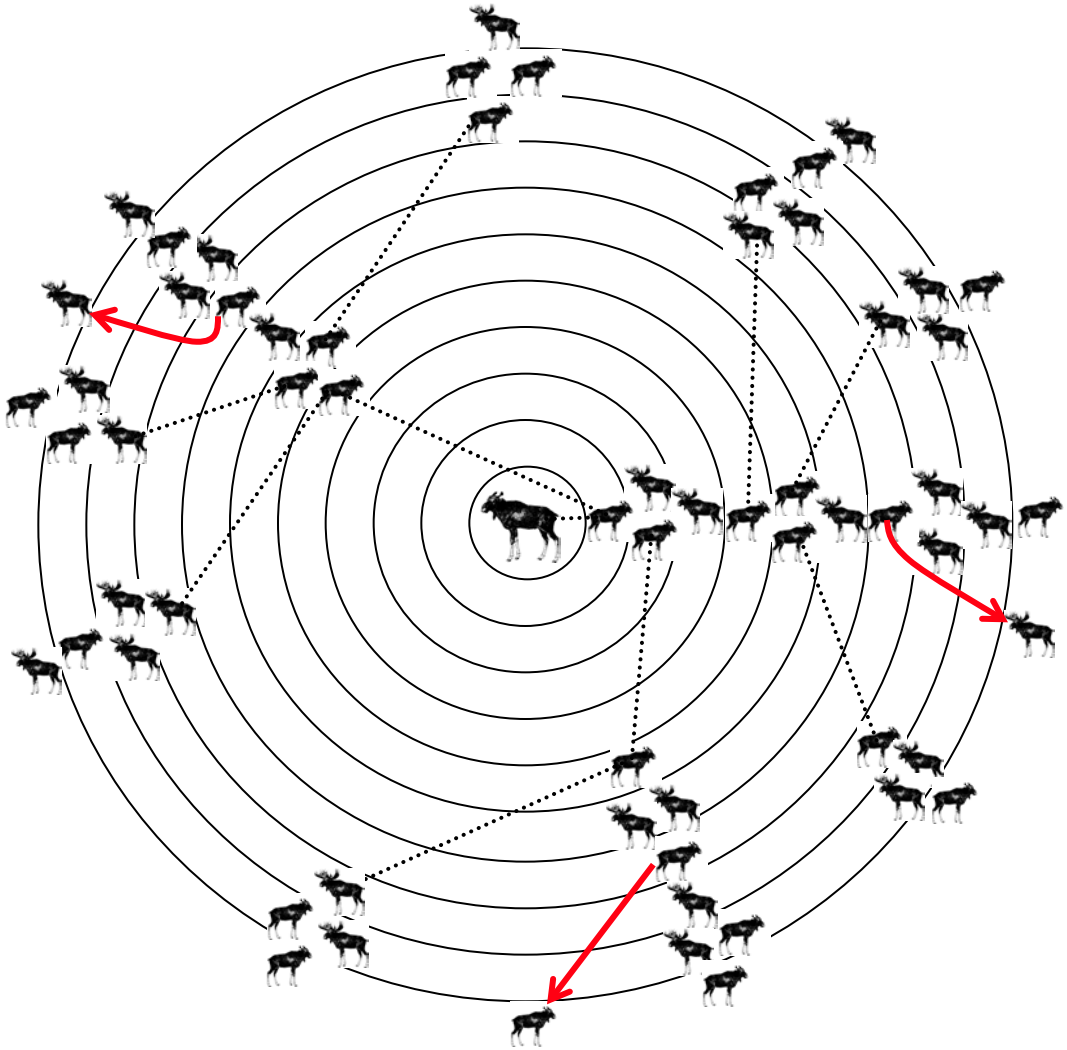
Age 10



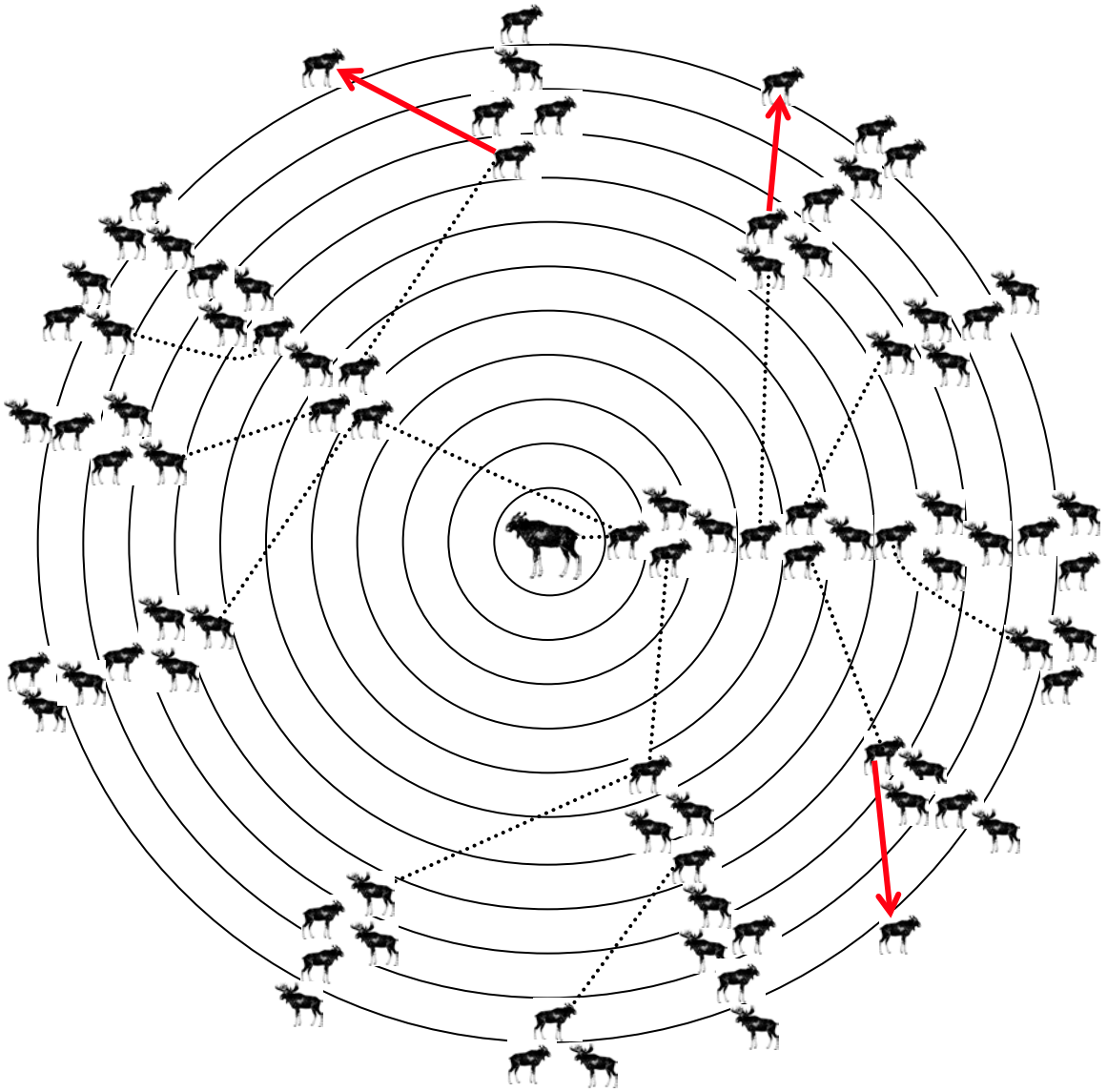
Age 11



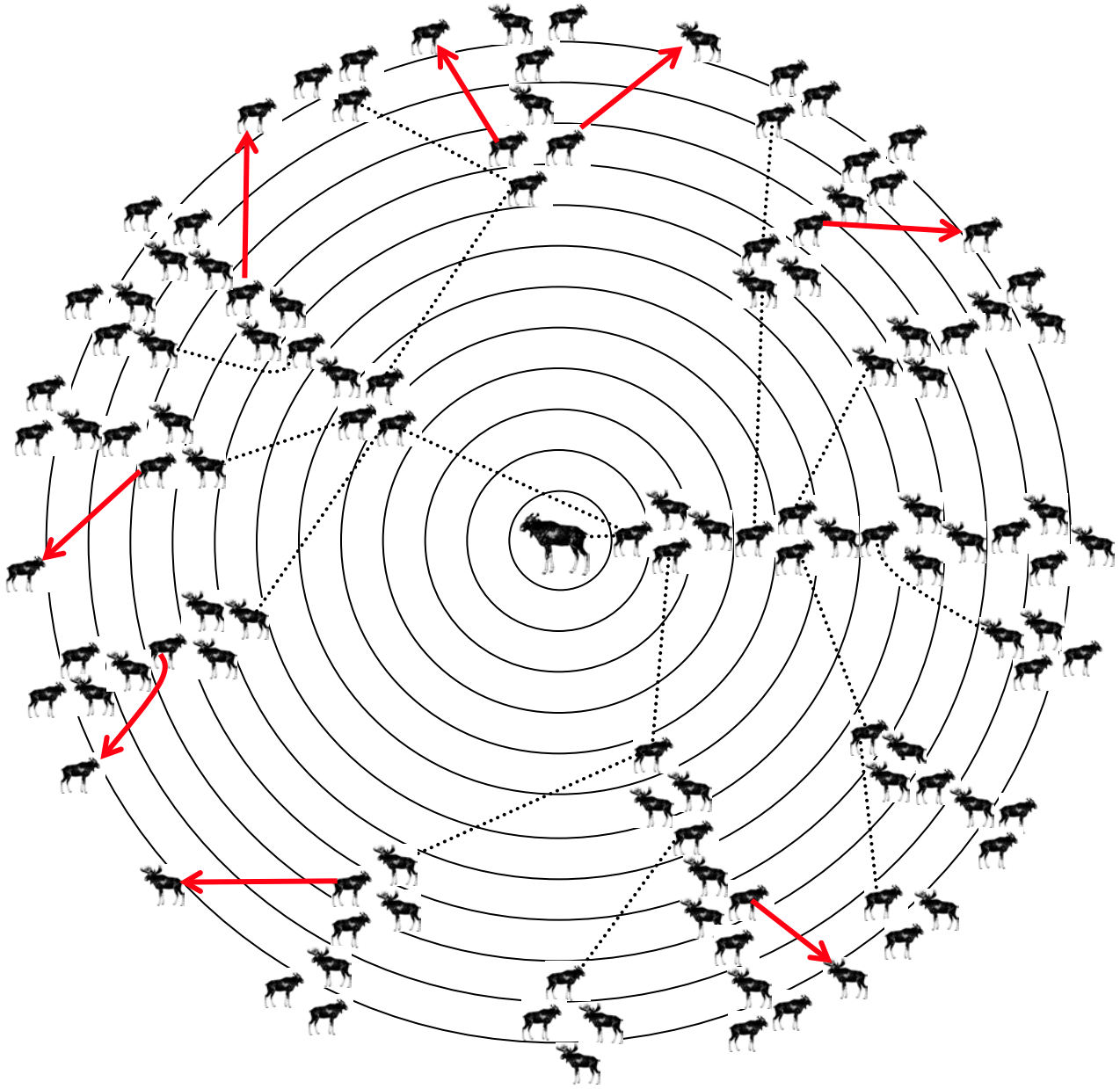
Year 12



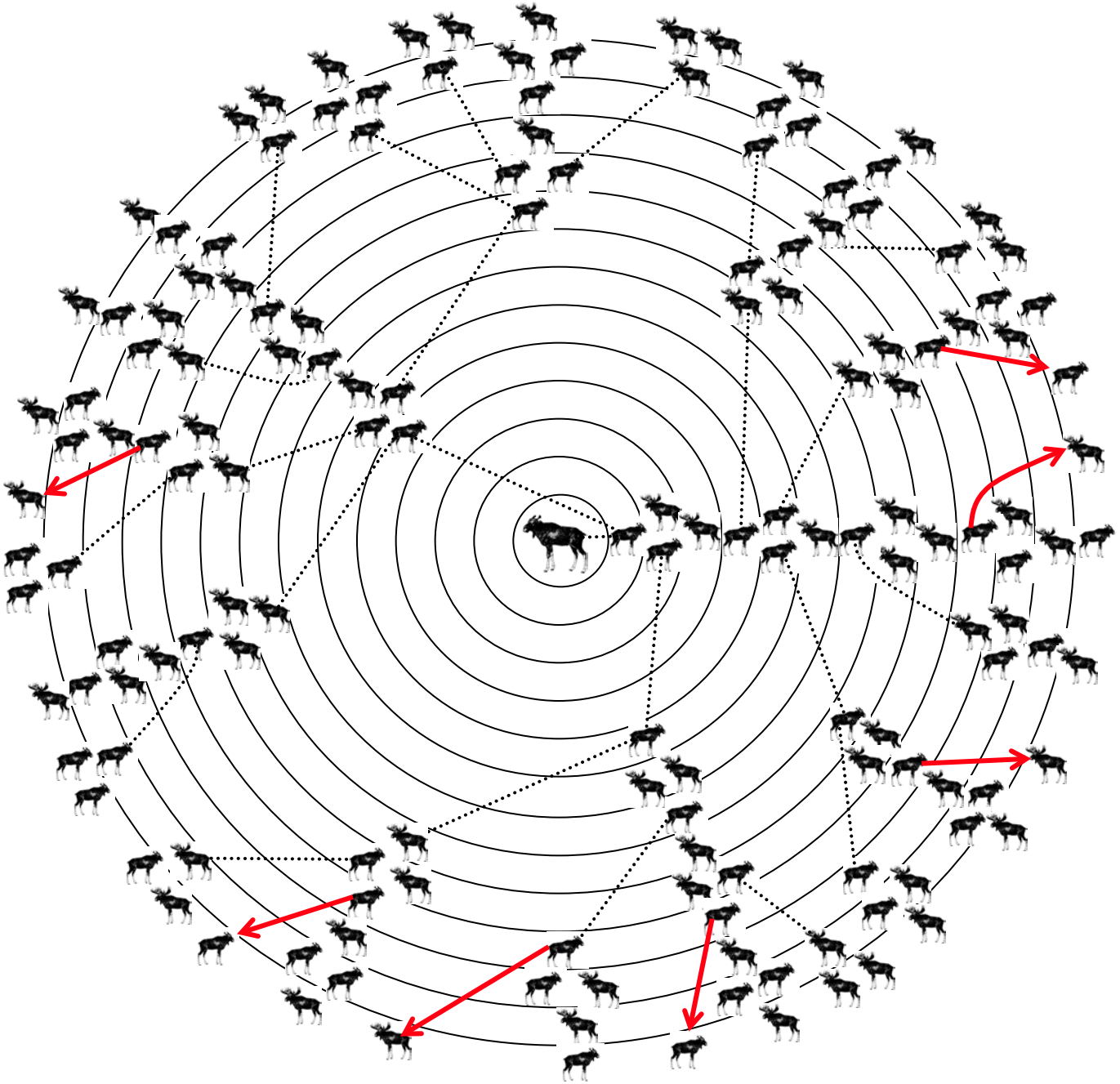
Year 13



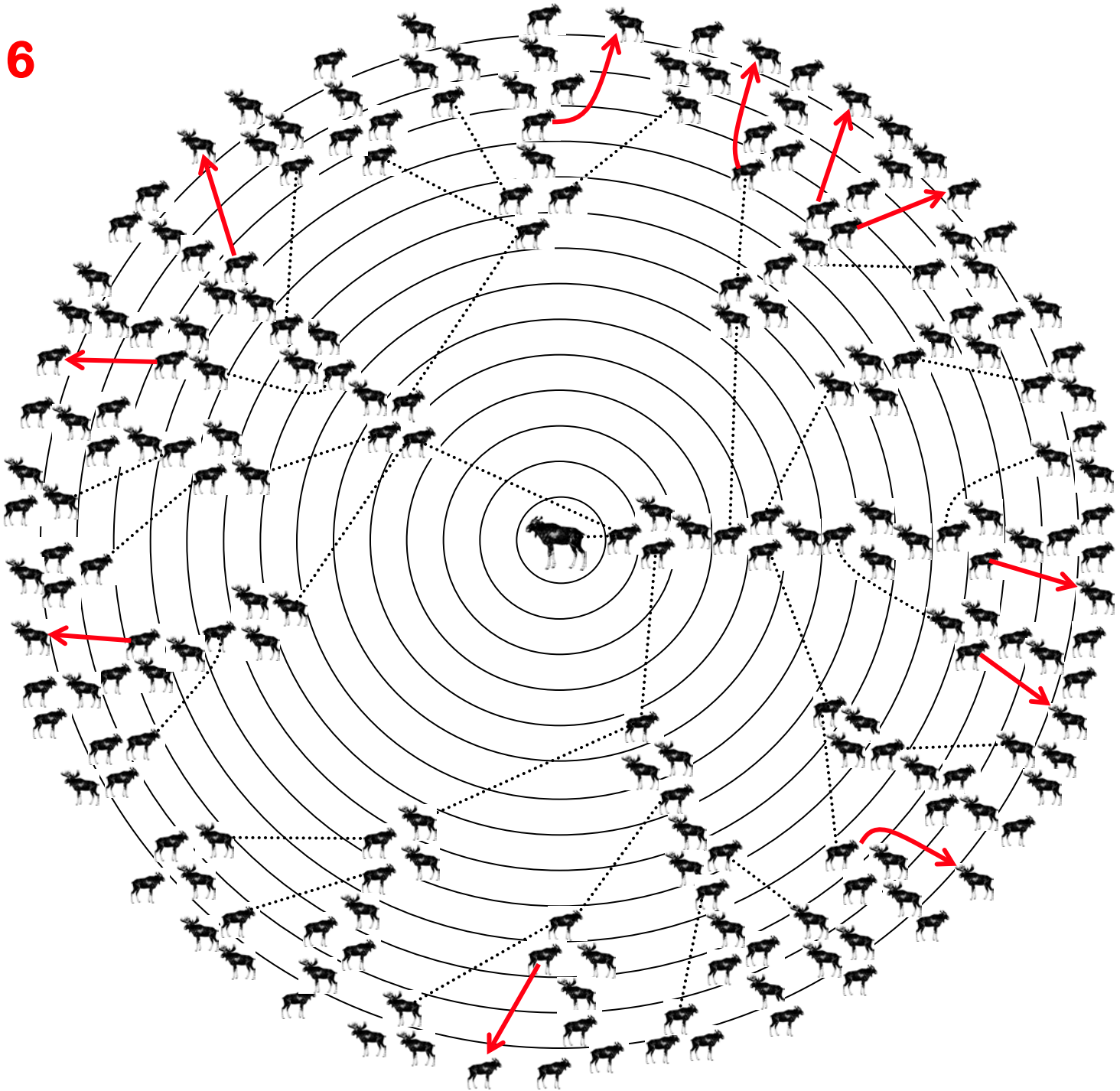
Age 14

