

Case Study:

Florida Scrub Jays



Review



The Lake Wales Ridge is the largest and tallest of Florida's sand ridges. It extends about 150 miles from Orlando to Venus, Florida—where Archbold Biological Station is located!

When sea levels had been higher throughout history, the sand ridges were the only part of Florida above the ocean, which formed a series of islands. This event isolated species and led to the formation of one of Florida's oldest habitats—the Scrub!

The Lake Wales Ridge

The Florida Scrub

Characteristics of scrub include:

- Dry, Sandy, Xeric
- Dependent on fire
- Distinctive plant community
- Many endemic species due to unique conditions & isolation



Archbold Biological Station



Archbold Biological Station is located on more than 5,000 acres of Florida Scrub. Founded in 1941, scientists have been conducting long-term ecological research on this unique habitat.

The Florida Scrub Jay (FSJ)



- Only found in the Florida Scrub (endemic)
- Cooperative breeding: a social system where offspring will remain with parents to help defend territory and care for siblings
- Build their nests in low shrubs or oaks
- Babies eat insects. Adults eat a varied diet including acorns
- In fall, each adults stores up to 8,000 acorns in preparation for spring

Study Design

What long term impact does fire have on the number of FSJ territories in MU50?

Hypothesis:

What was your hypothesis?

Study Design

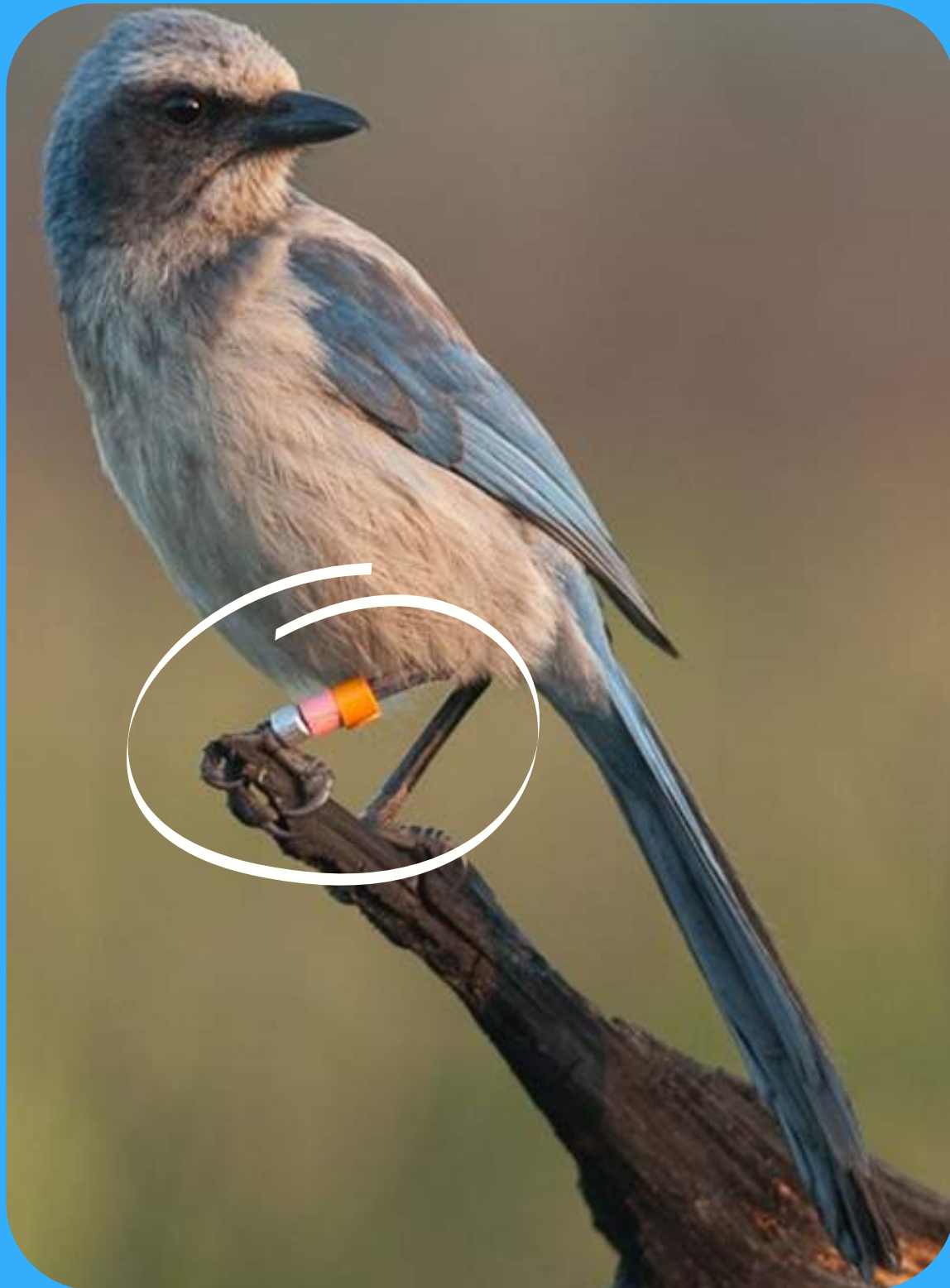
What long term impact does fire have on the number of FSJ territories in MU50?

