

# **Human–Wildlife Coexistence in the Huife Watershed**

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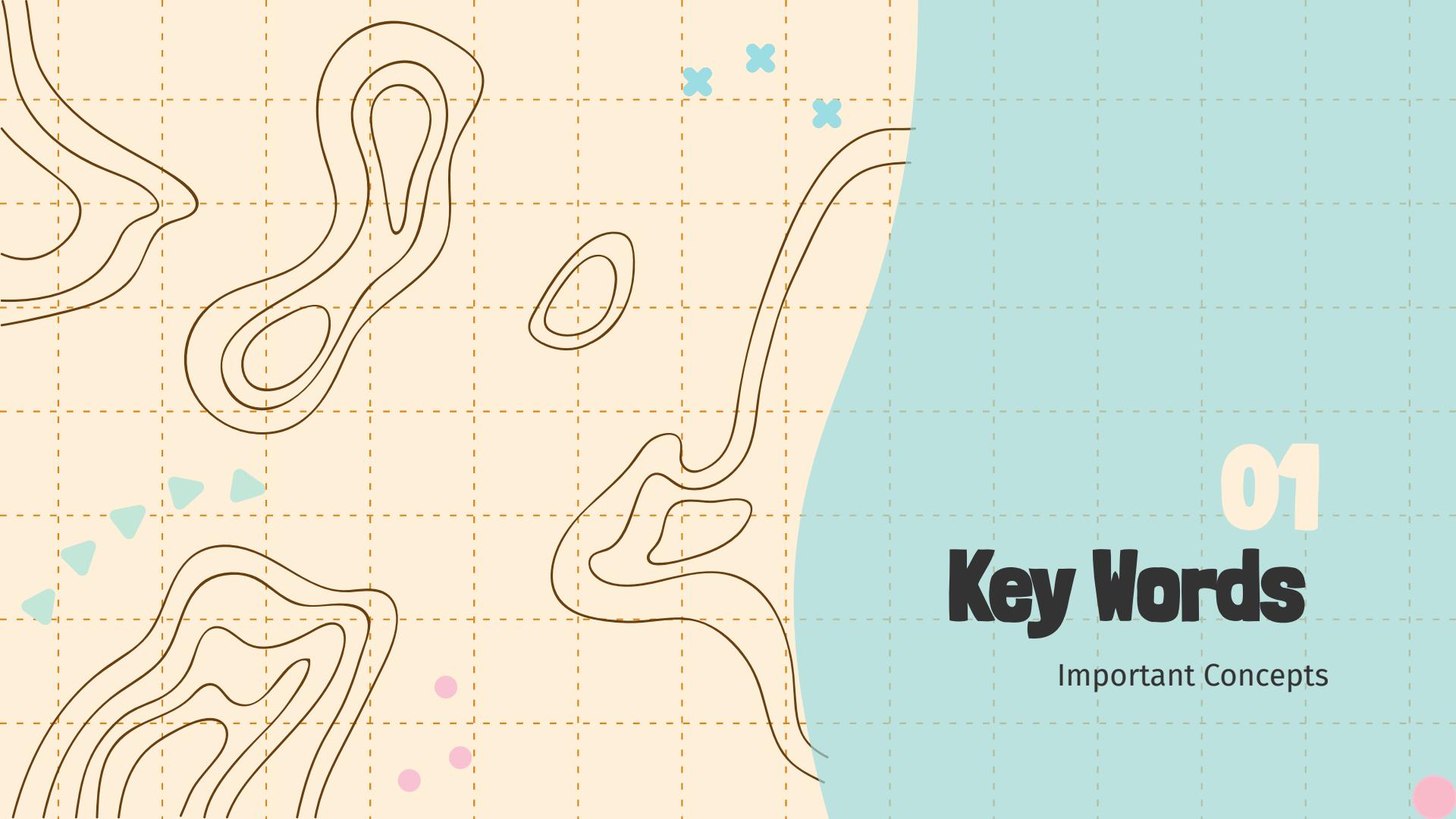
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# 01