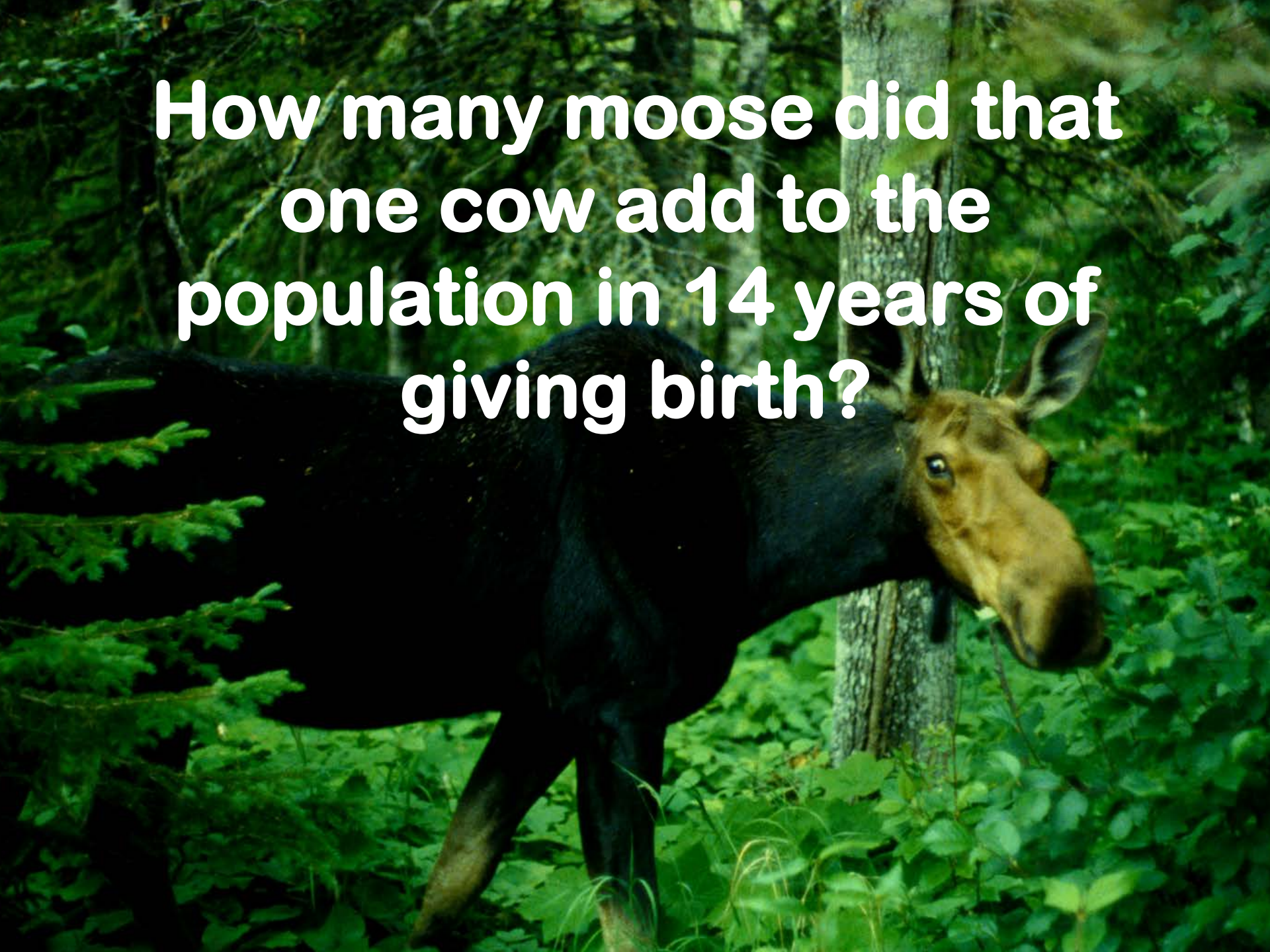


Age 15

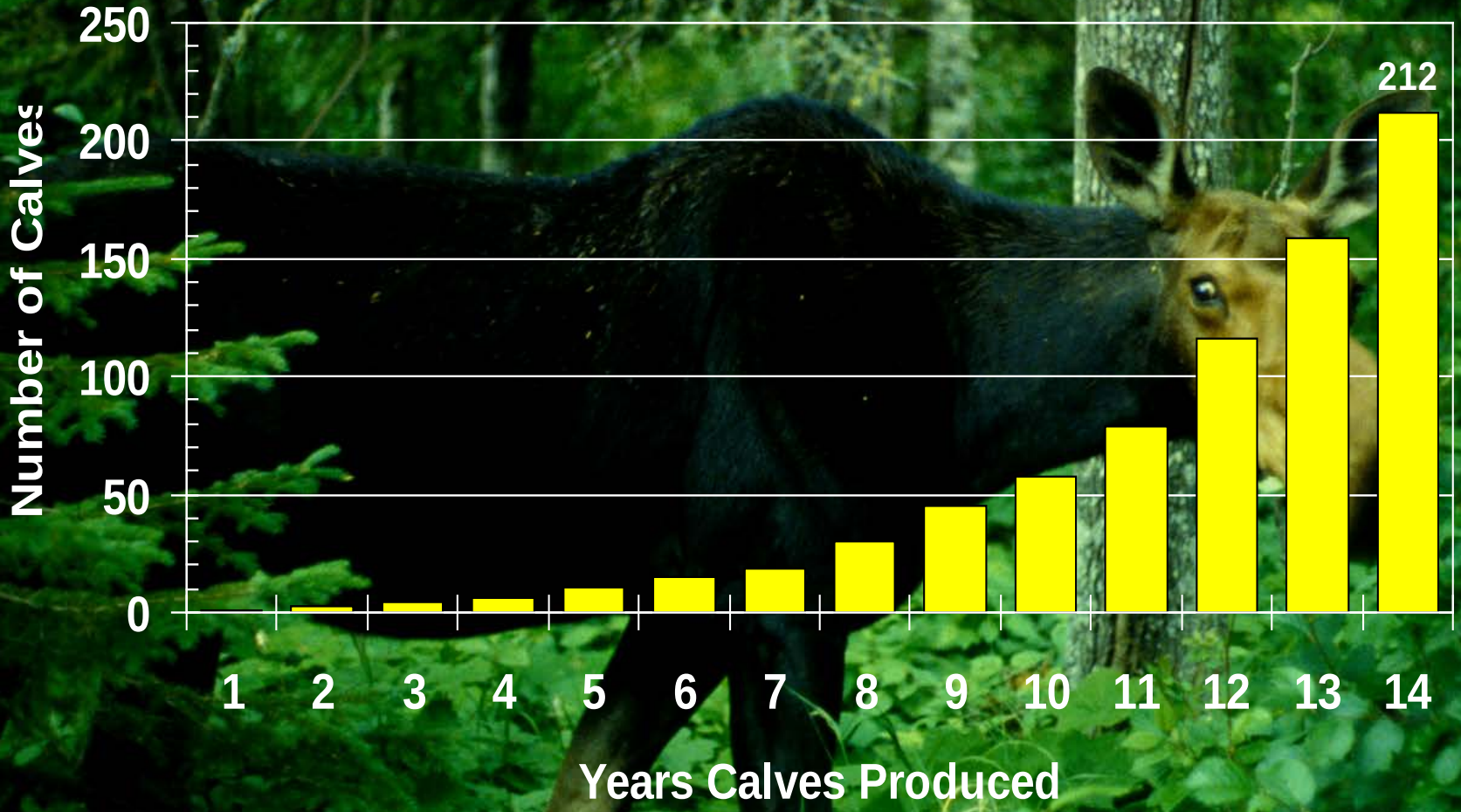


Age 16




How many moose did that one cow add to the population in 14 years of giving birth?

Number of calves potentially produced over 14 years from 1 cow moose and her offspring..... 212!