Hypothesis:

Any prediction that is supported by evidence from the Research Background is a valid answer!

There is no such thing as a right or wrong hypothesis! A hypothesis is either supported by the data or not.

Bird Banding



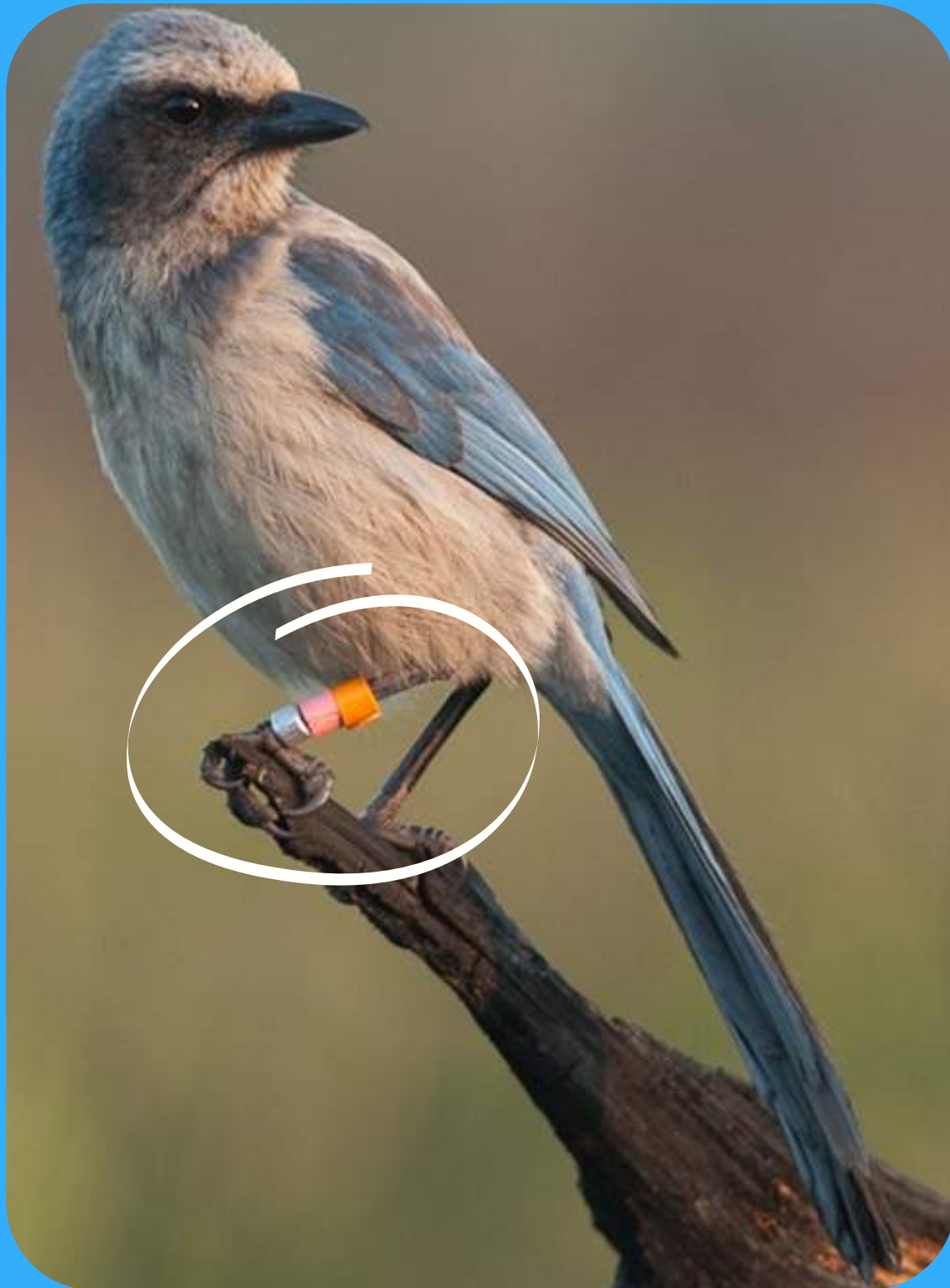
What?

Why?

When?

Do you know the answers to these three questions?

Bird Banding



What?

