

A photograph of a moose with large, velvet-covered antlers standing in a forest. The ground is covered with fallen leaves in shades of orange and yellow, suggesting an autumn setting. The background consists of dense evergreen trees.

**HOW FAST CAN A
MOOSE**

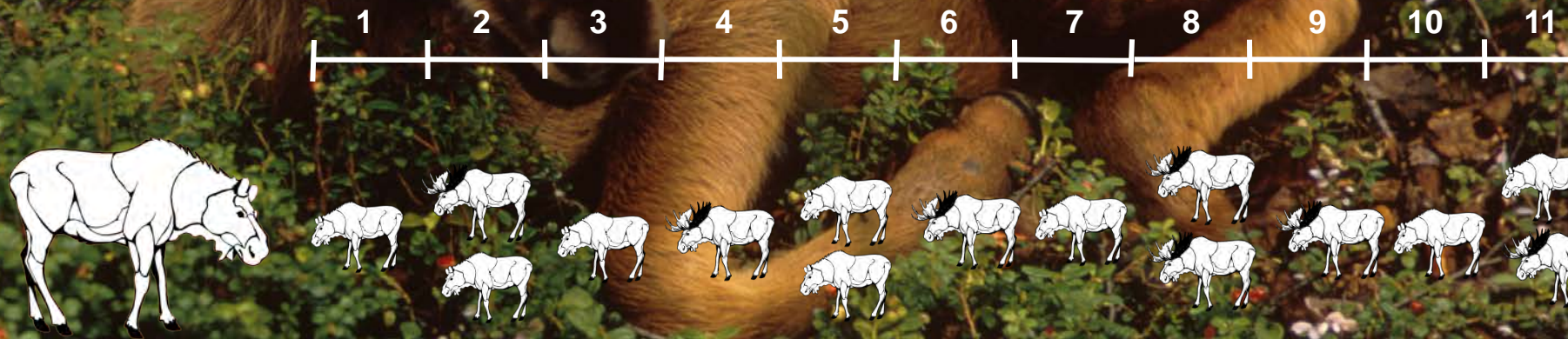
**POPULATION
GROW?**

A photograph of a moose standing in a snowy forest. The moose is dark brown and is looking towards the left. The background consists of many thin, light-colored tree trunks, likely birches, and some evergreen trees. The ground is covered in snow. The text is overlaid on the image.

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.





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.



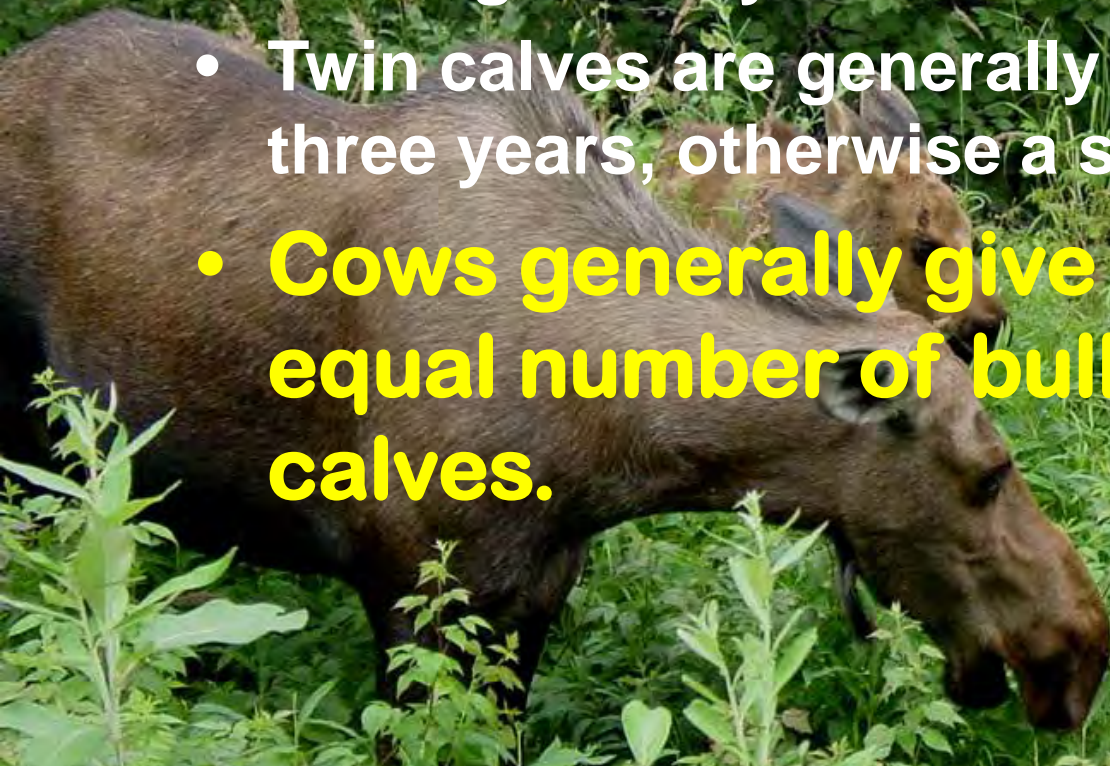
Let's follow these general biology guidelines:

- 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.**



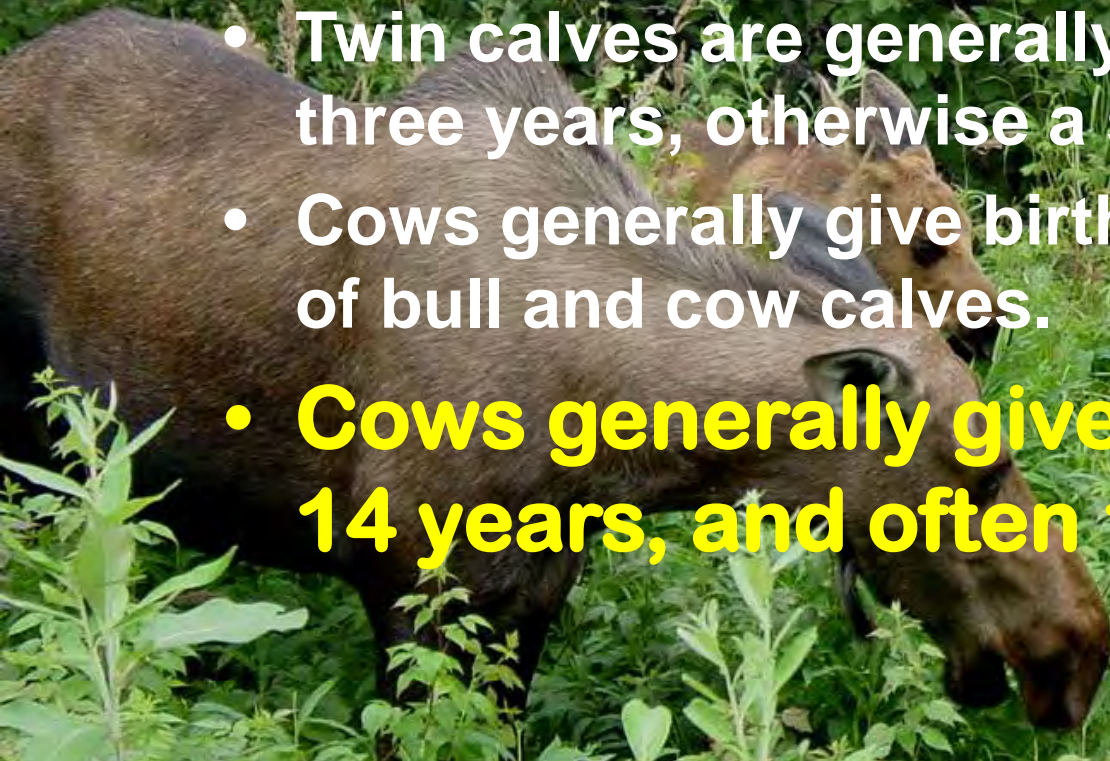
Let's follow these general biology guidelines:

- 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.**



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!**



A young moose calf is lying down in a field of green, low-growing vegetation. The calf has brown fur and large, upright ears. It is looking towards the camera. The background is filled with similar green plants and some small red berries.

**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.

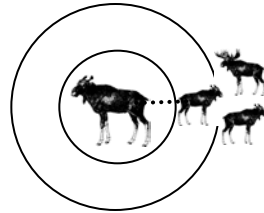
The circle is her 1st year of giving birth.



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



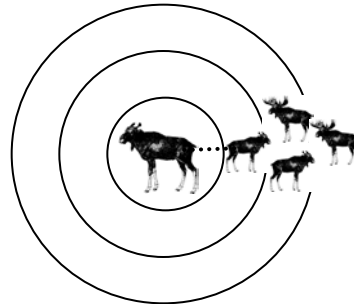
**Her 2nd year of giving birth.
She is age 4.**



**The following year she has
a single calf...**



Her 3rd year of giving birth. Age 5

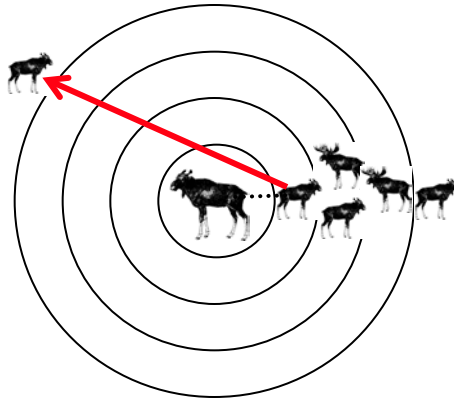


The cow is now 6 years old

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



Her 4th year of giving birth, Age 6.

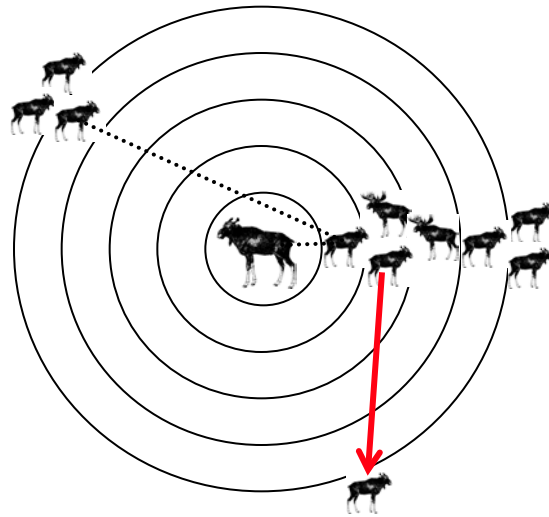


**When the cow is 7 years old,
her 5th year of giving birth:**

- **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**



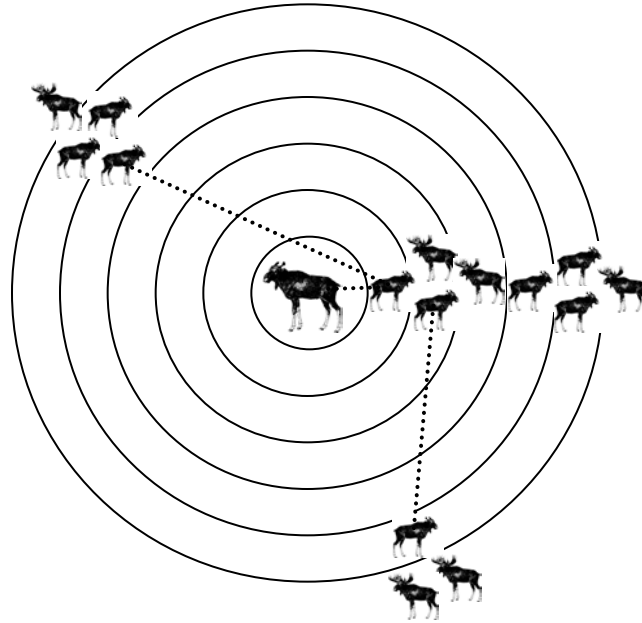
Her 5th year of giving birth, age 7.