And about half of those
would be bulls.

But is this the way a moose population really grows?

What are we missing here?

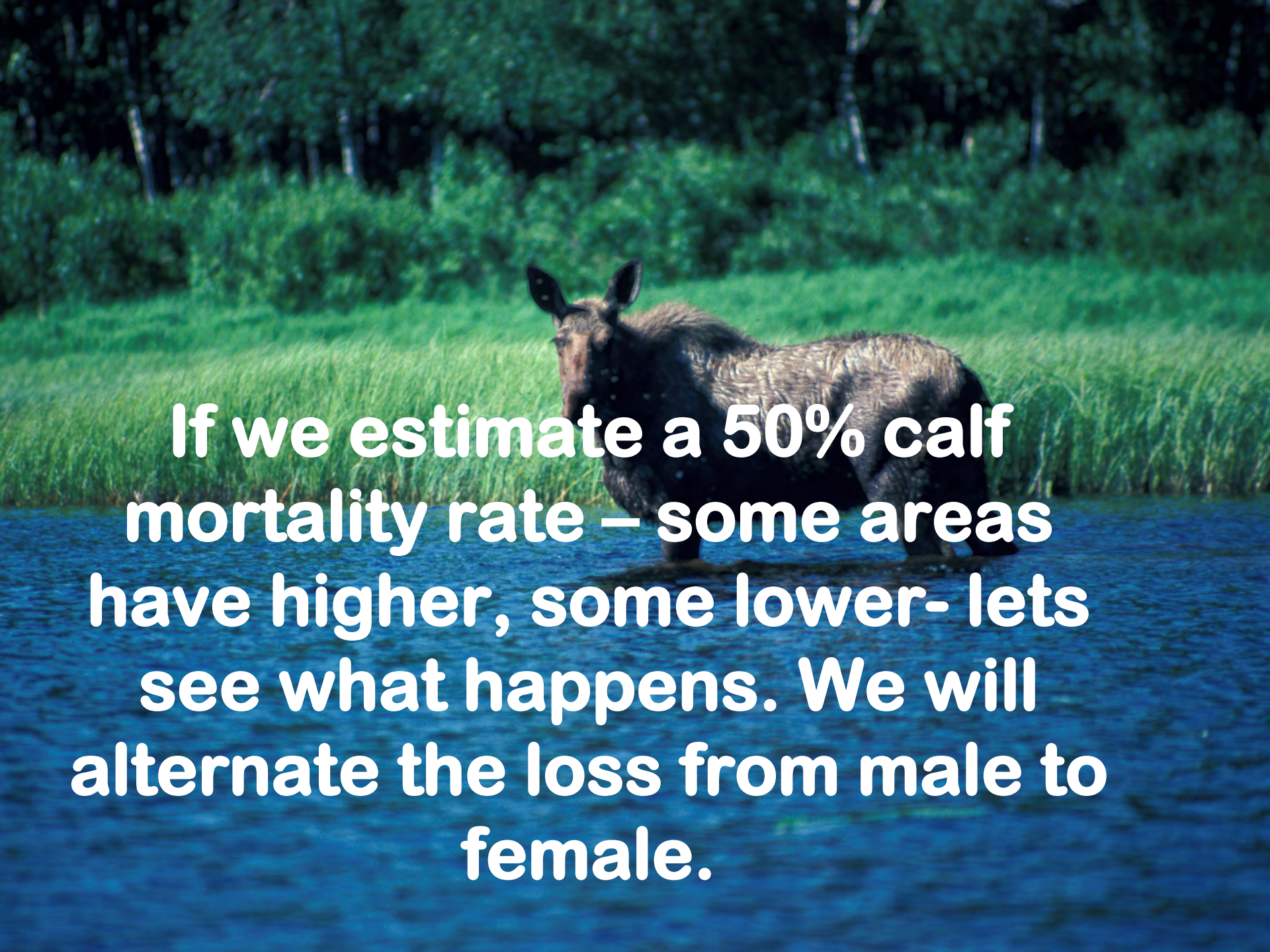
That's right. Mortality

We know that all animal populations suffer mortality.