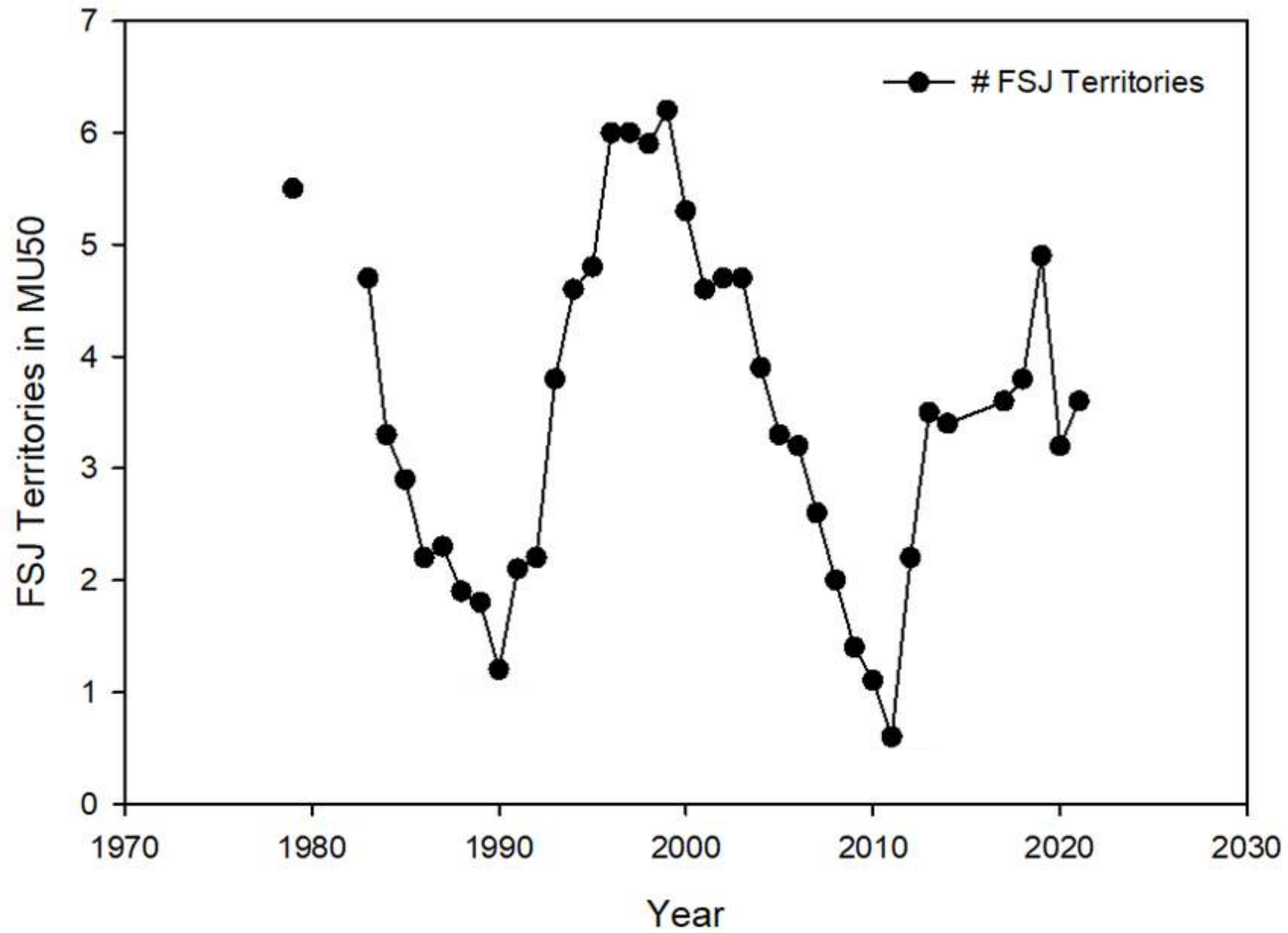
Scientists place aluminum or plastic bands on a bird's leg

Why?