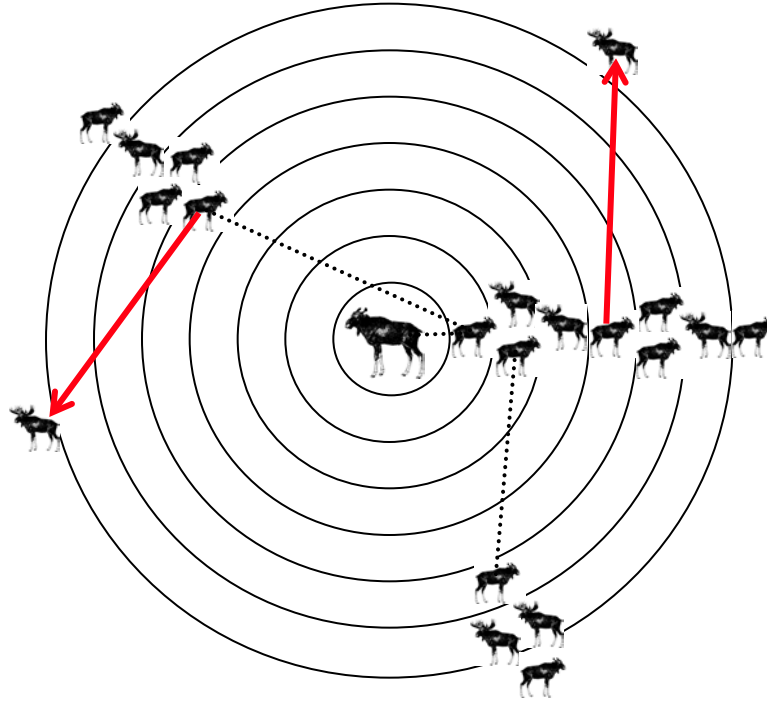
**And so on until she
becomes 16 years old...**



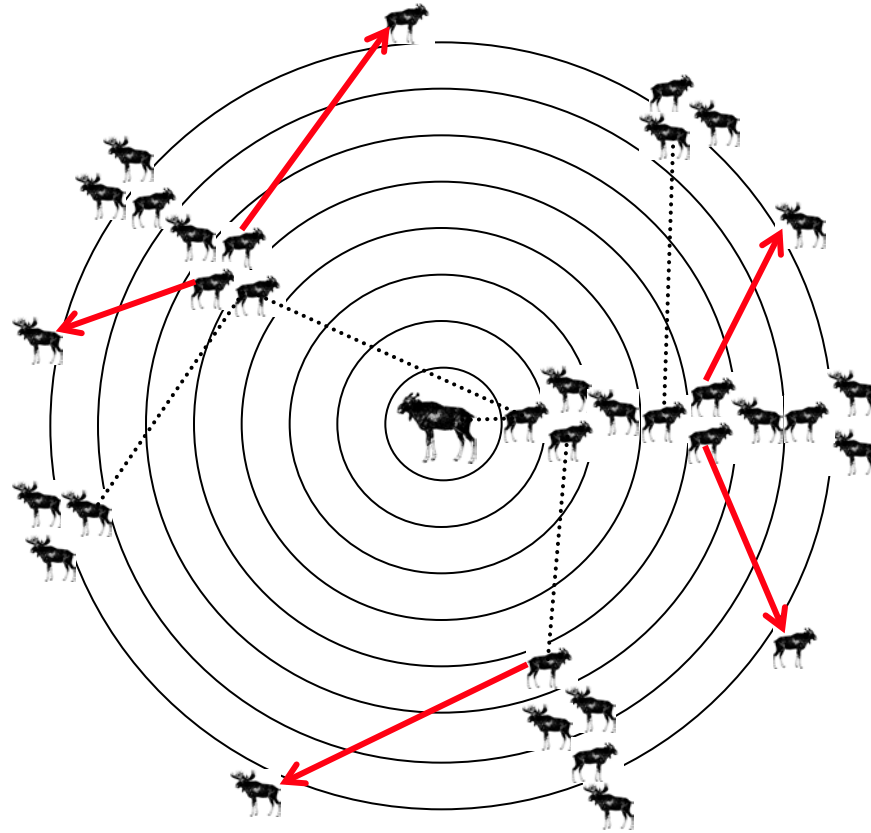
Her 6th year of giving birth, Age 8.