What are some causes of mortality?

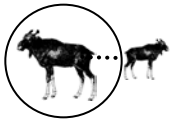
- Predation
- Disease

- Starvation
- Accidents


If we estimate a 50% calf mortality rate – some areas have higher, some lower- lets see what happens. We will alternate the loss from male to female.

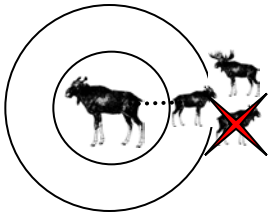

A cow has her first calf
when she is 3 years old...

Year 3




When the cow is 4 years old she has her first set of twins...

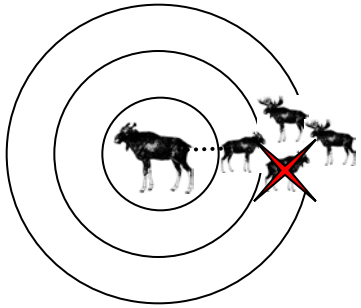
Year 4



= calf that dies


The following year she has
a single calf...

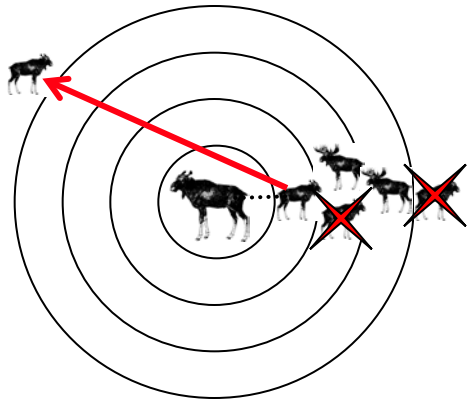
Year 5



The cow is now 6 years old

- She has another single calf
- Her first cow calf now has its first calf

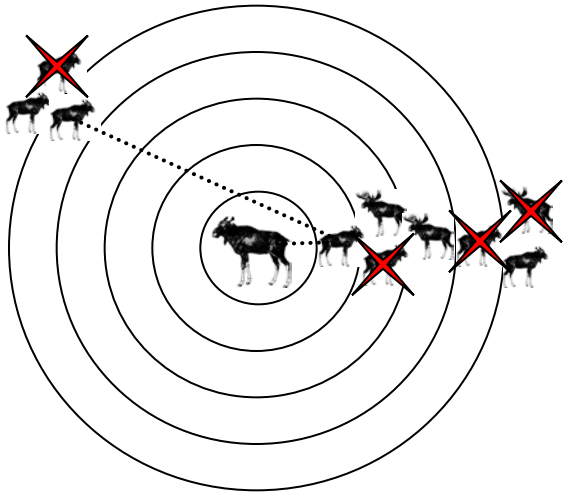
Year 6



When the cow is 7 years old

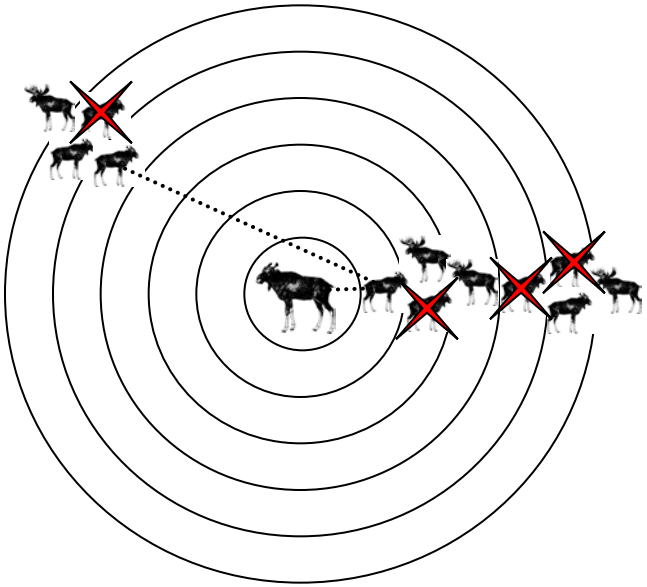
- She has her second set of twins
- Her first cow calf has its first set of twins
- And her second cow calf has its first calf