The bands act as identification, which is used in scientific studies

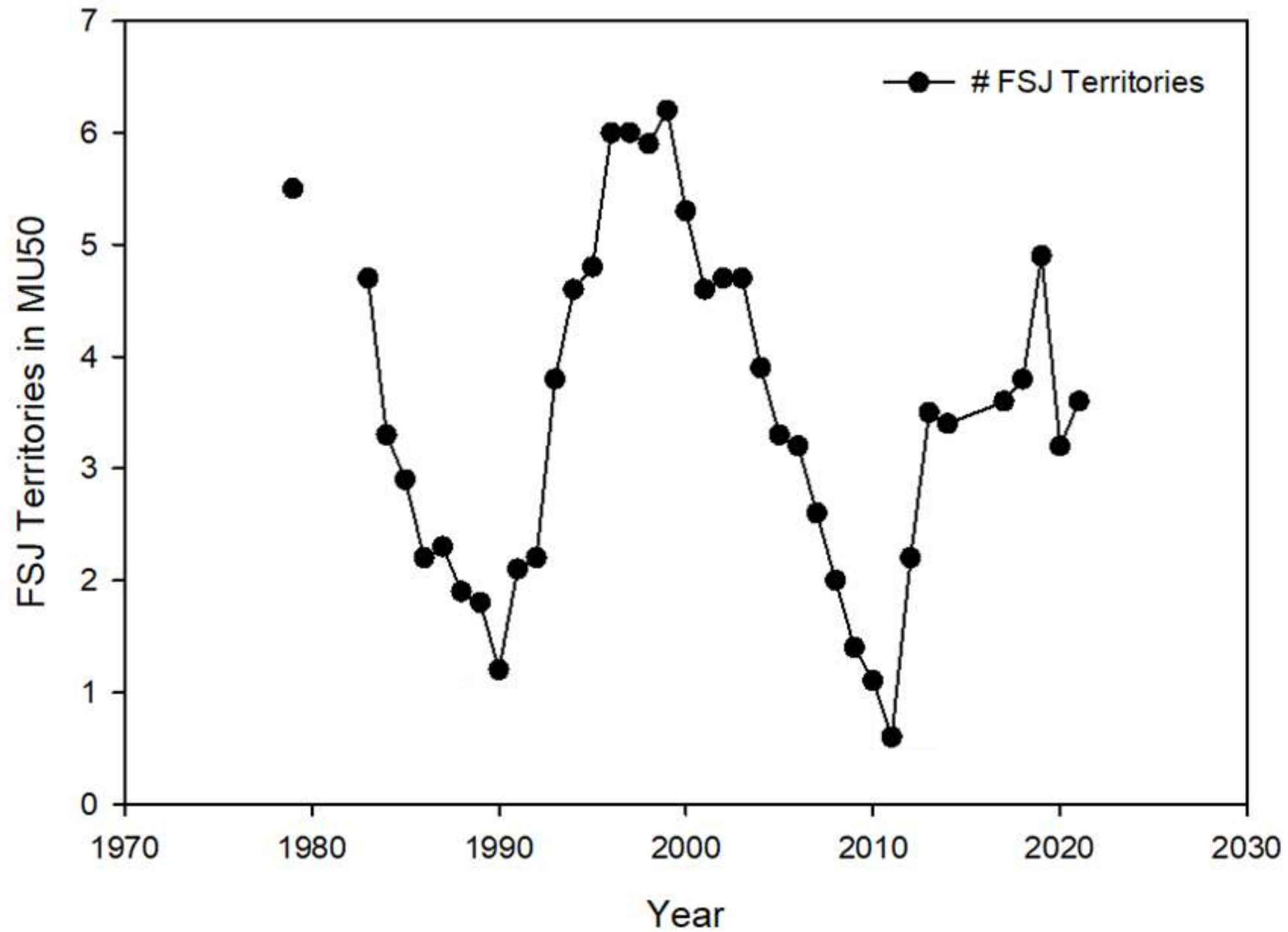
When?

At Archbold, every FSJ is banded at 11 days old



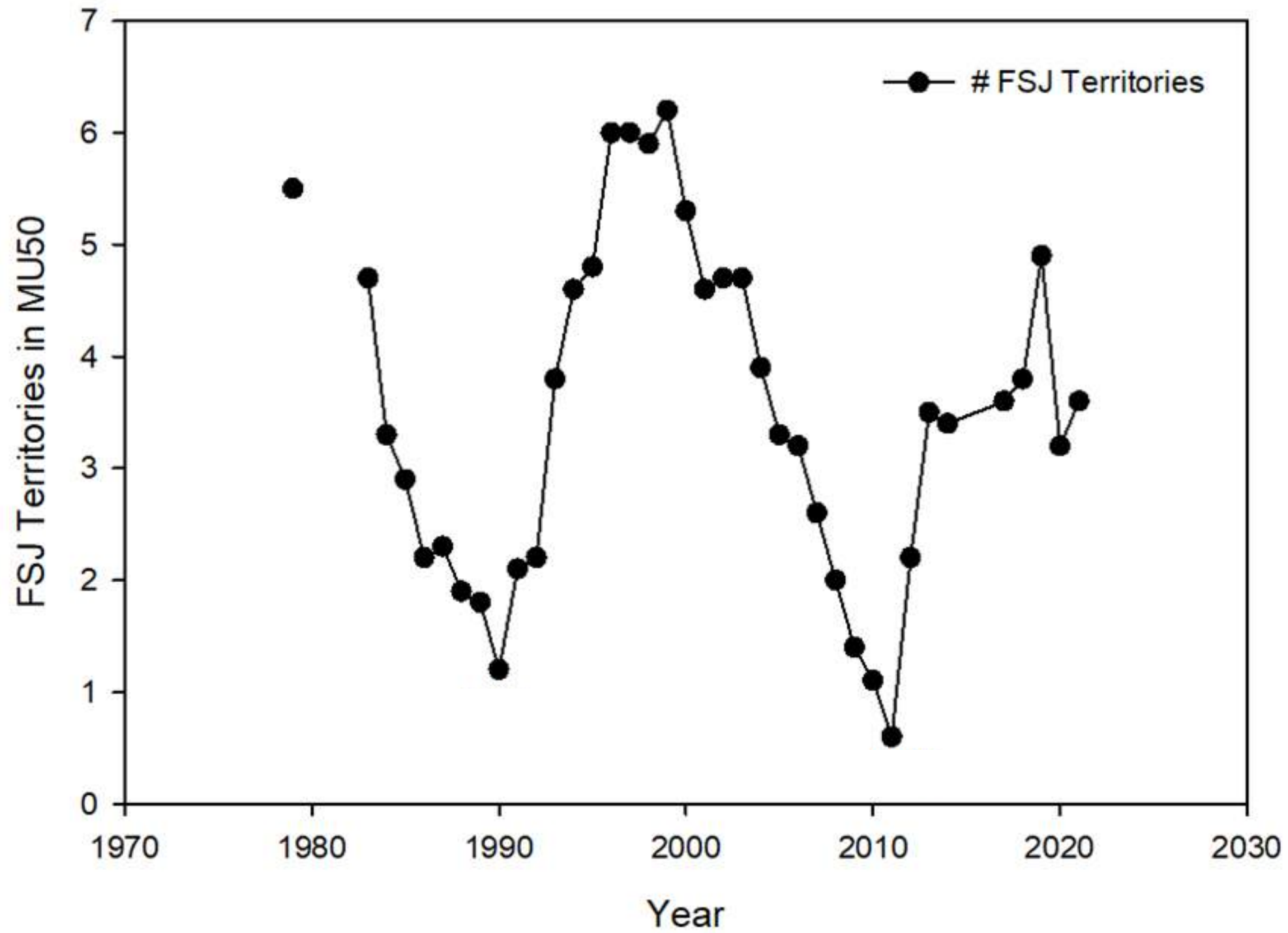
**Explain a trend in this graph.
Use specific data points as
evidence.**