# Key Words

Important Concepts

# Key Words



**Subdivision**



**Migration**



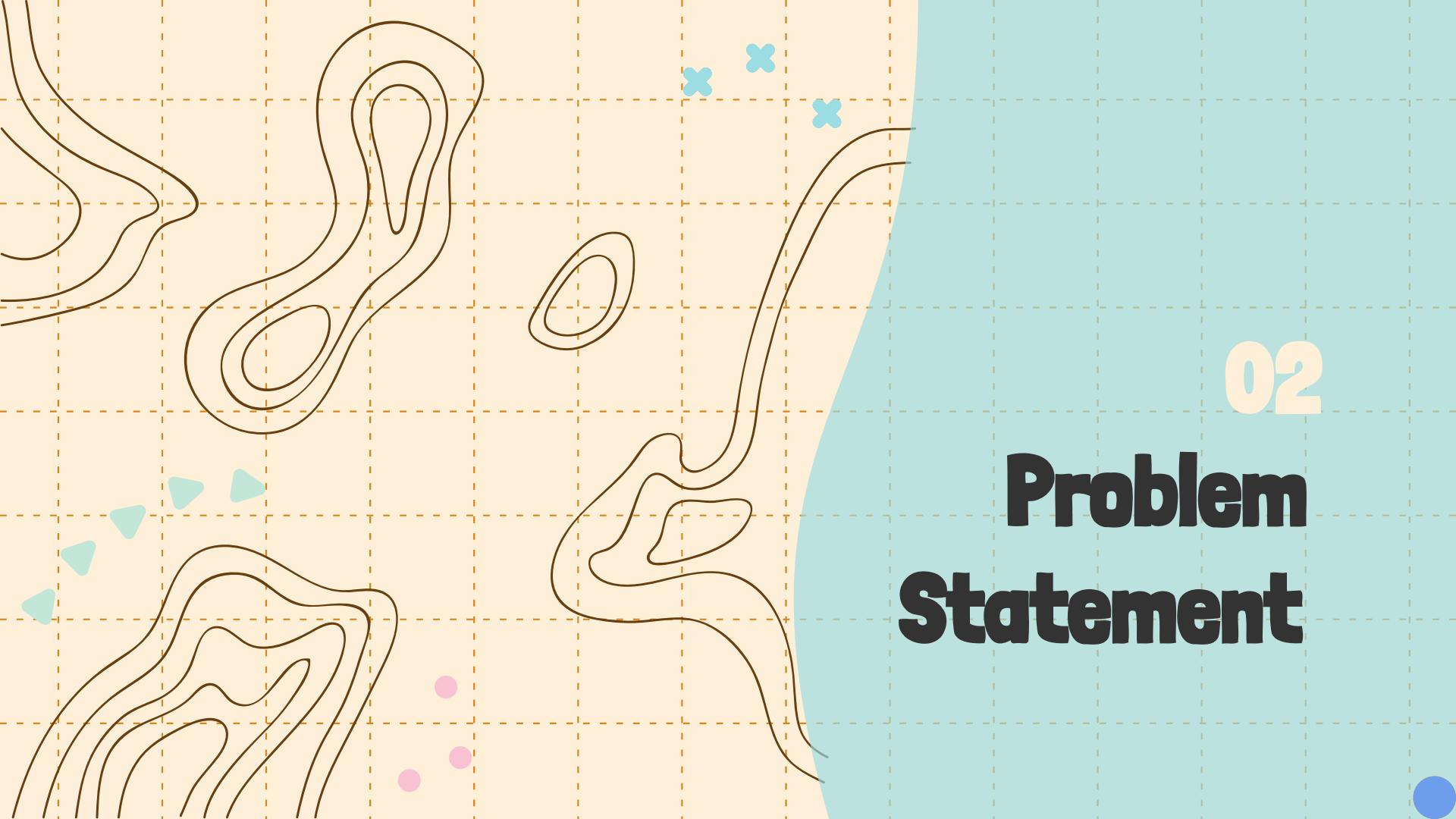
**Tolerance**



**Predators**

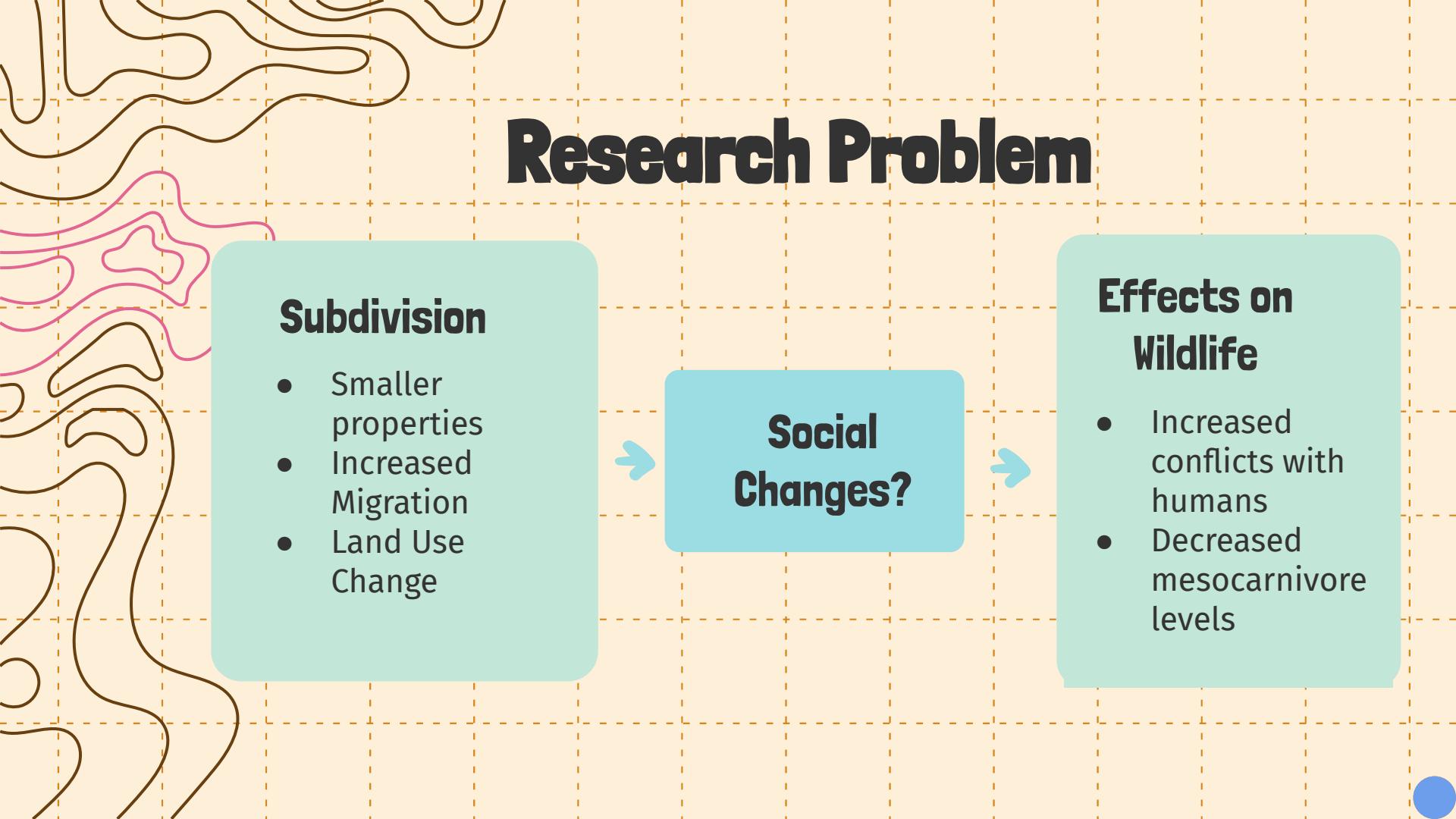


**Co-Existence**



02

# Problem Statement



# Research Problem

## Subdivision

- Smaller properties
- Increased Migration
- Land Use Change

Social  
Changes?