Year 7

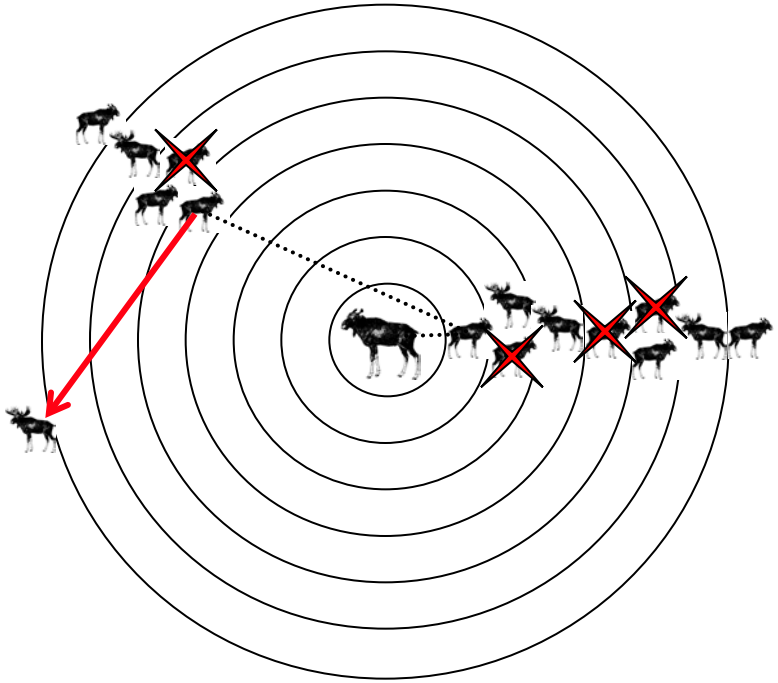



And so on until she
becomes 16 years old…

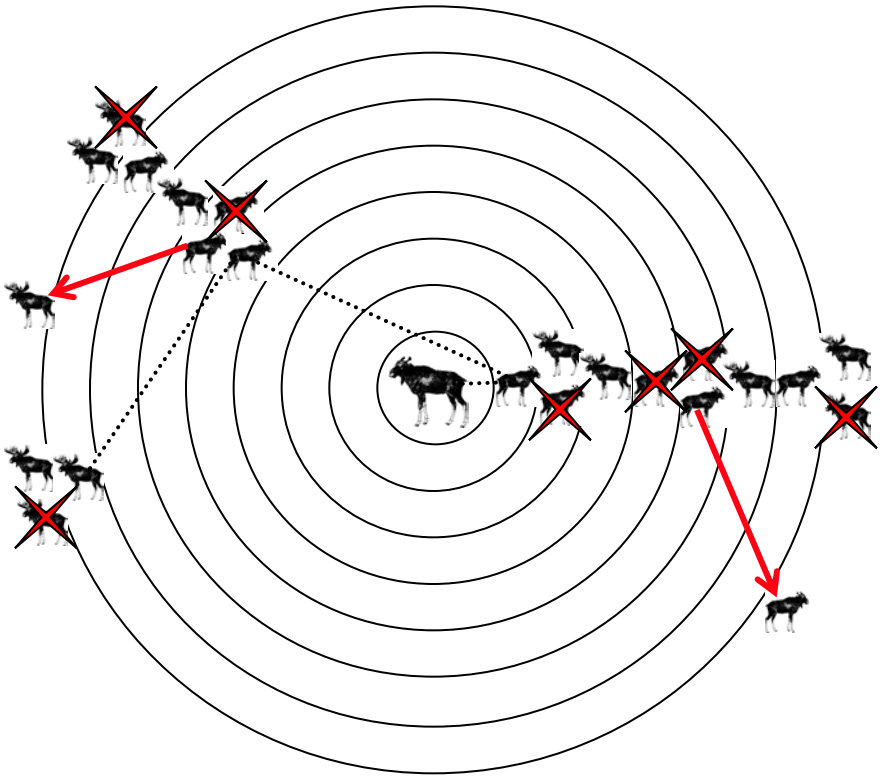
Year 8



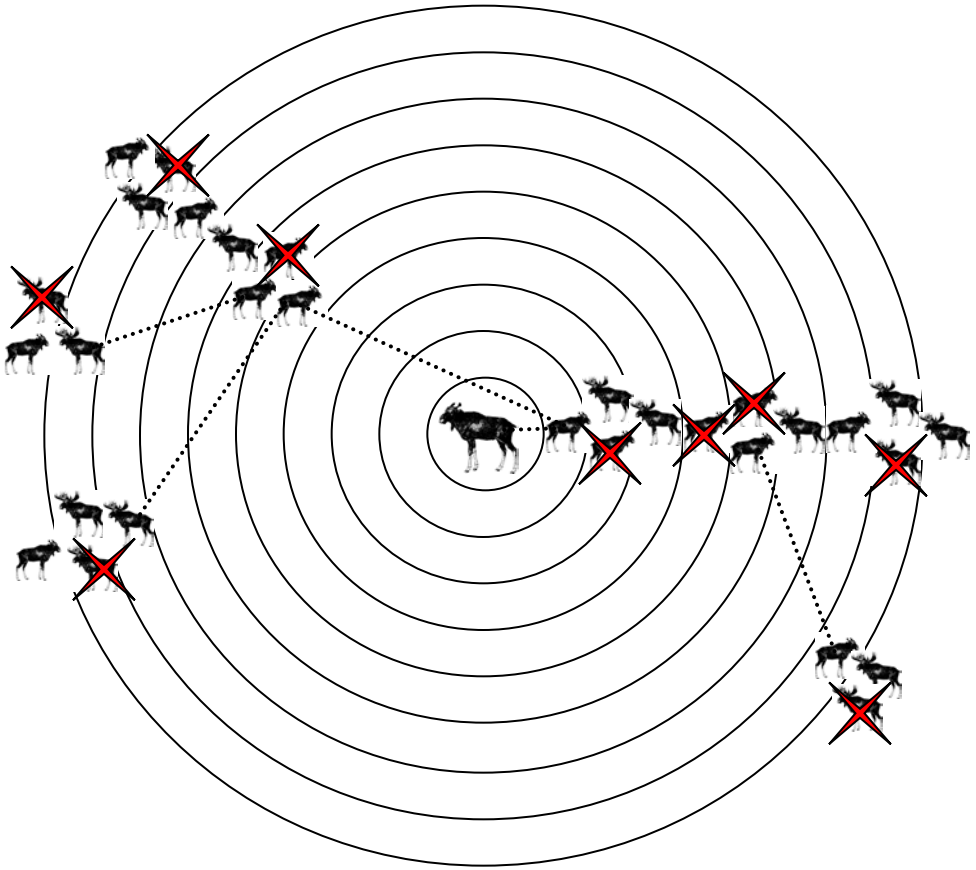
Year 9



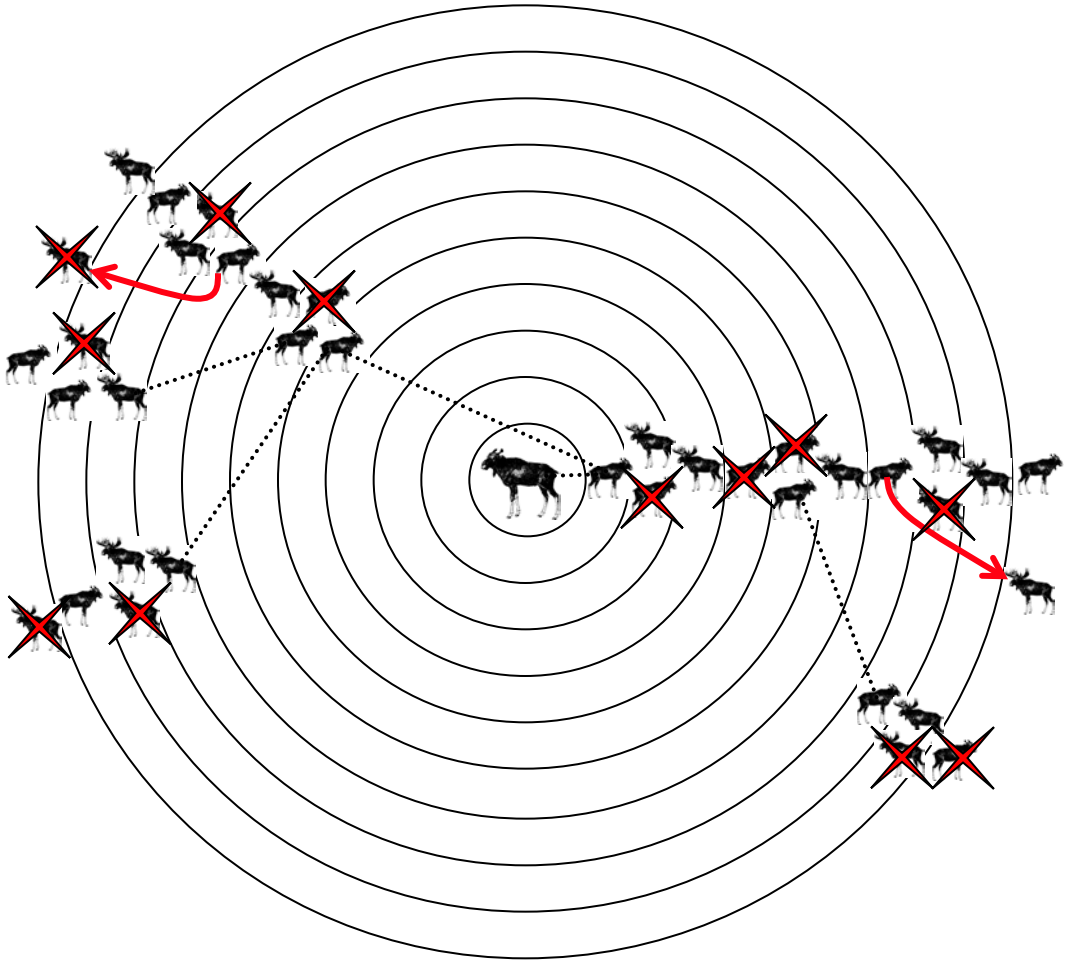
Year 10



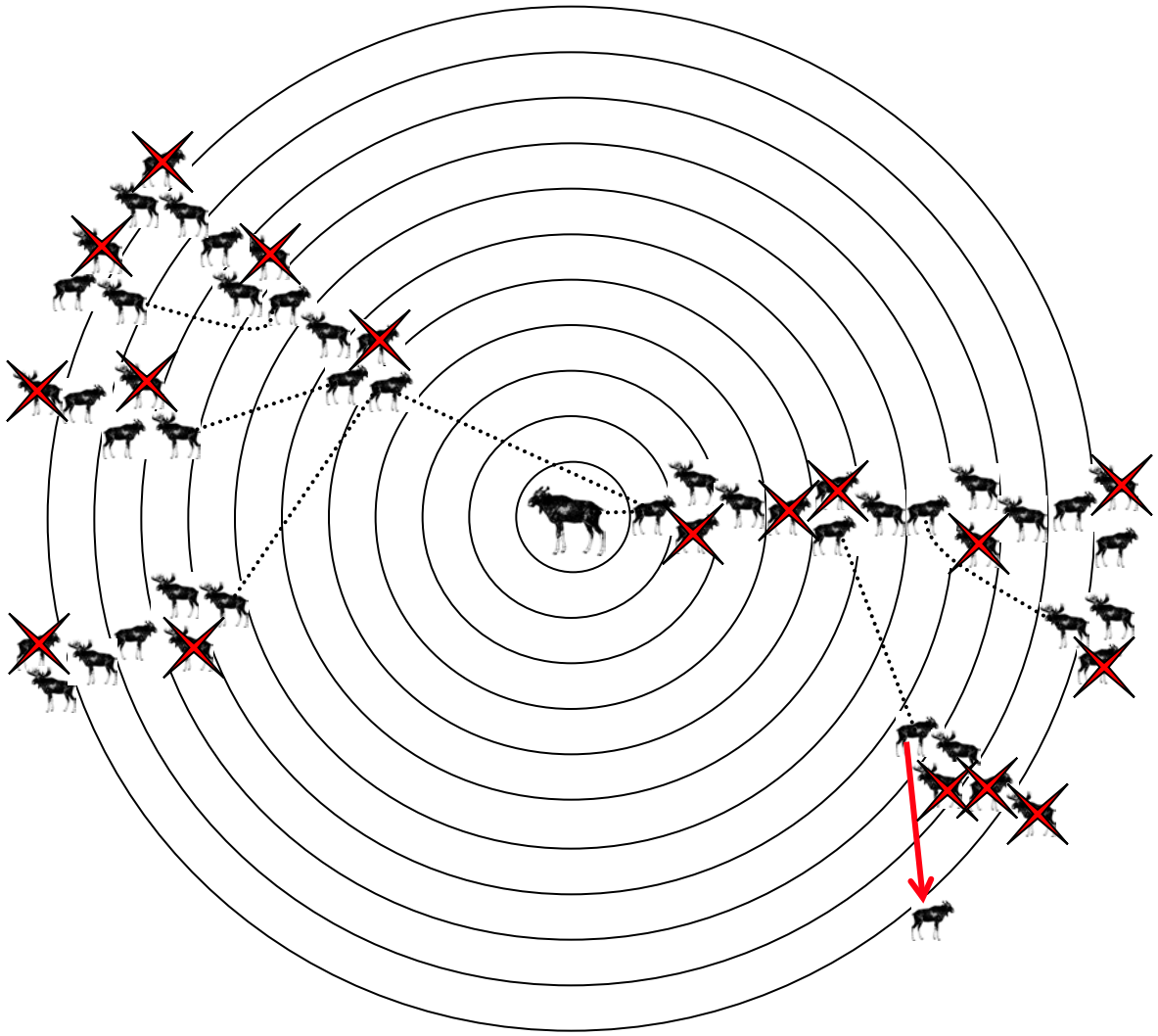
Year 11