Share
your
answers!



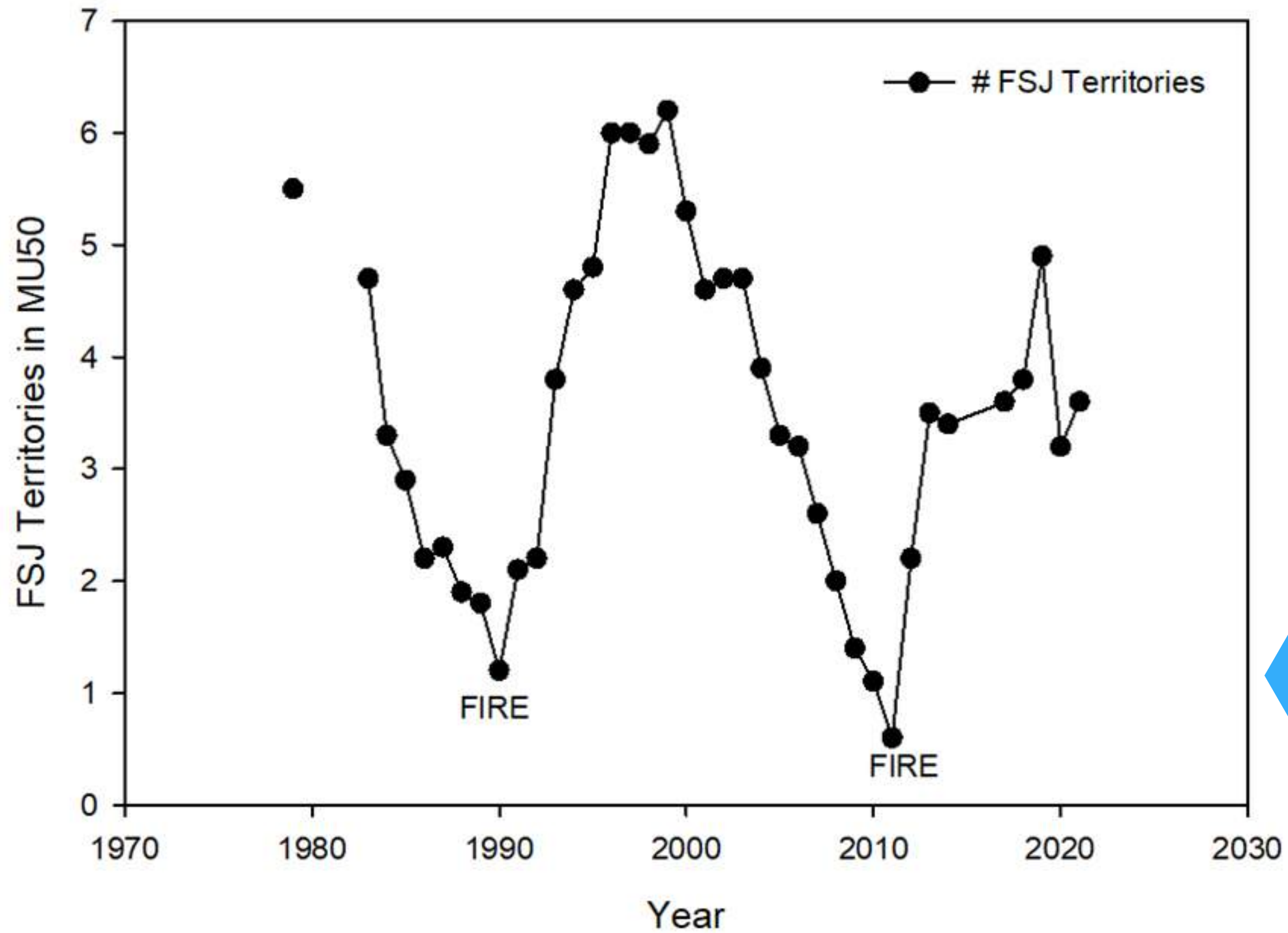
Explain a trend in this graph. Use specific data points as evidence.