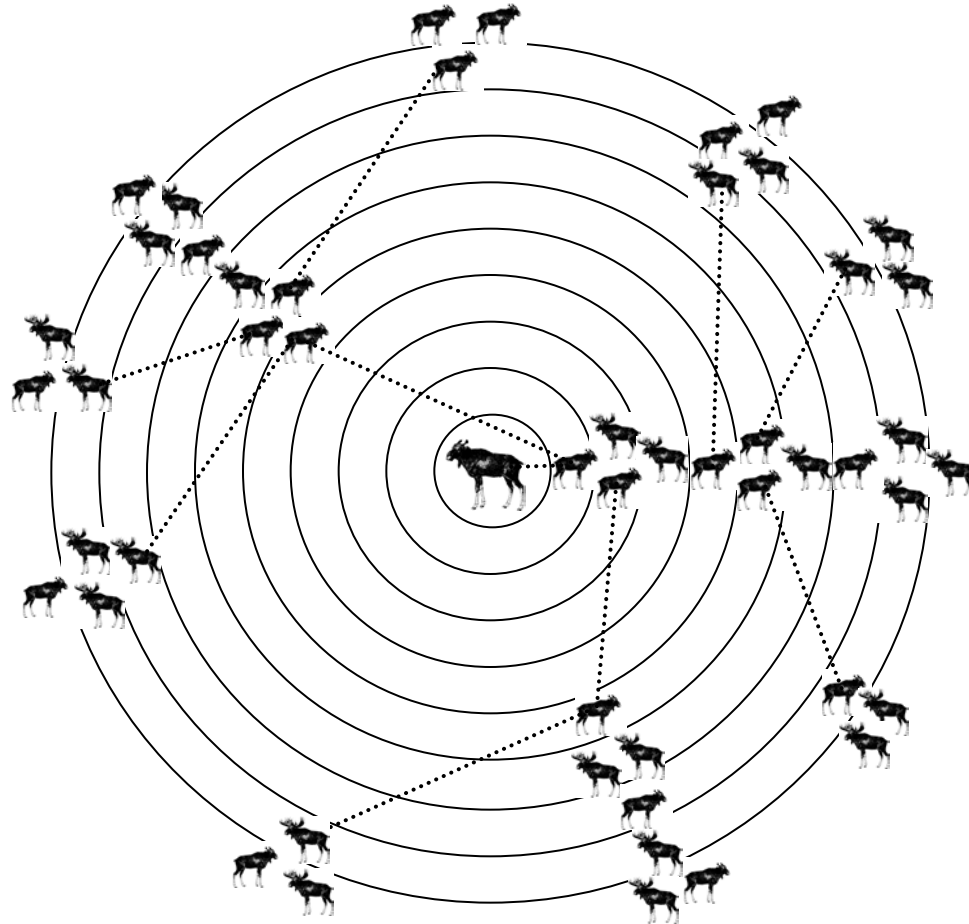
Age 9



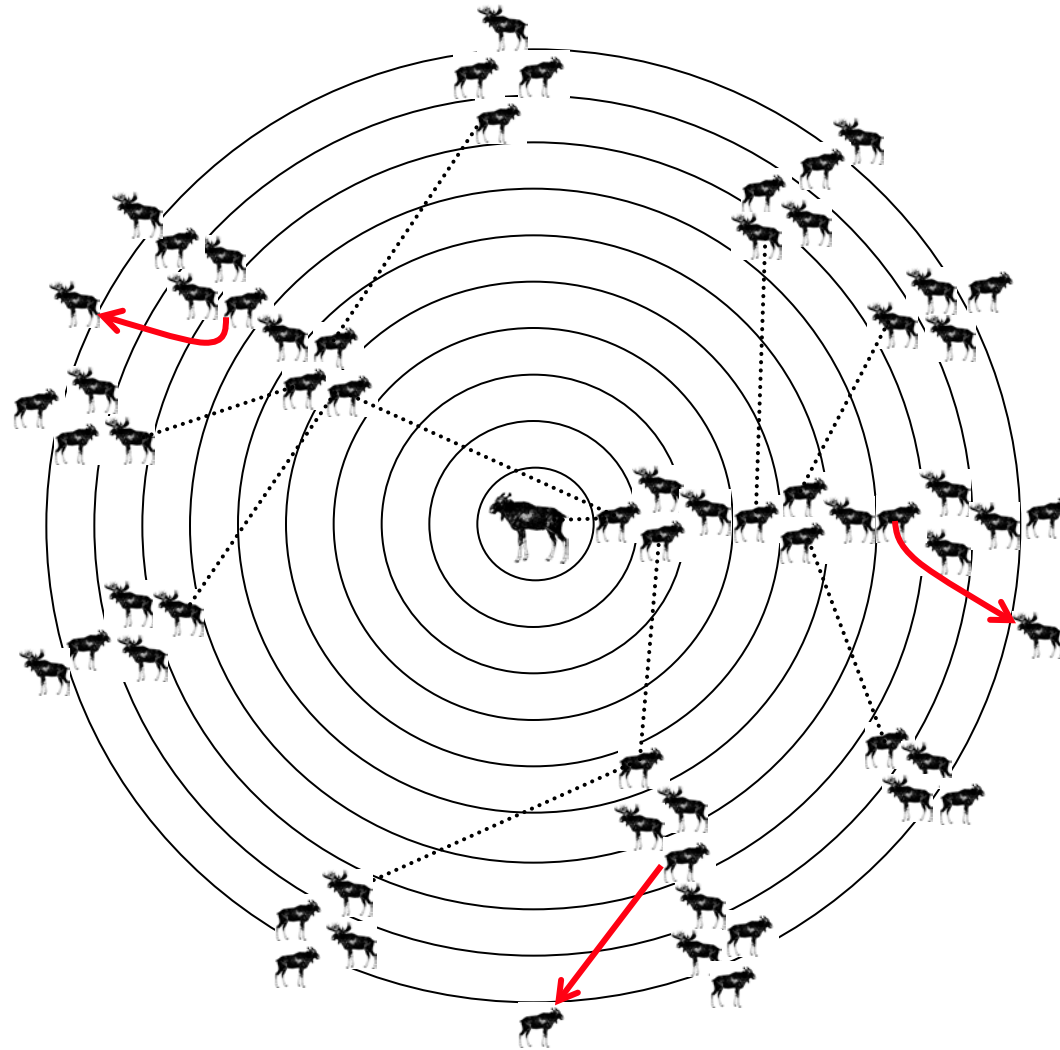
Age 10



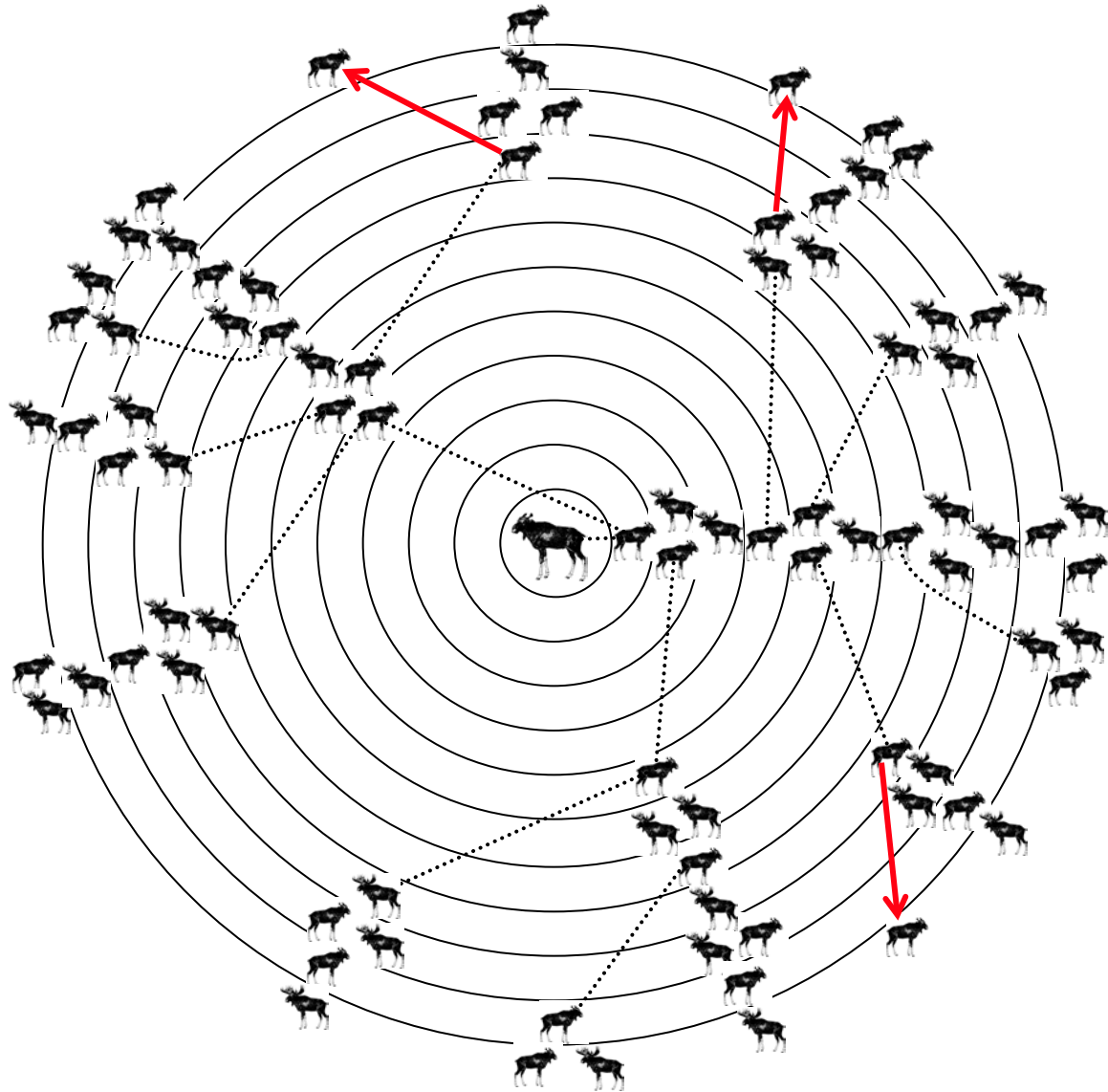
Age 11



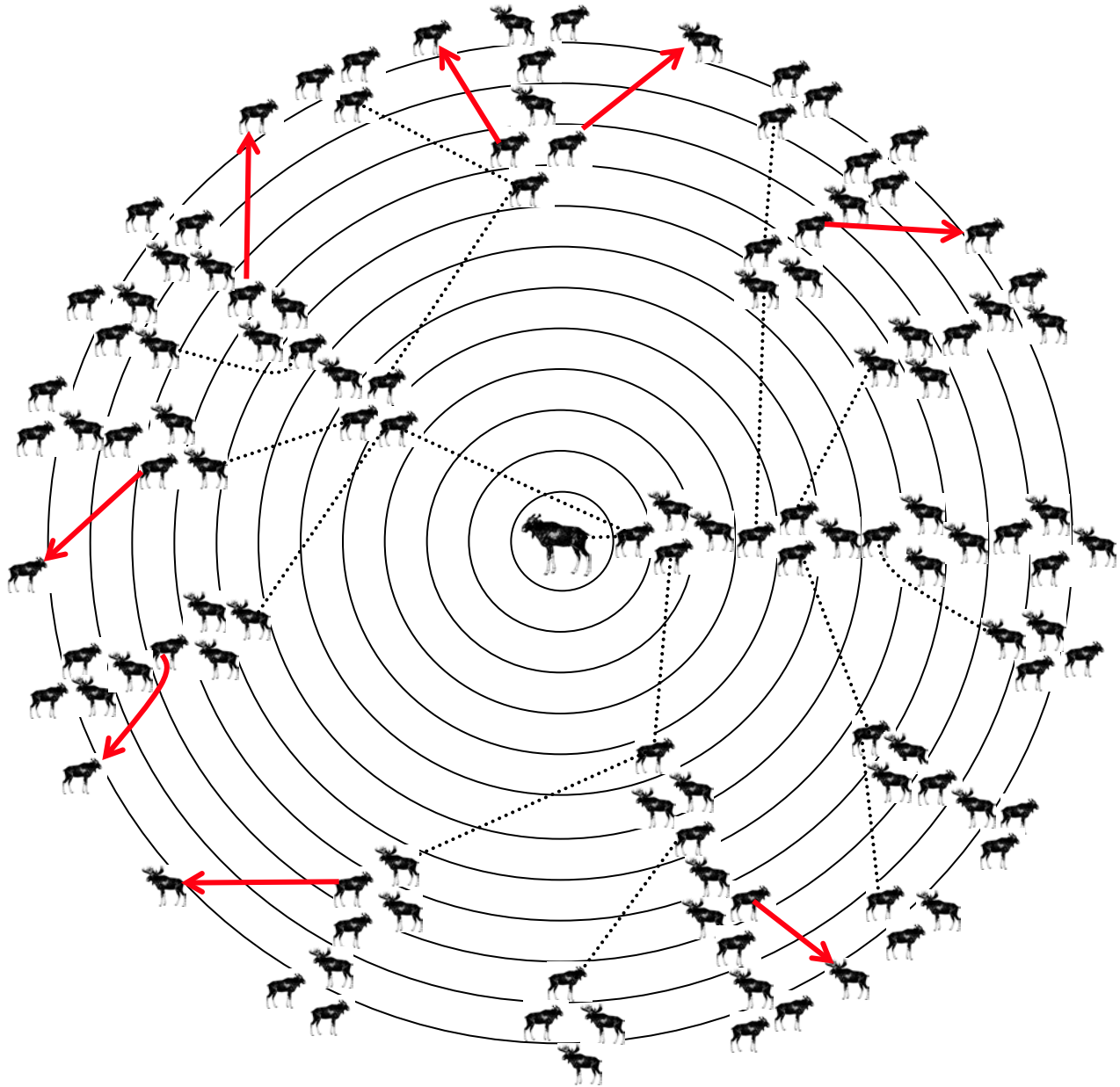
Year 12



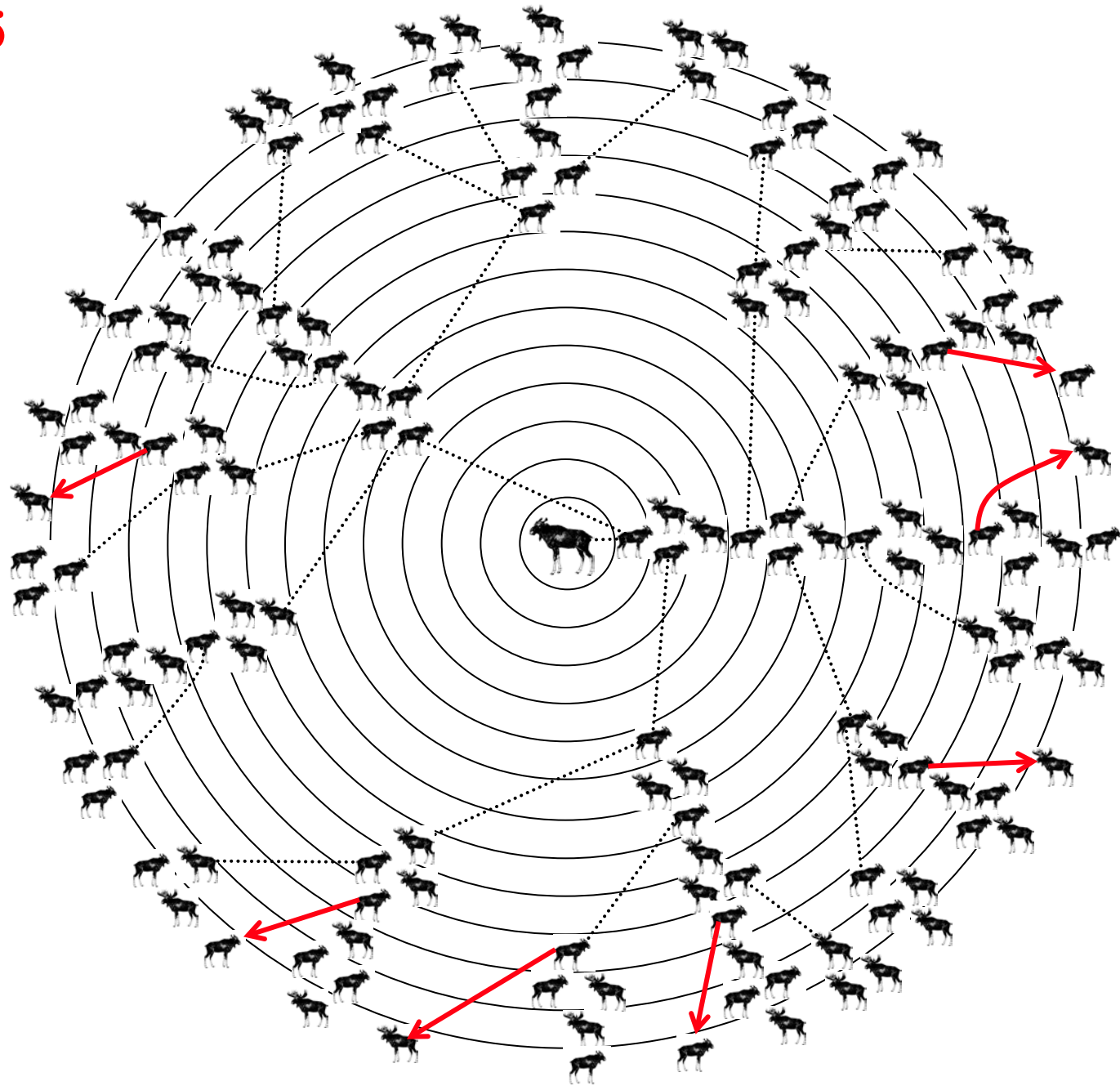
Year 13



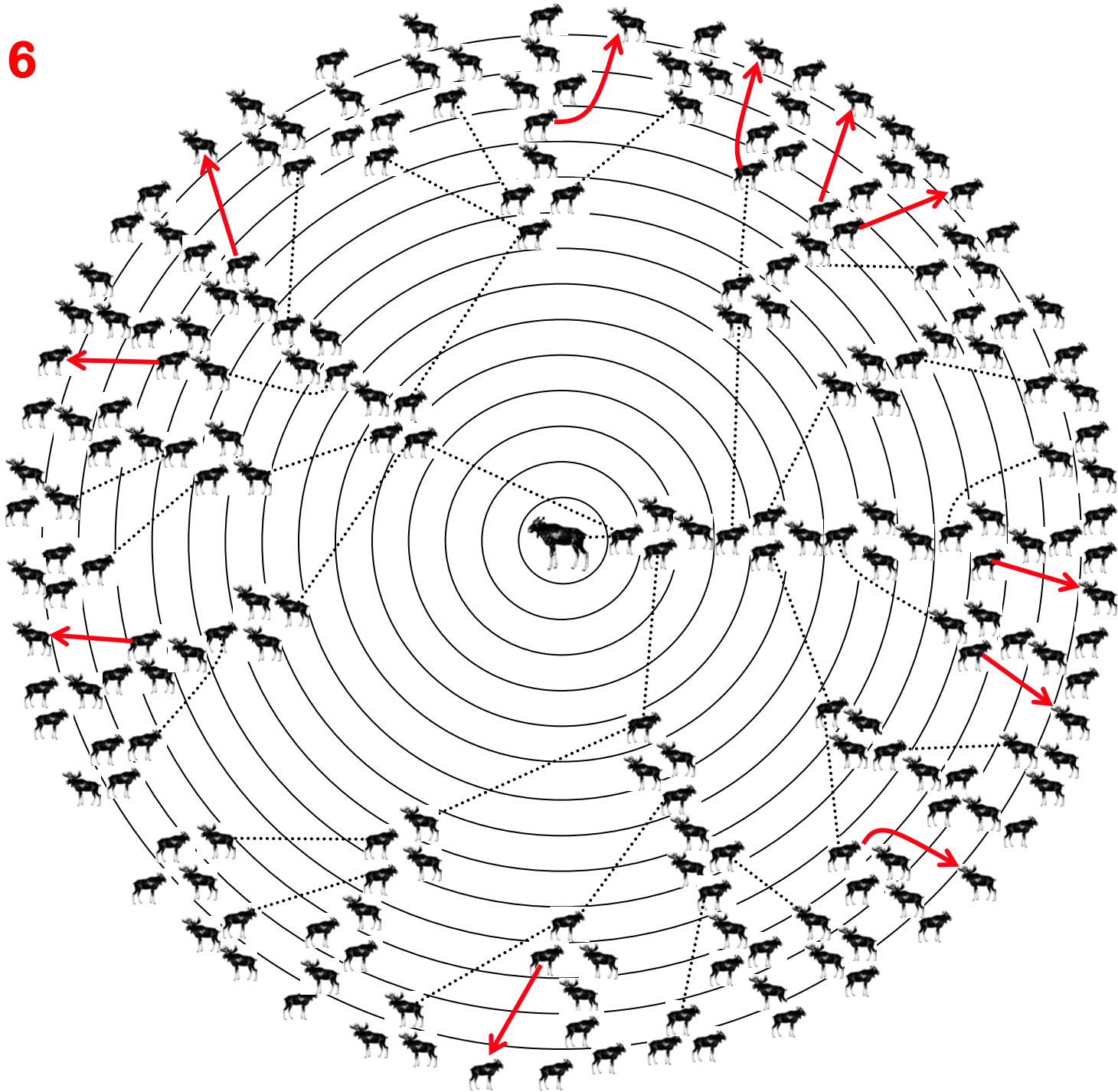
Age 14



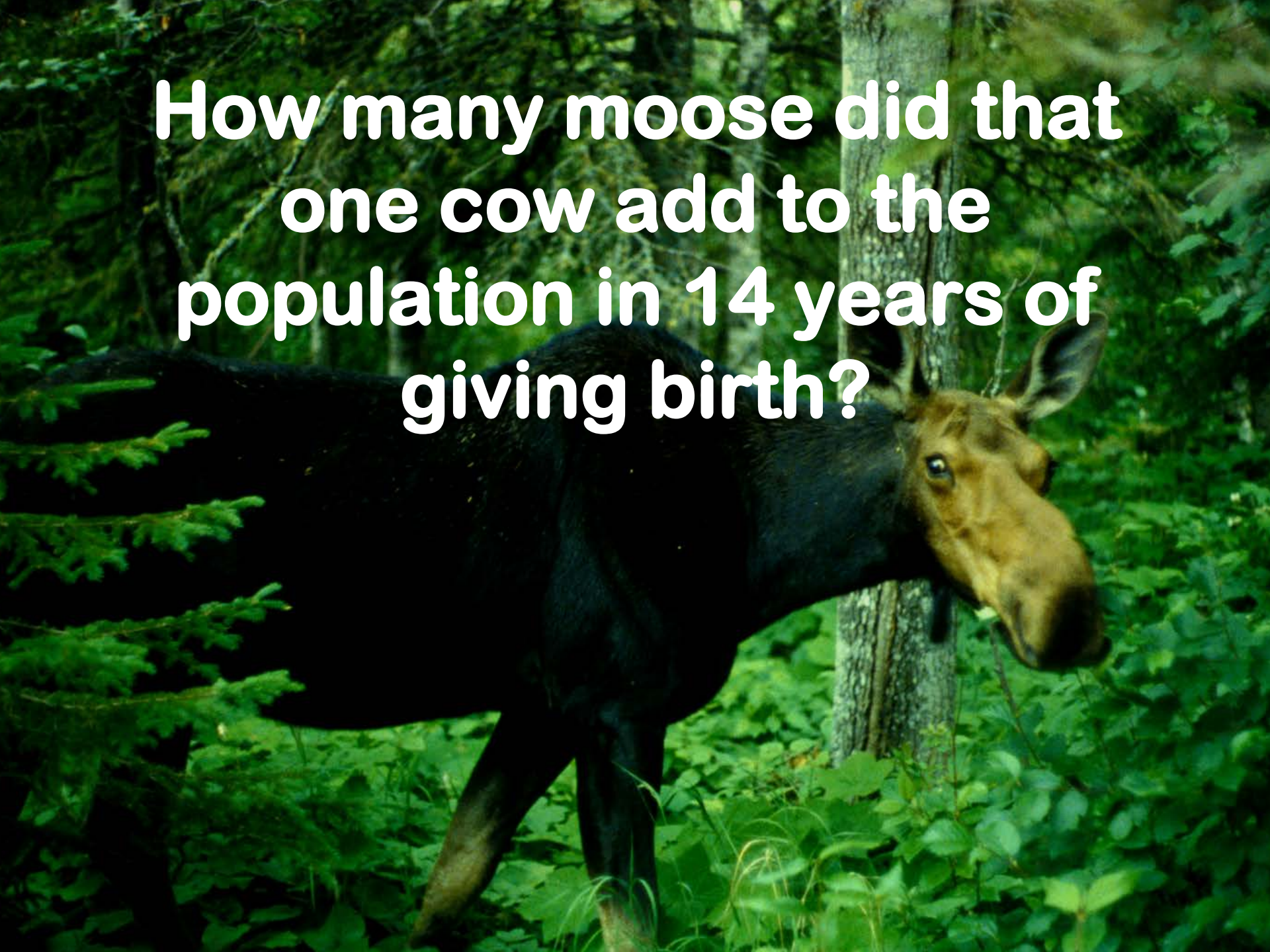
Age 15



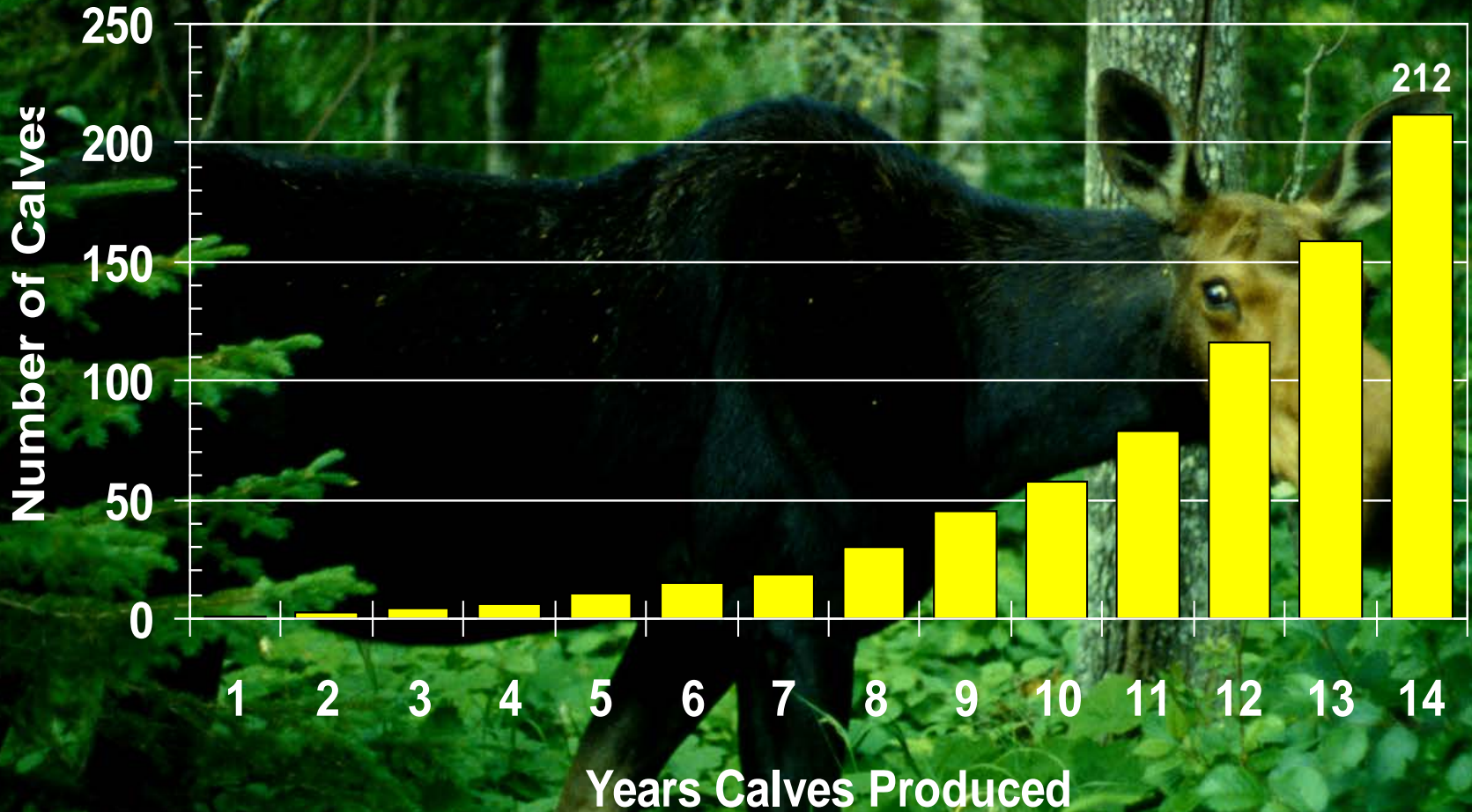
Age 16



**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!**

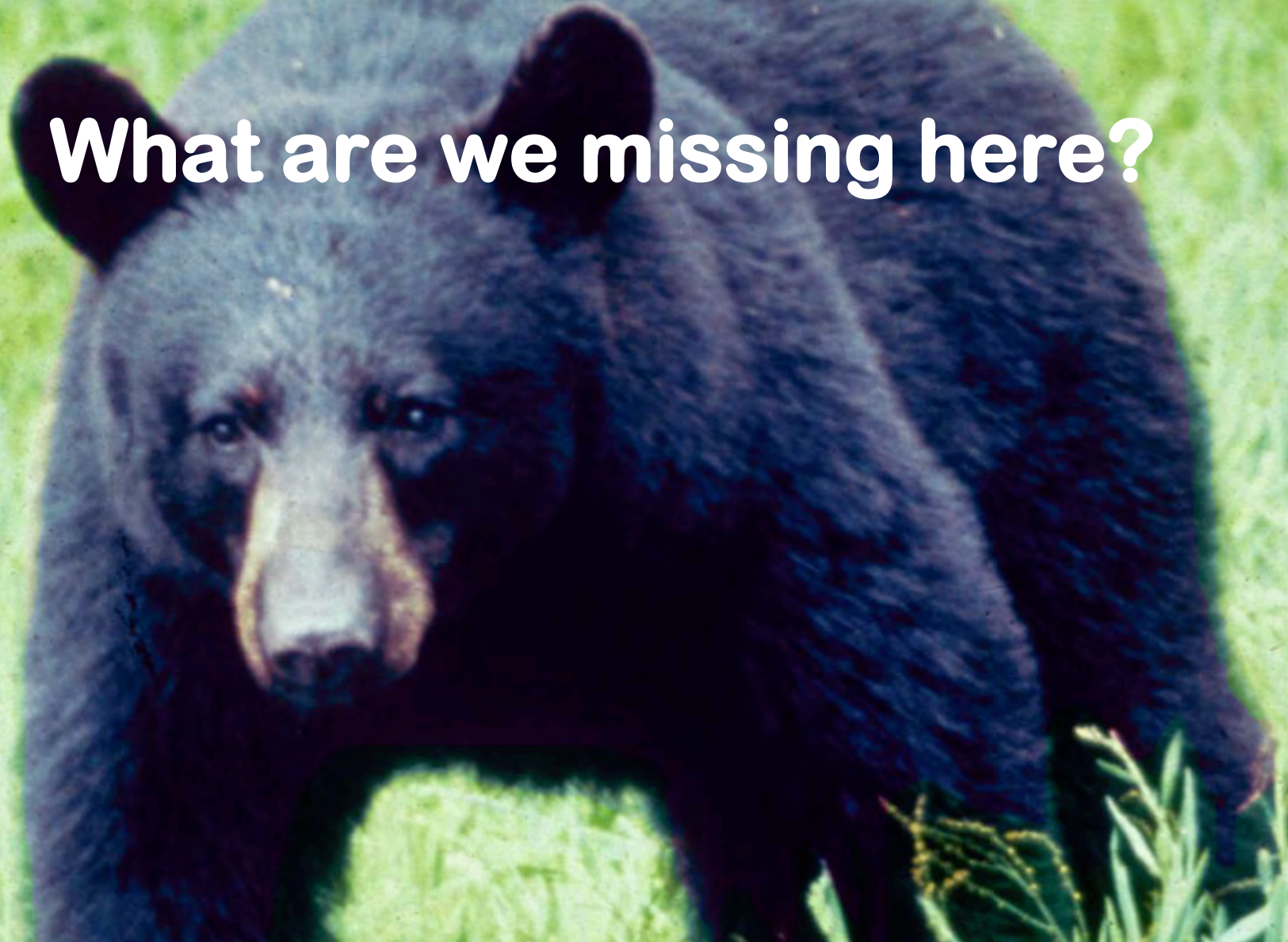


**And about half of those
would be bulls.**



**But is this the way a moose
population really grows?**

What are we missing here?