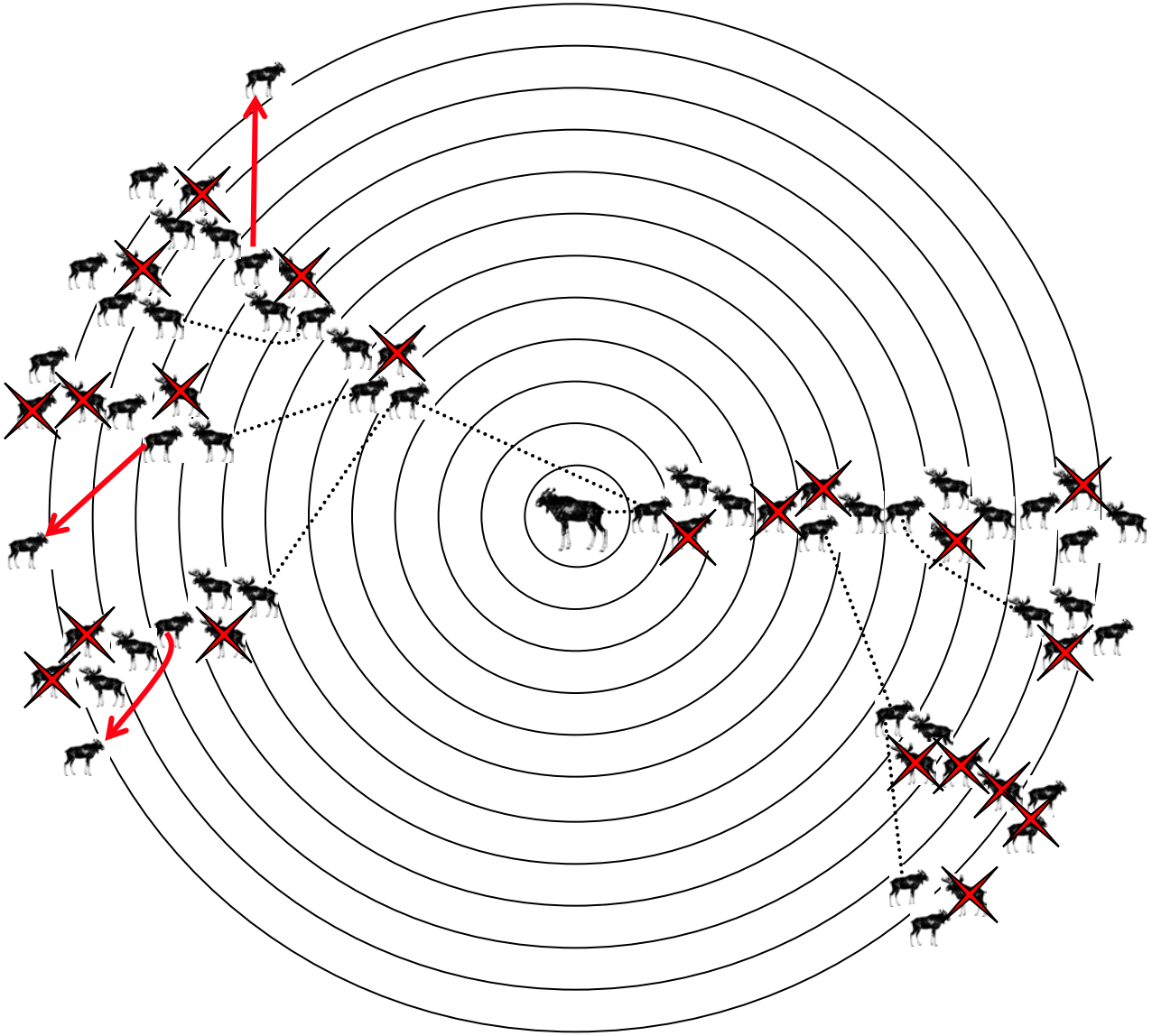
Year 12



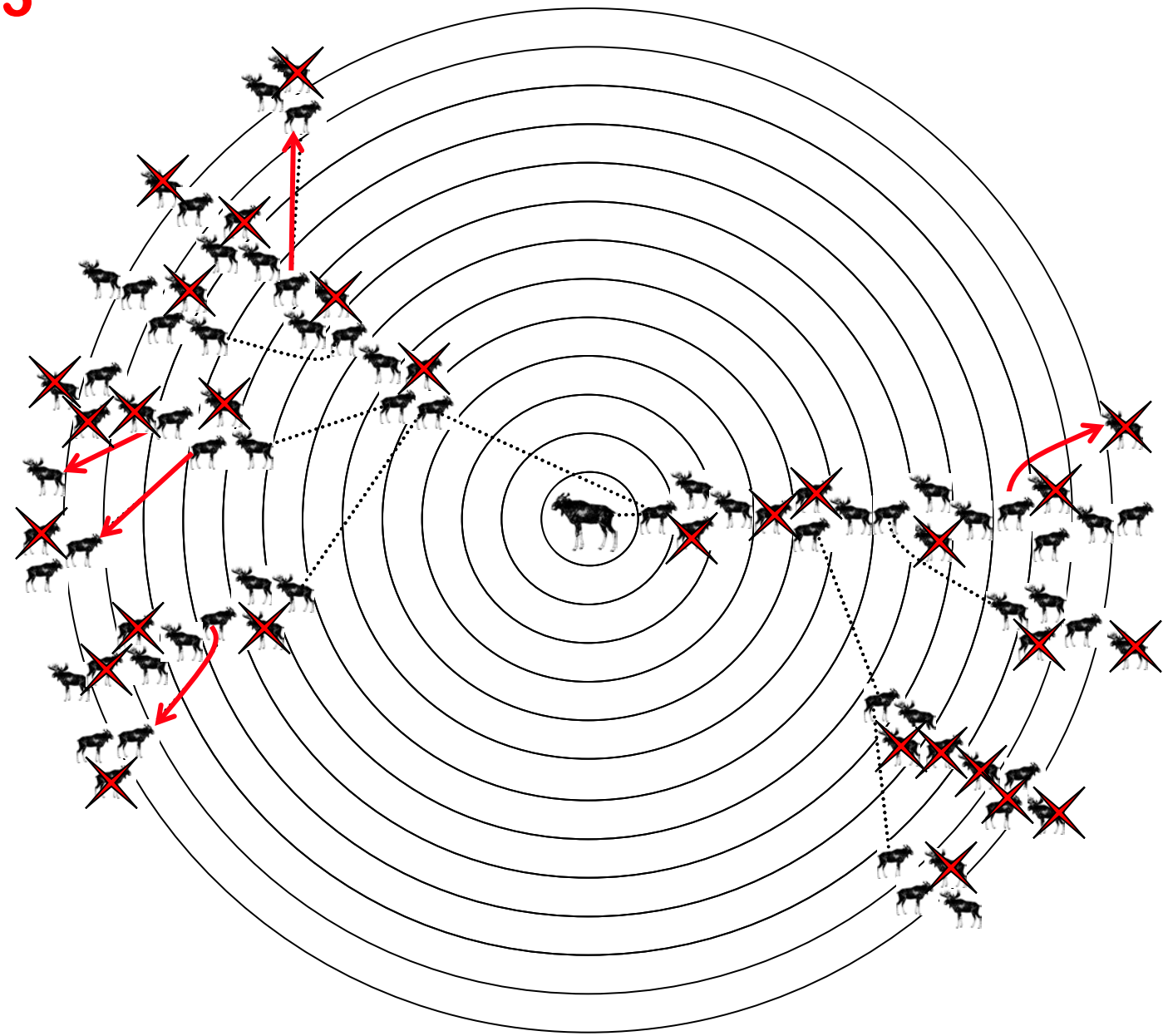
Year 13



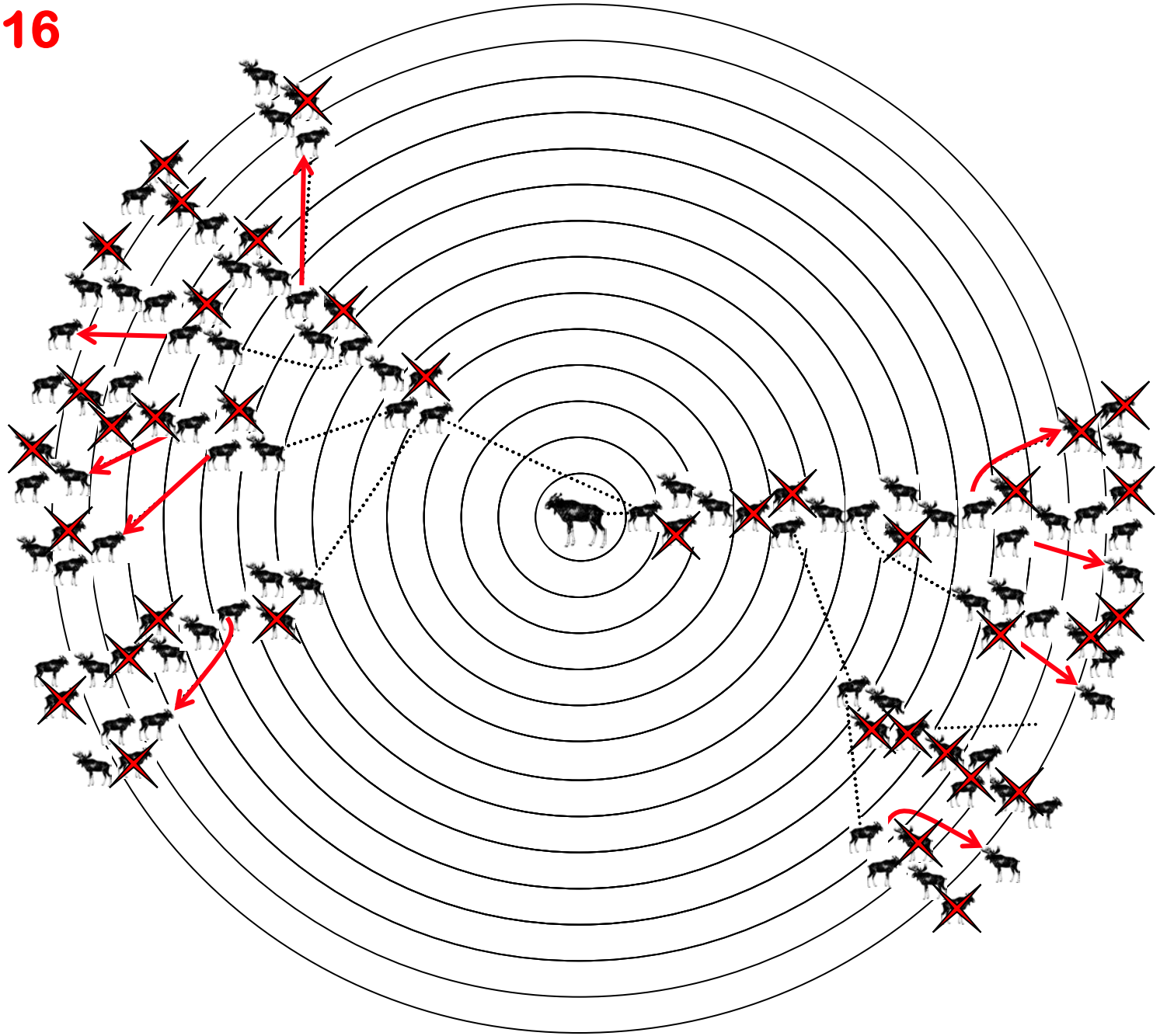
Year 14



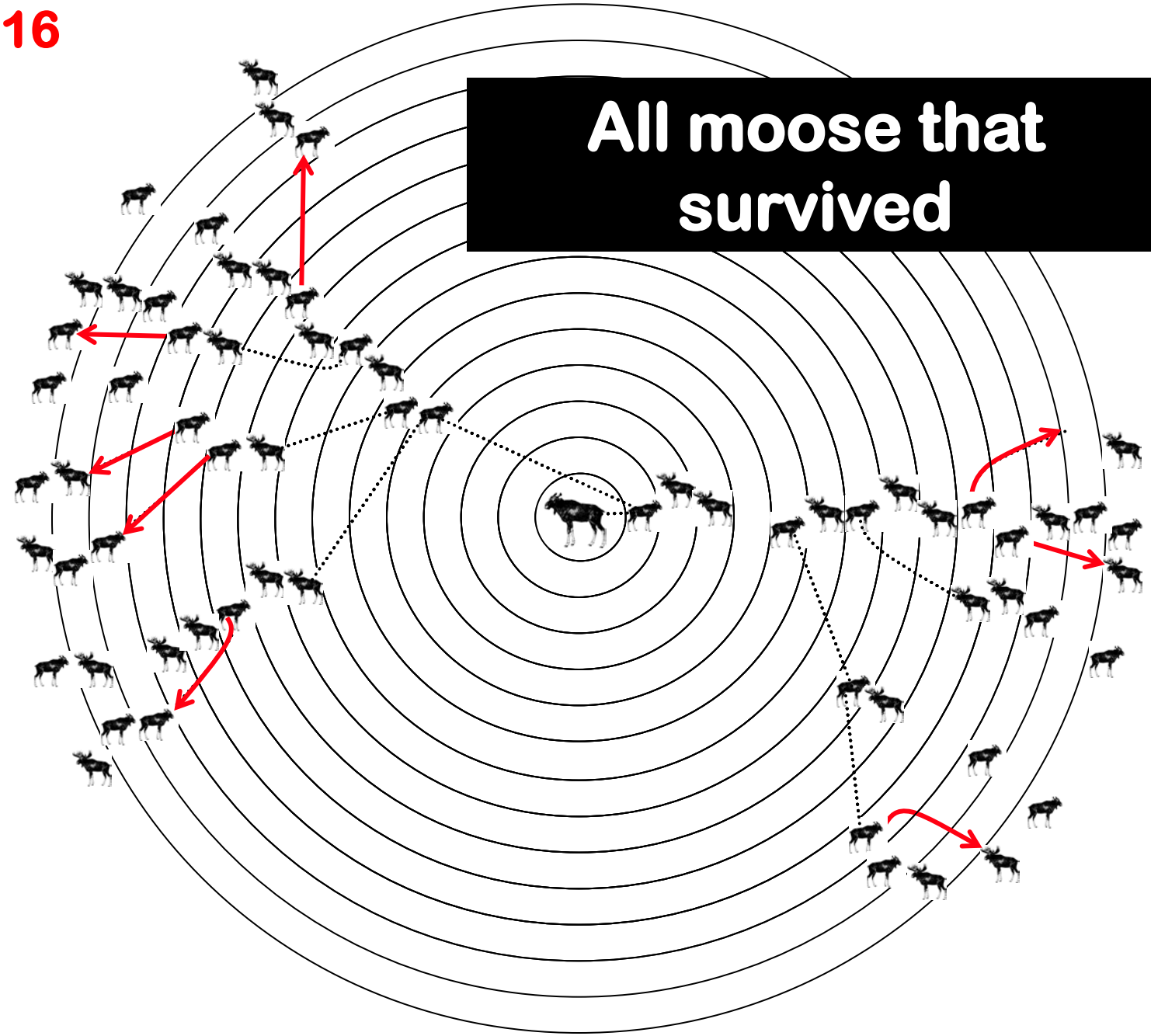
Year 15

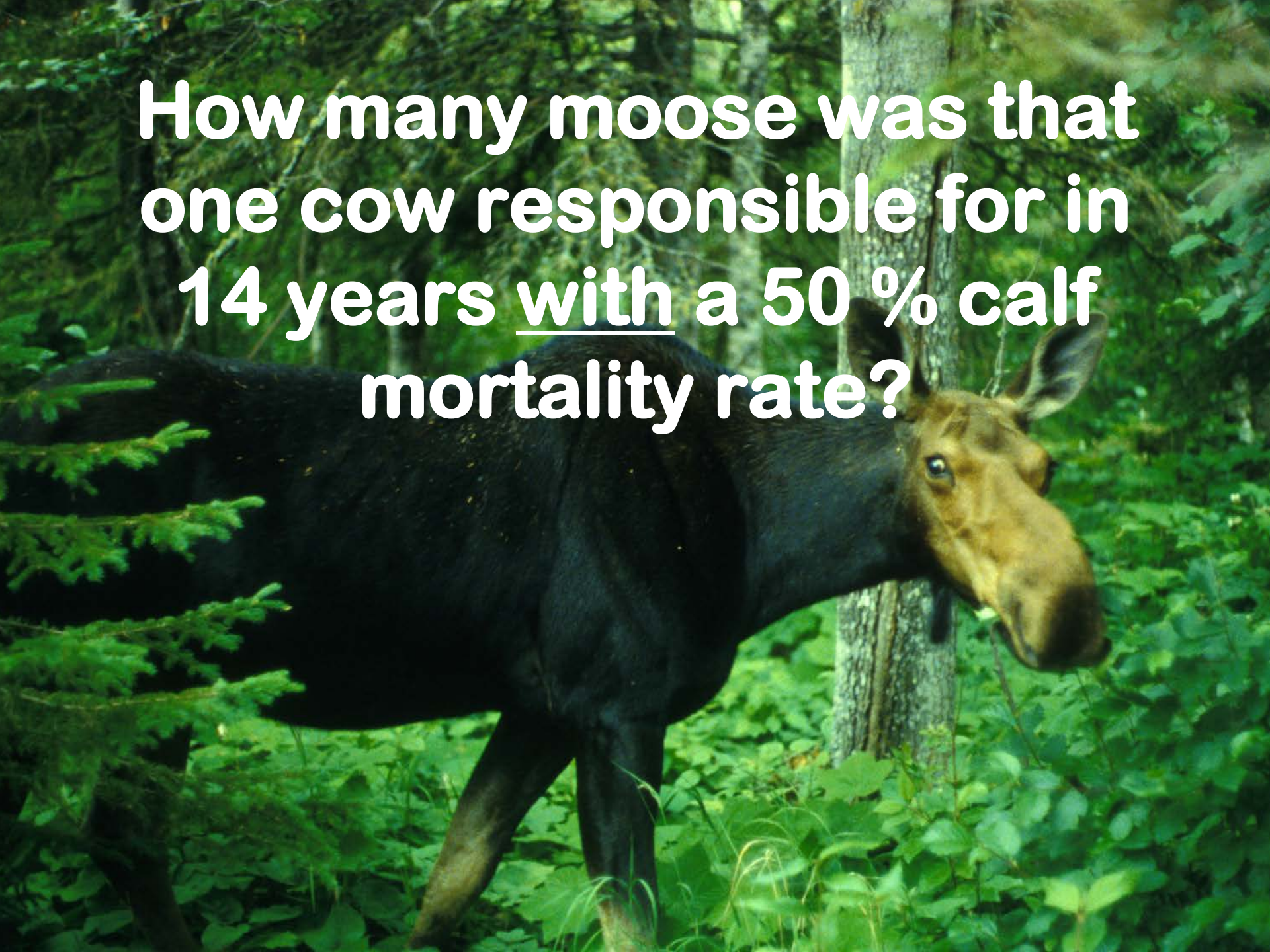


Year 16



Year 16

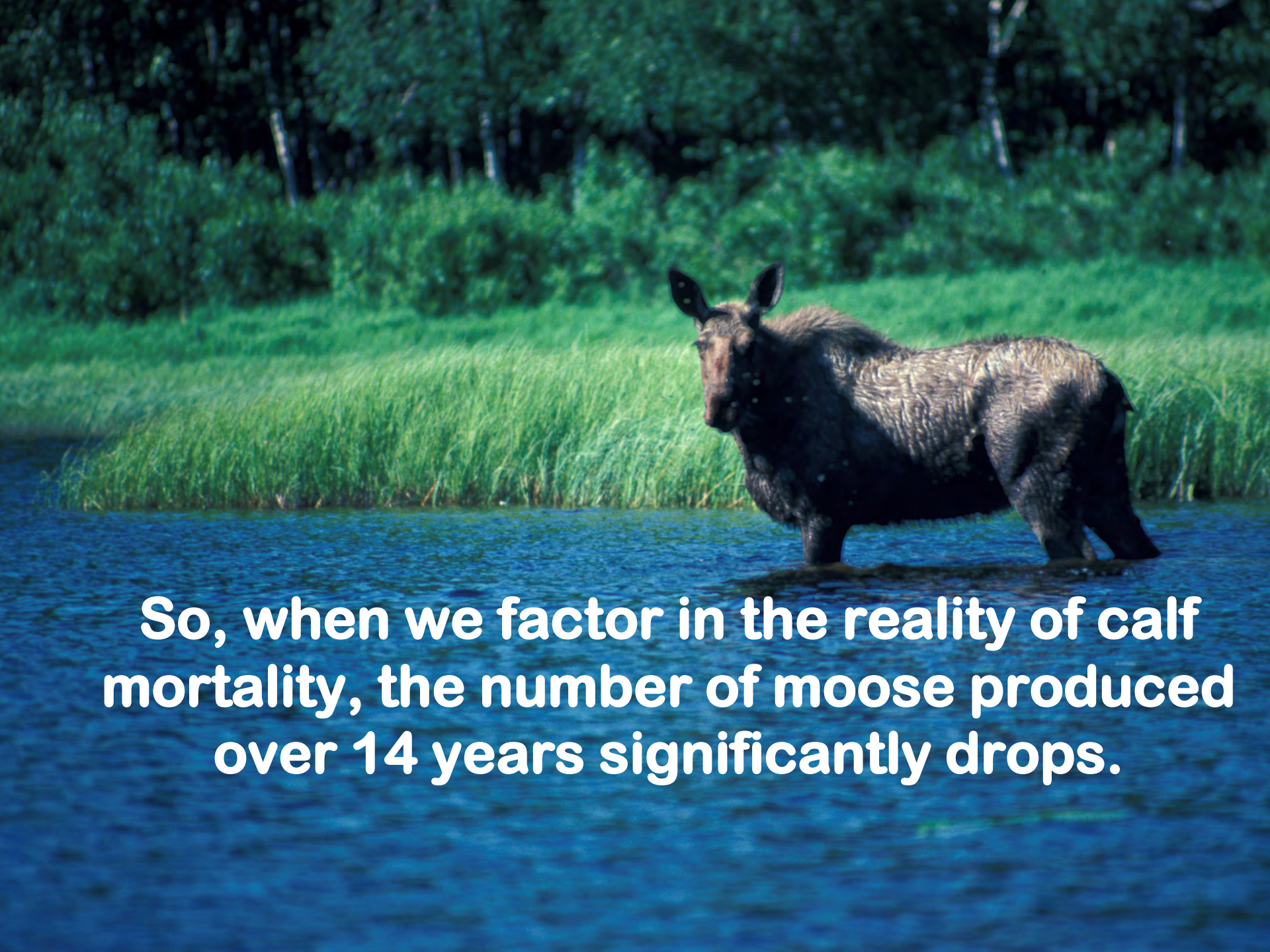