Example Answer: The number of territories decreased from 2000 to 2011. There were ~6.3 territories in 2000 and ~0.5 territories in 2011.



Based on your hypothesis, which year(s) do you predict had fires?

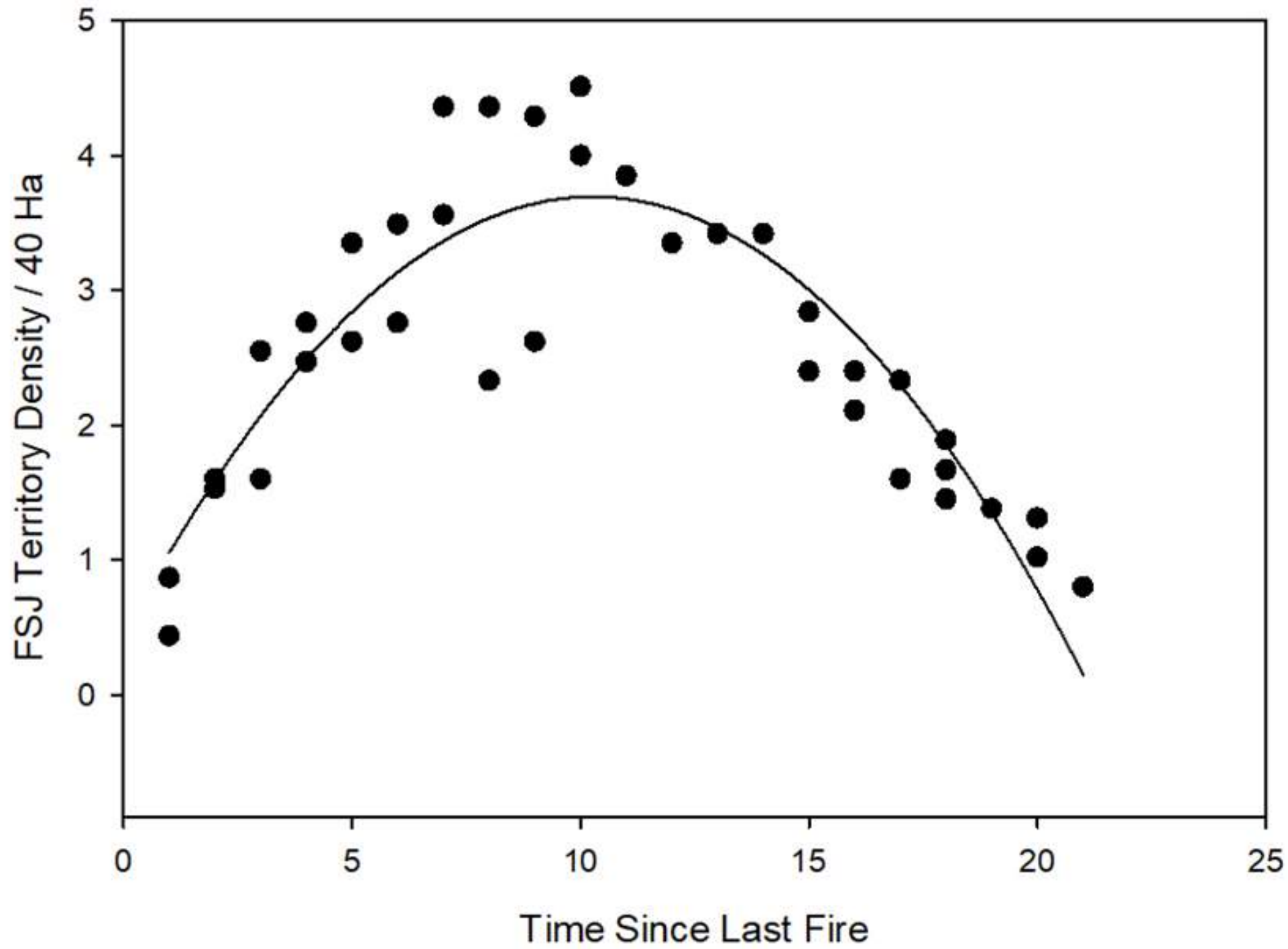
Share
your
answers!