A photograph of a dead animal, possibly a pronghorn, lying on its side on a bed of dry, brown grass. The animal's body is dark brown and appears to be dead. A bright blue tag is attached to its neck, and a white tag is attached to its leg. The background is a field of dry, brown grass.

That's right. Mortality

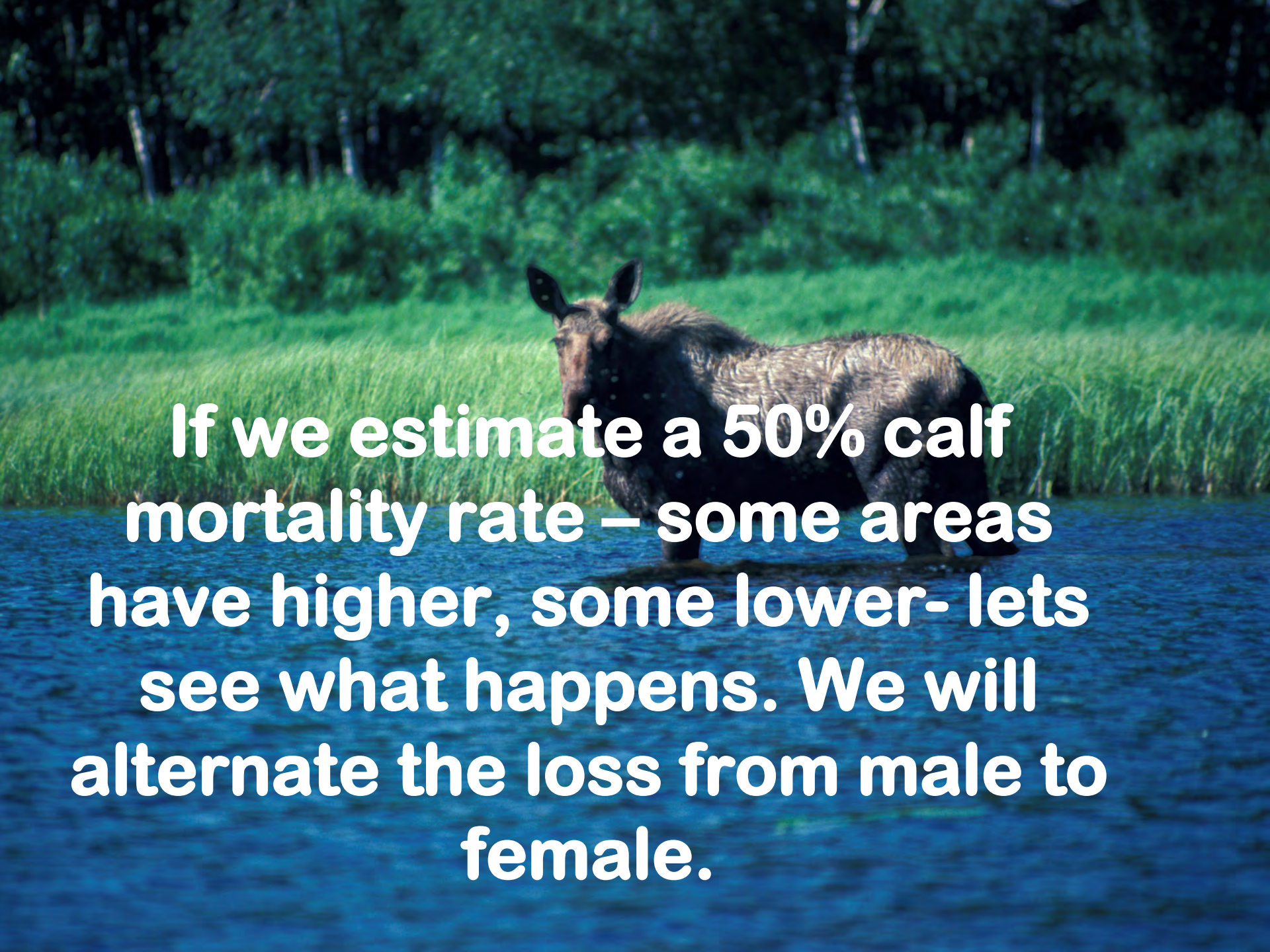
We know that all animal populations suffer mortality.

What are some causes of mortality?

- **Predation**
- **Disease**



- **Starvation**
- **Accidents**

A photograph of a moose standing in a body of water, likely a lake or river. The moose is the central focus, facing left. The water is a deep blue color. In the background, there is a dense forest of green trees and bushes. The text is overlaid on the image in a large, white, sans-serif font.