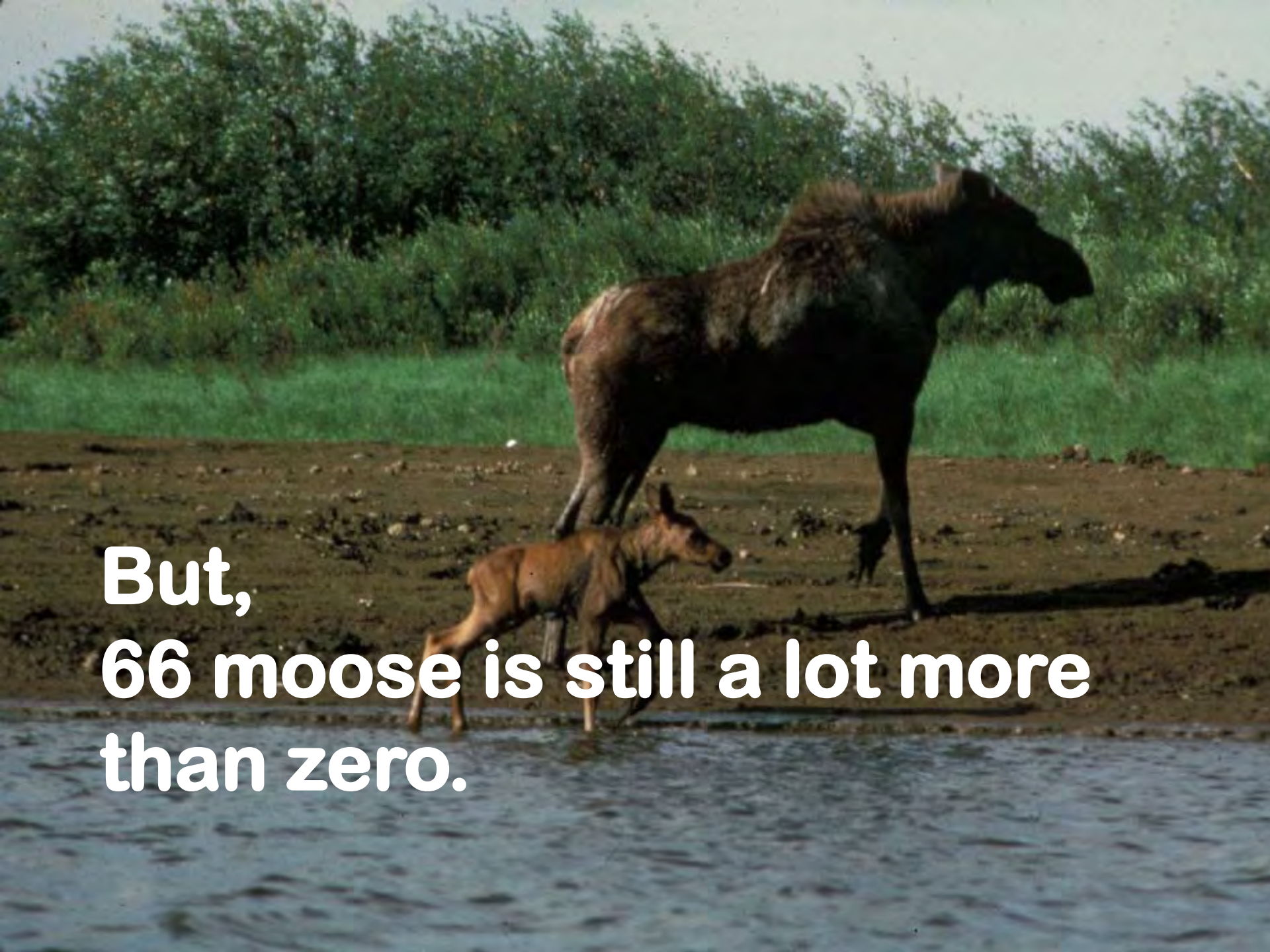

How many moose was that one cow responsible for in 14 years with a 50 % calf mortality rate?

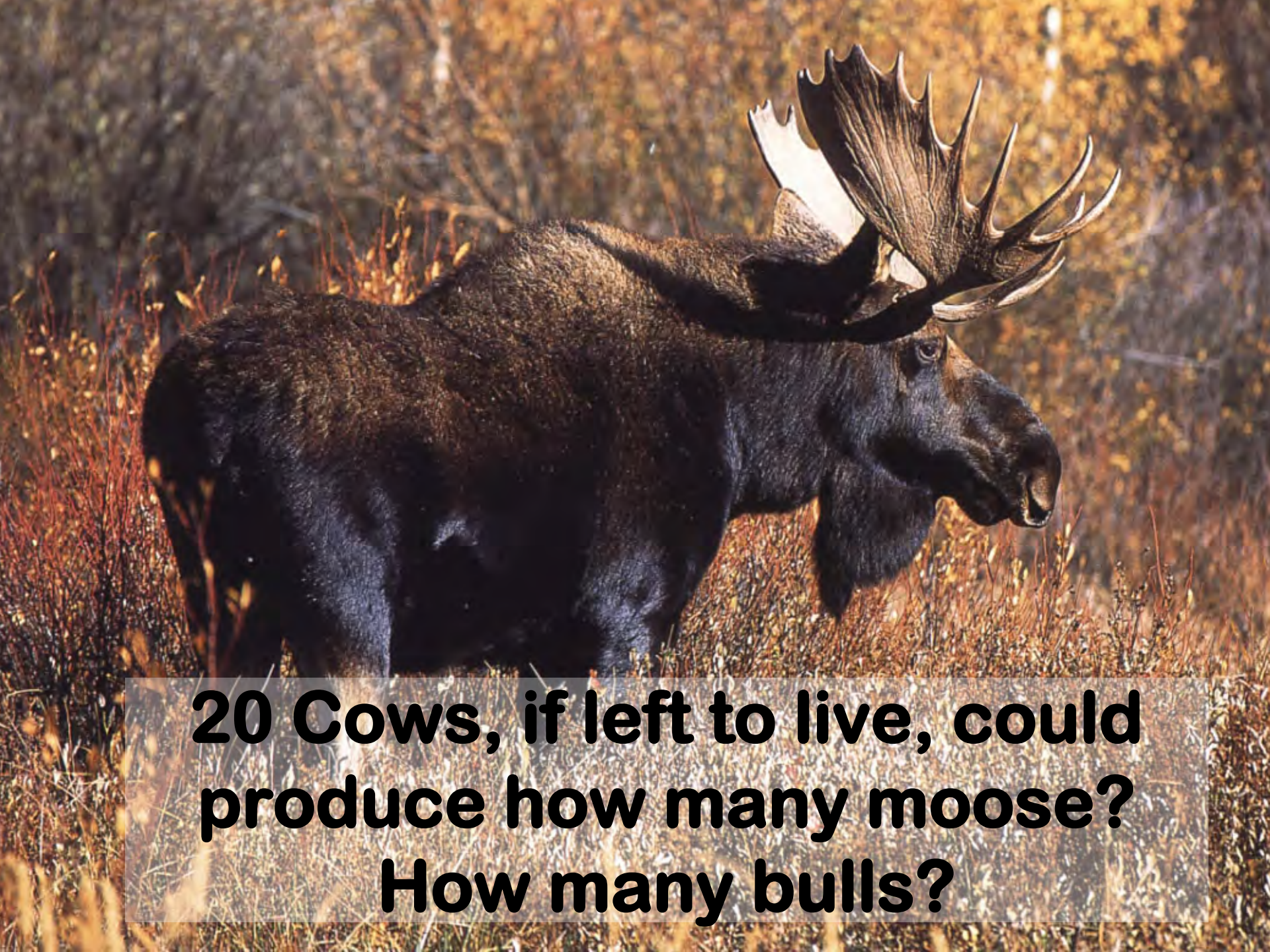
Number of moose potentially produced over 14 years from 1 cow moose and her offspring factoring 50% calf mortality


She and her offspring could
produce a total of 66 moose


of which half (or 33) are bulls!


So, when we factor in the reality of calf mortality, the number of moose produced over 14 years significantly drops.


But,
66 moose is still a lot more
than zero.


20 Cows, if left to live, could produce how many moose? How many bulls?


What do you think?