Based on your hypothesis, which year(s) do you predict had fires?

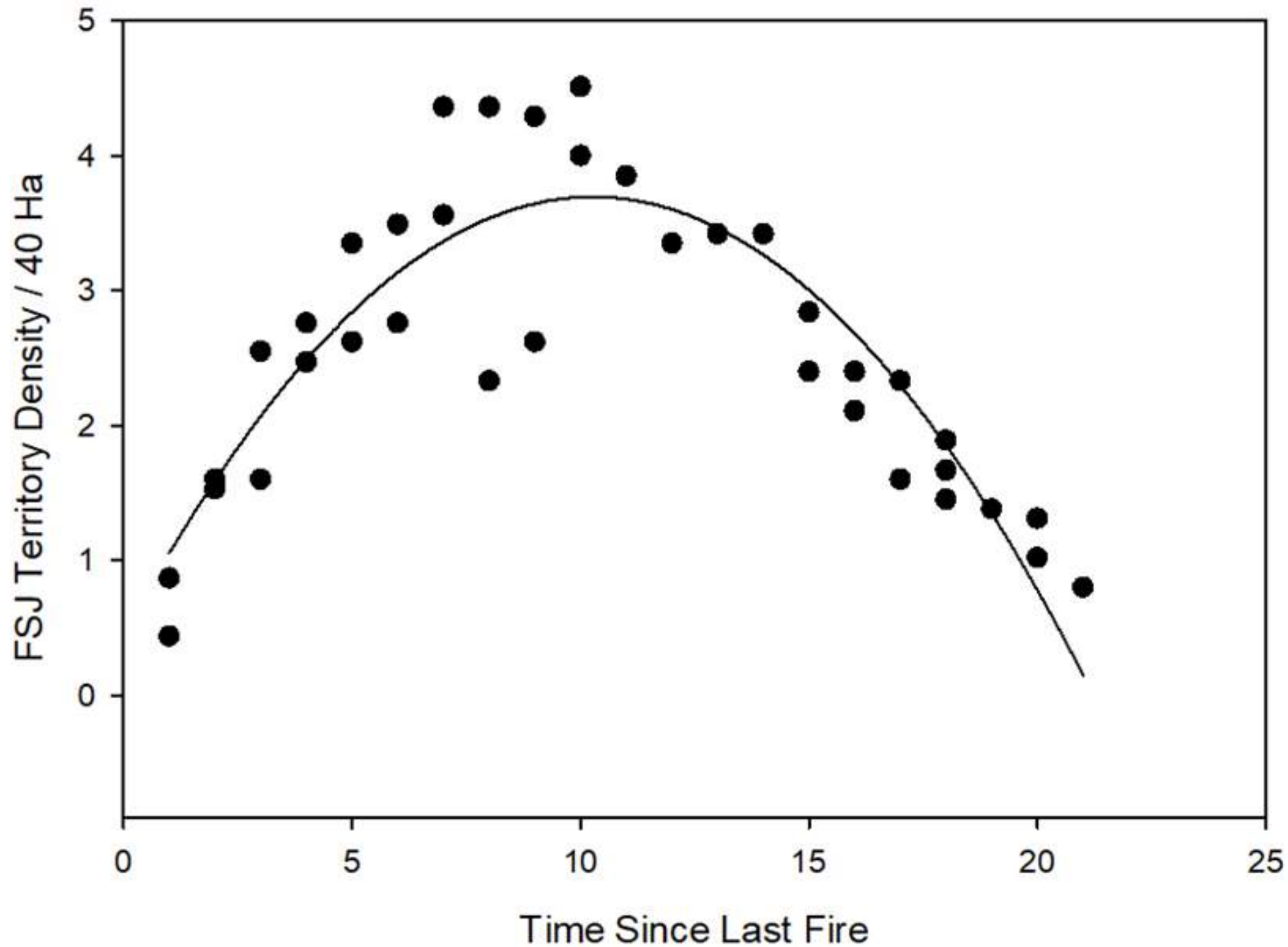
Your answer depends on your hypothesis!

Check out which years there were fires!



Explain the general trend of this graph. Use specific data points

Share
your
answers!



Explain the general trend of this graph. Use specific data points

The FSJ territory density increases for about 10 years after a fire. The density peaks at approximately 10 years, and then, decreases. By 20 years since last fire, the density of FSJ territories has returned to a similar density of immediately after fire.

Land Management

After discovering that FSJs can't live in overgrown scrub, Archbold researchers started to conduct prescribed burns to keep the scrub low and open.

Based on your data analysis, how often would you suggest MU50 to be burned?

Any guesses?