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...**



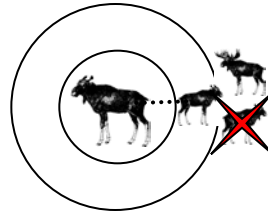
Year 3



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



Year 4

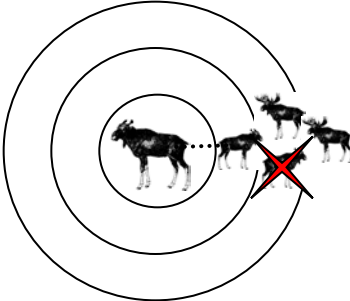


**= calf that
dies**

**The following year she has
a single calf...**



Year 5

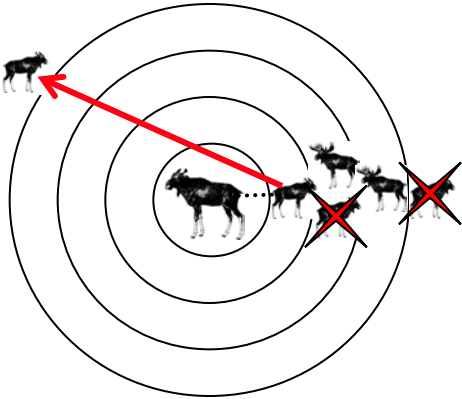


The cow is now 6 years old

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



Year 6

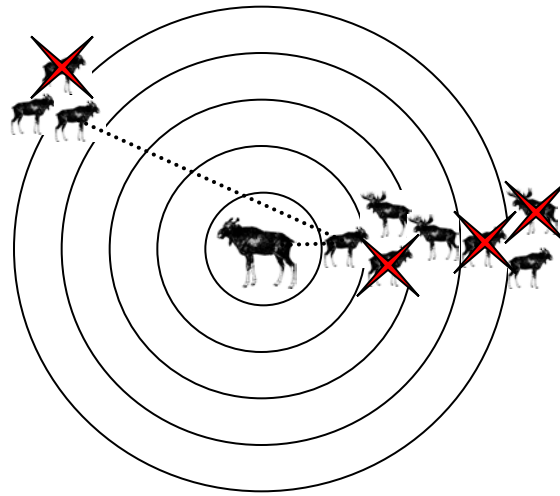


When the cow is 7 years old

- 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



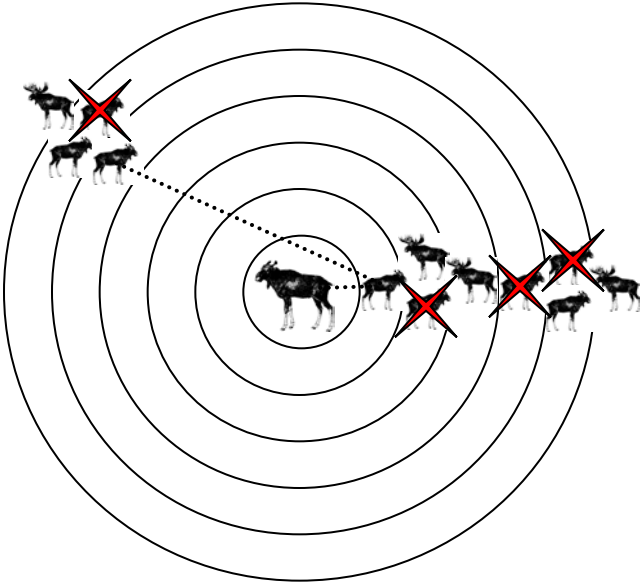
Year 7



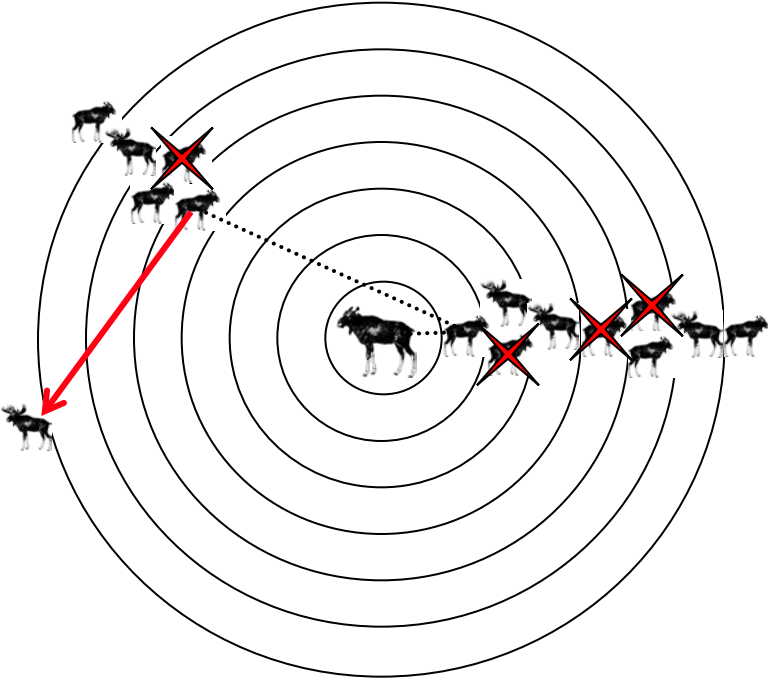
**And so on until she
becomes 16 years old...**



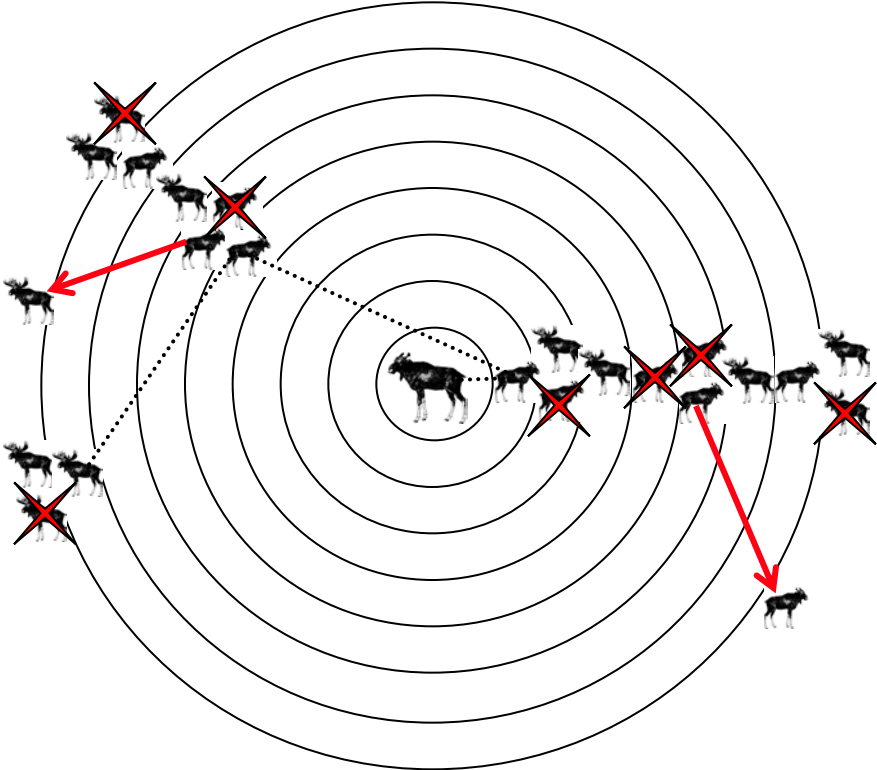
Year 8



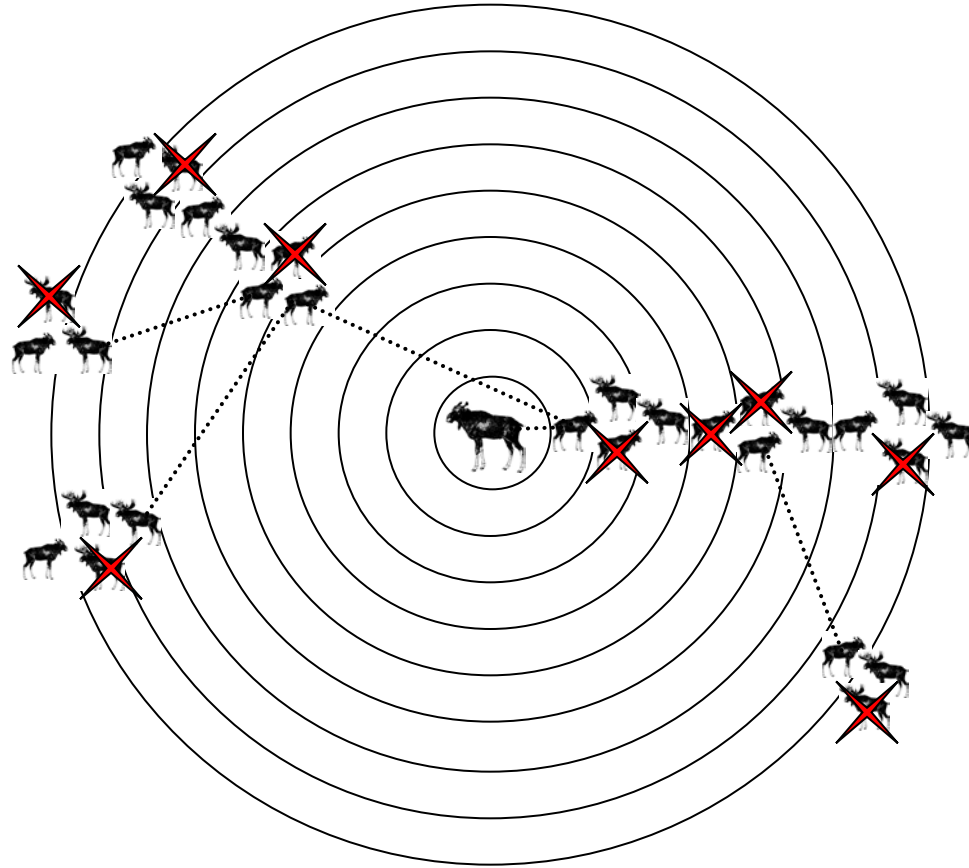
Year 9



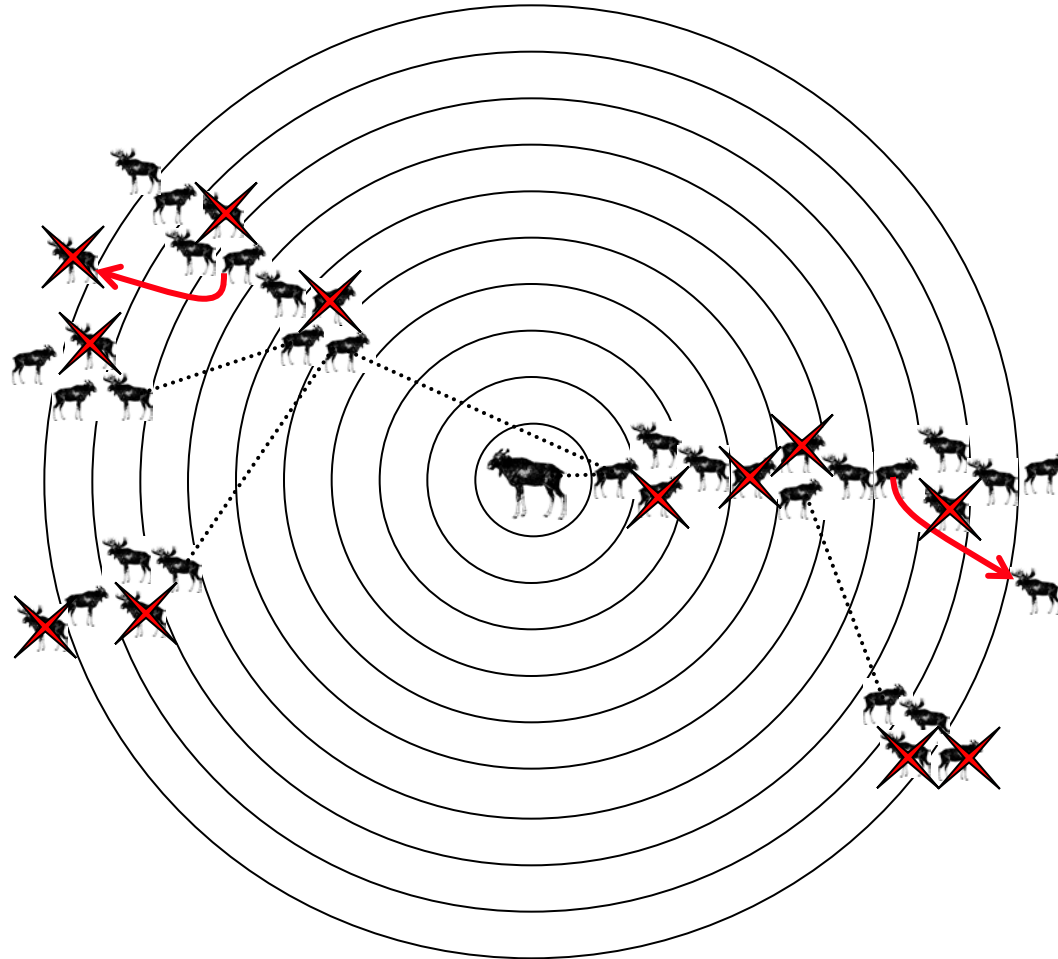
Year 10



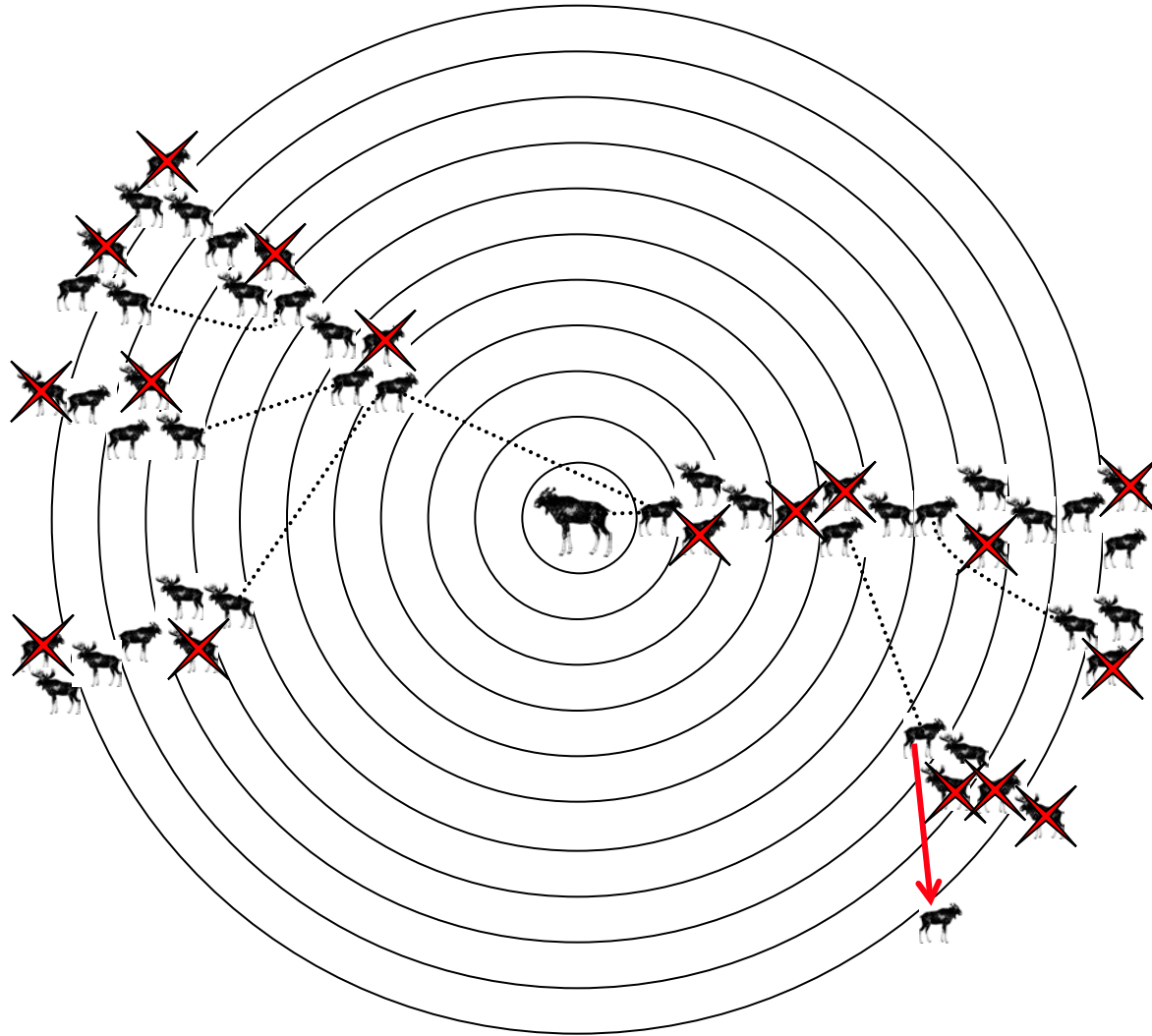
Year 11



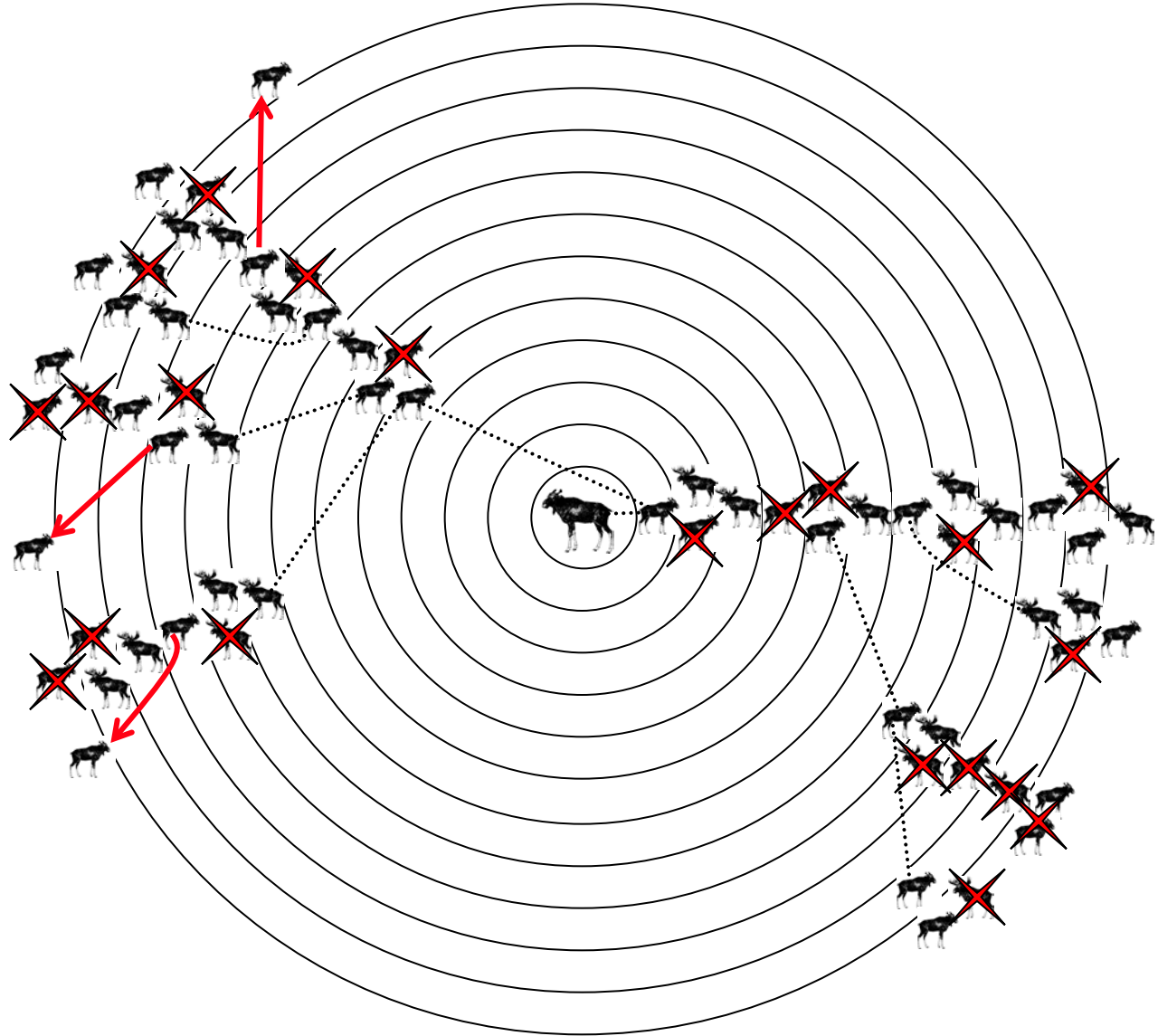
Year 12



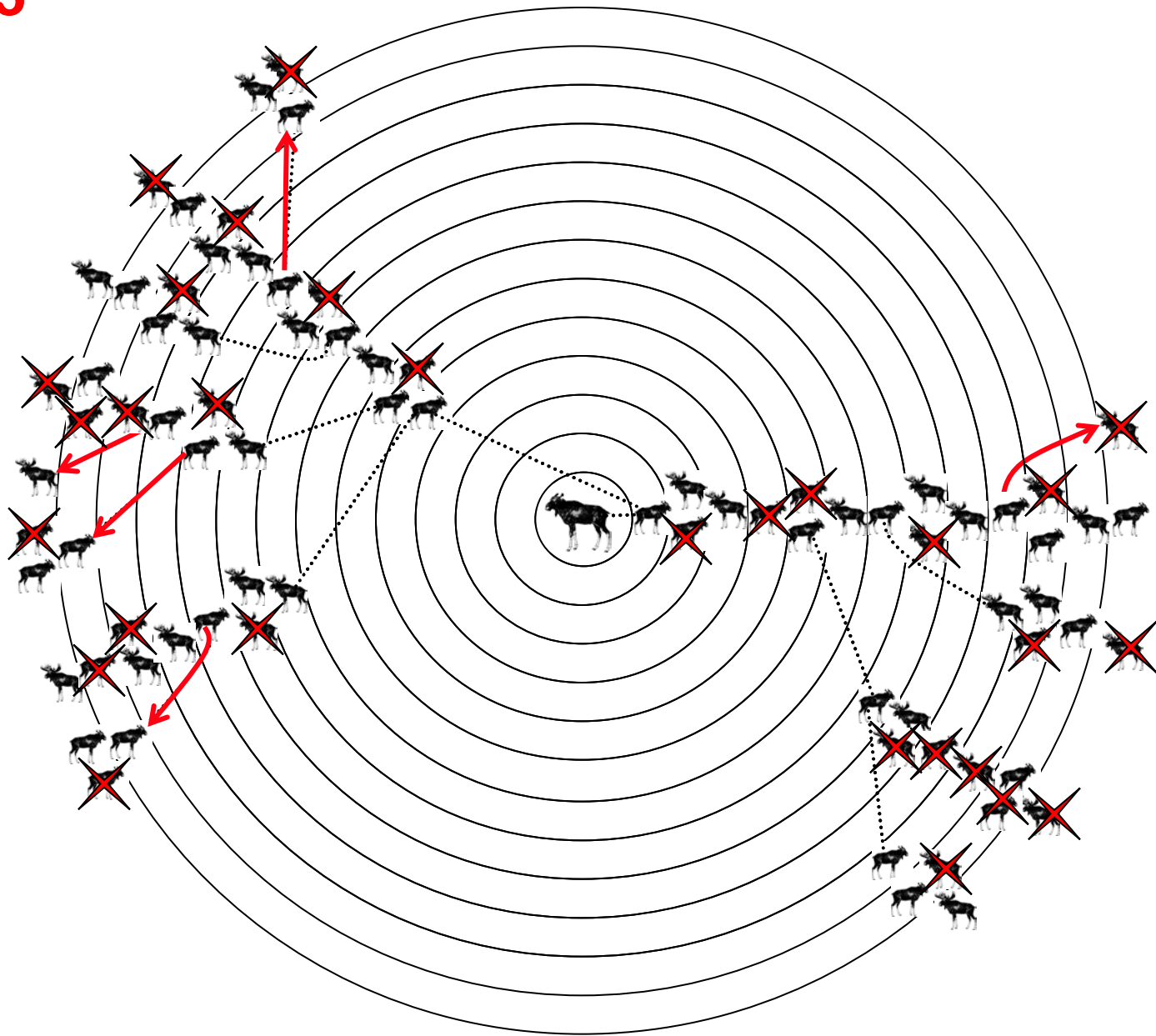
Year 13