Land Management

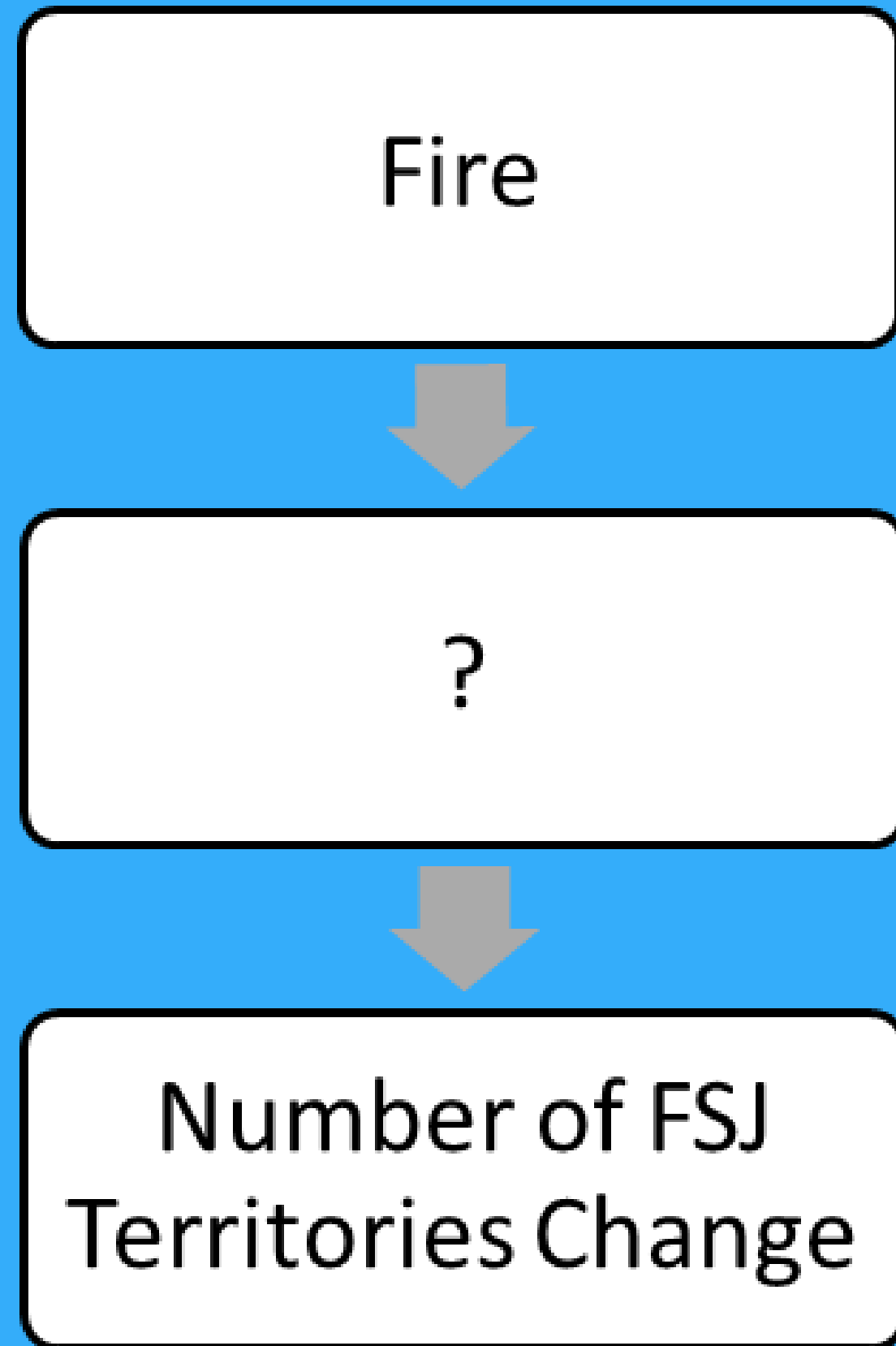
After discovering that FSJs can't live in overgrown scrub, Archbold researchers started to conduct prescribed burns to keep the scrub low and open.

Based on your data analysis, how often would you suggest MU50 to be burned?

Florida Scrub Jays do best when the scrub is burned every 5-15 years.



Why FSJs Need Fire



**Why do
you think?**



A few reasons are...

1. Fire creates open sandy patches so the sentinel jay has a better view predators below.
2. When oaks re-sprout after fire, they produce a large crop of acorns within 2-4 years. Acorns are an important staple in a FSJ's diet.
3. FSJs bury their acorns for spring in sandy patches, which are maintained by fire.
4. FSJs nest in shrubs and low oaks, which get too tall without fire.

**But there are many other potential answers!
Science is ongoing, and FSJ research is always
happening at Archbold!**



What other future research do you think could be done?

Archbold Education Department,
2022

123 Main Dr.
Venus, FL 33960

863-465-2571

<https://www.archbold-station.org/>