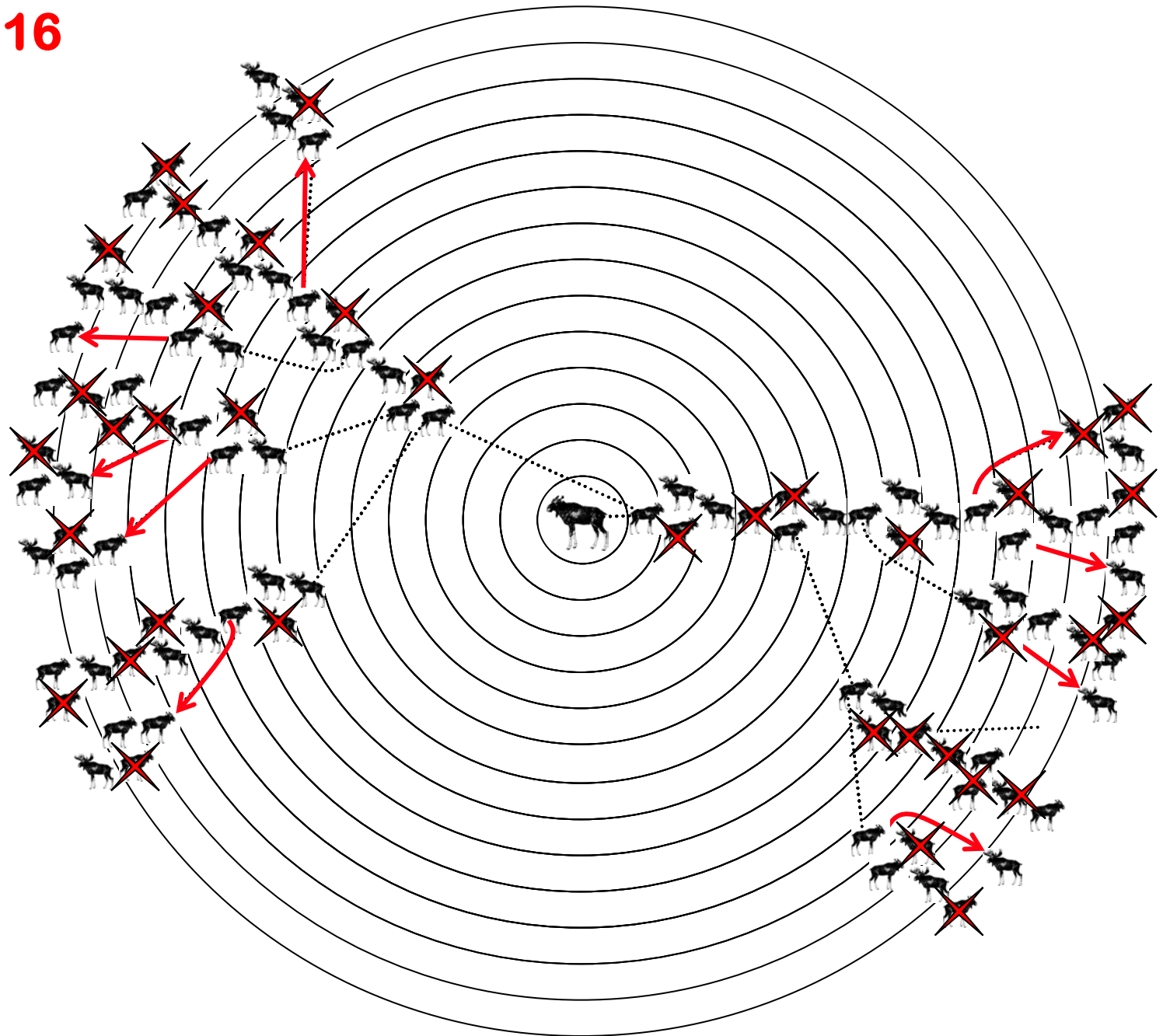
Year 14



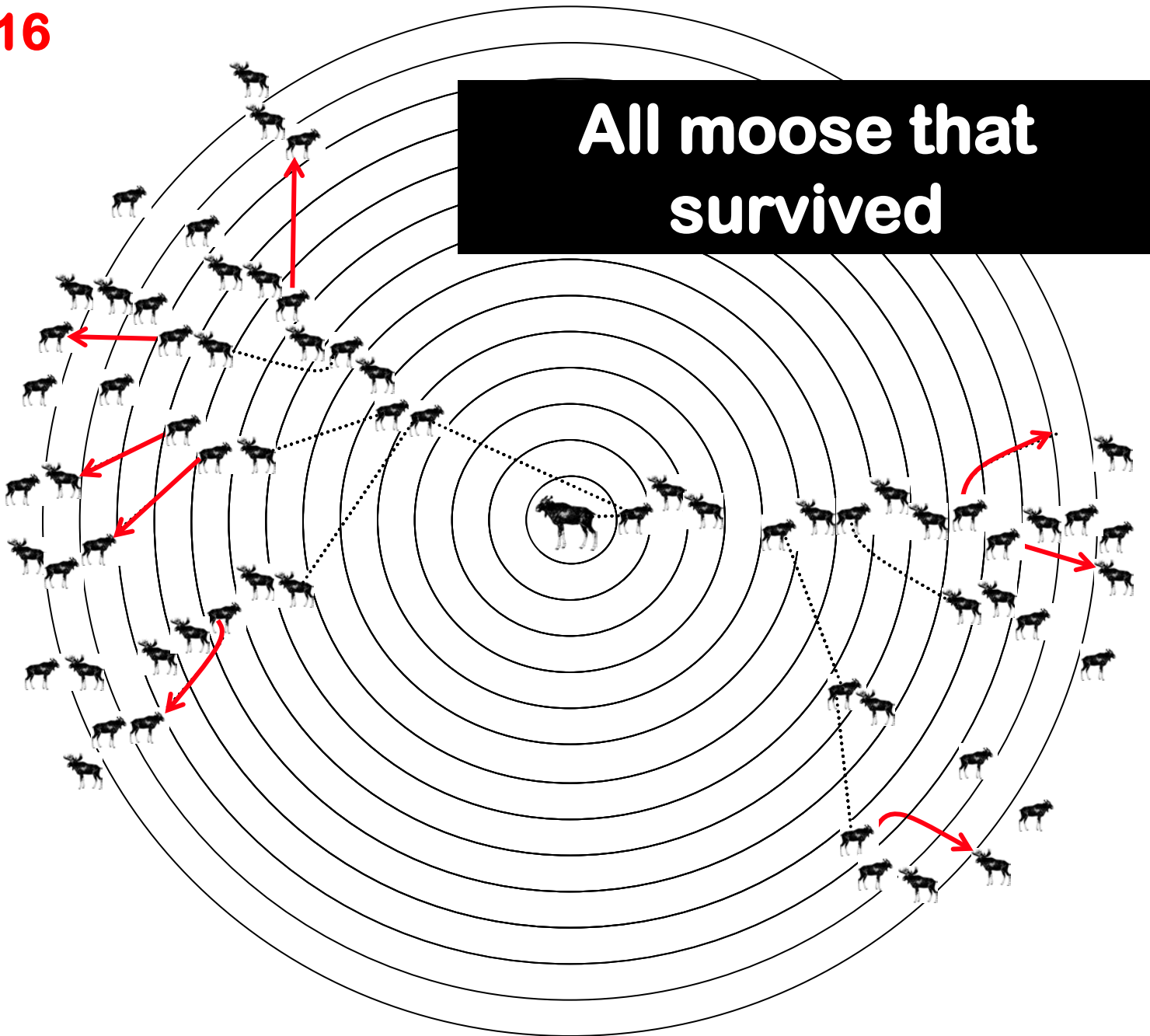
Year 15



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

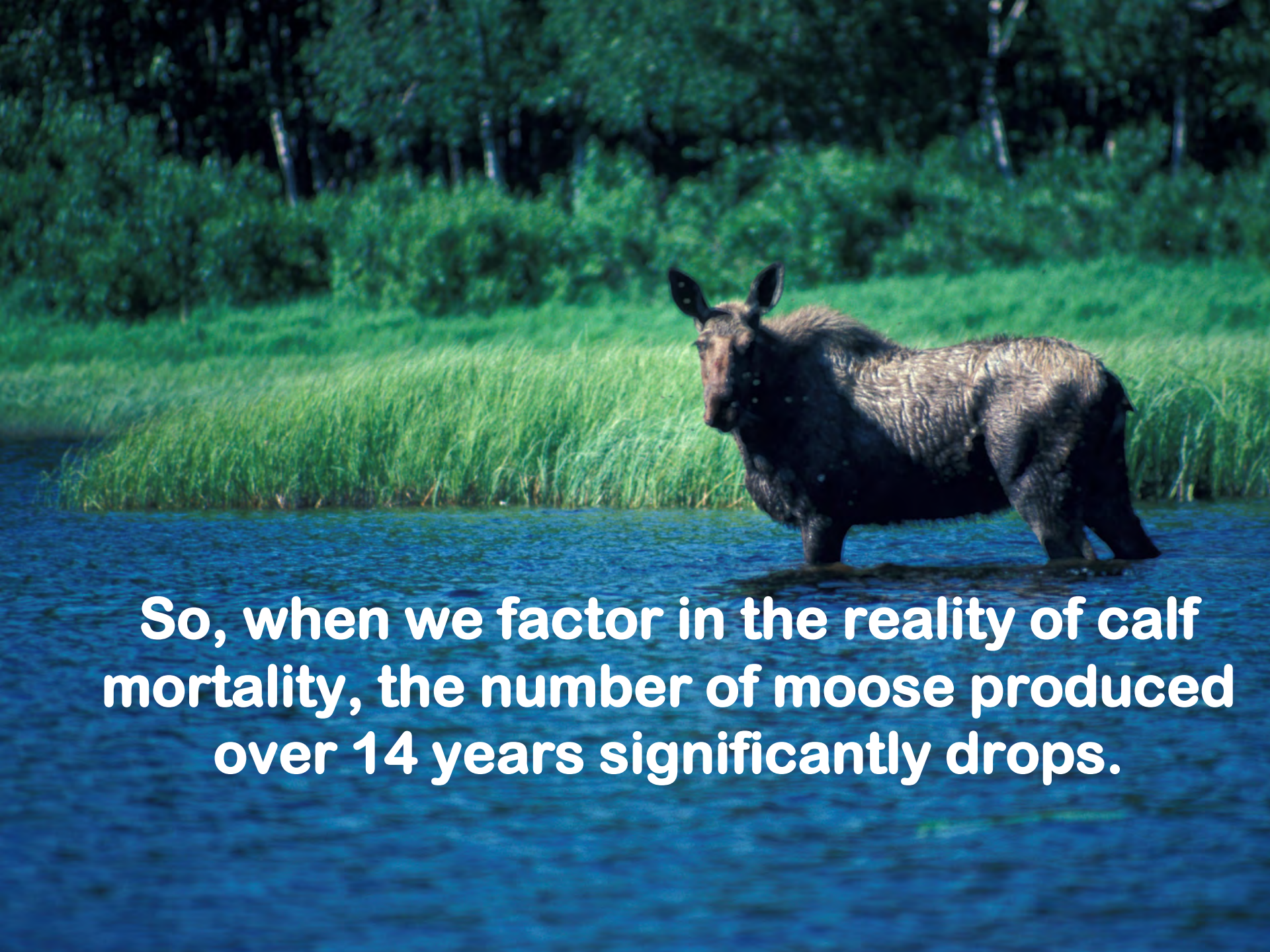


A photograph of a moose standing in a lush green forest. The moose is dark brown with a lighter brown head and neck. It is standing on a bed of green grass and foliage, with a tree trunk visible behind it. The background is filled with dense green trees and foliage.

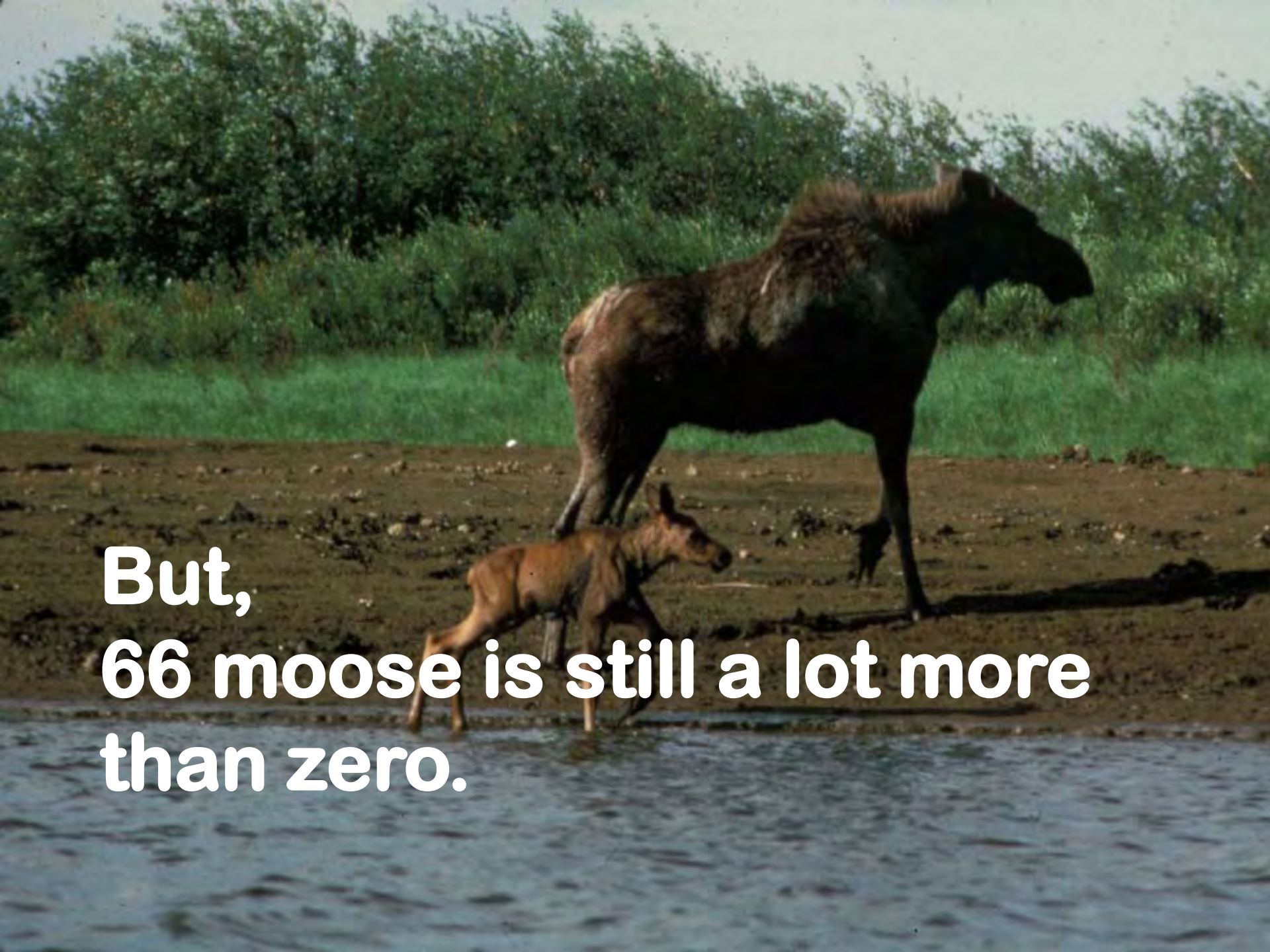
**She and her offspring could
produce a total of 66 moose**



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?