## Effects on Wildlife

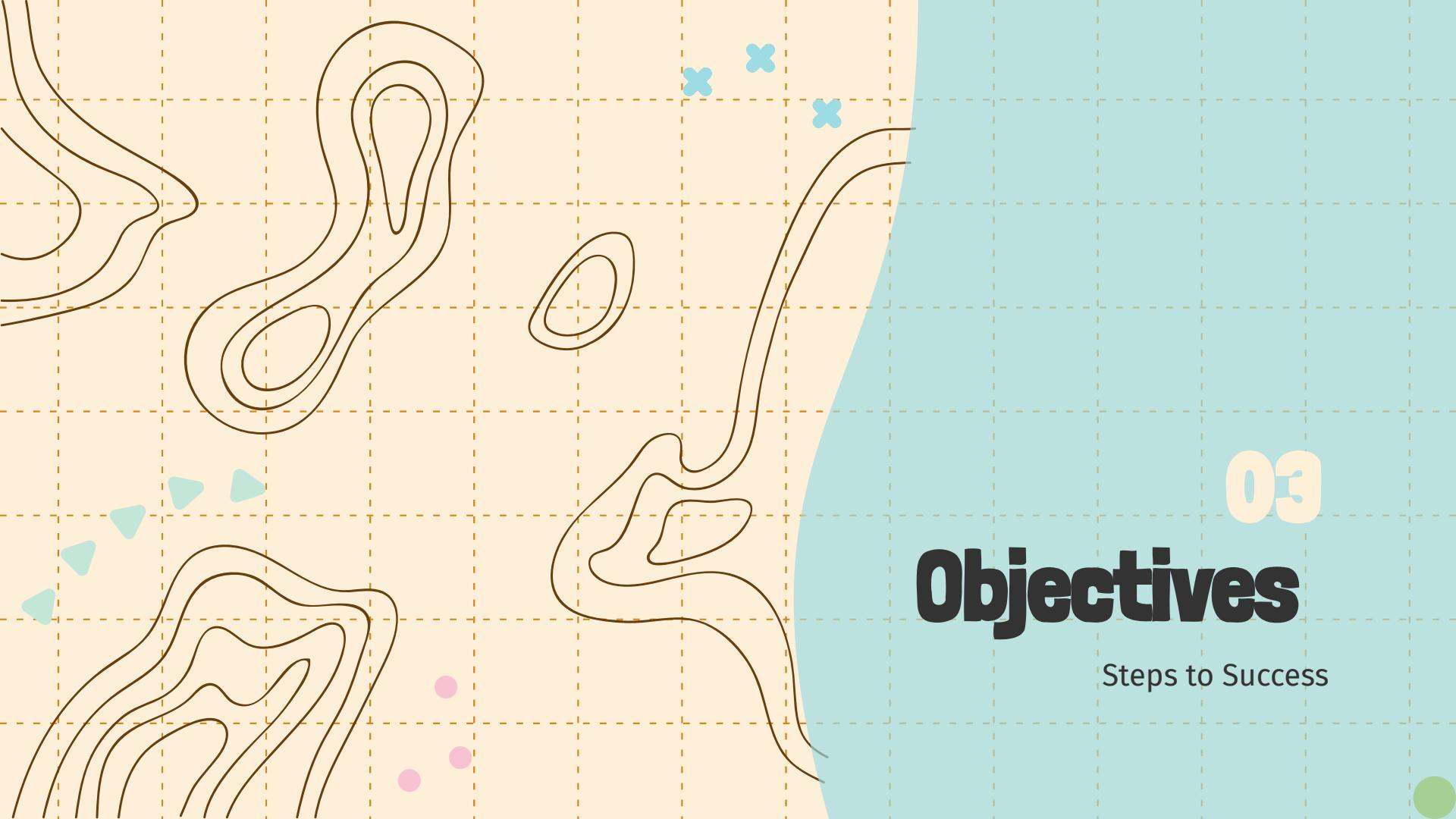
- Increased conflicts with humans
- Decreased mesocarnivore levels

# **Research Question**



**How do the social characteristics associated with increased land subdivision affect interactions between people and mesocarnivores in the Huife Watershed?**



The background features a light blue grid on a white surface. Overlaid are several brown contour-like lines and three distinct clusters of small, semi-transparent teal, pink, and orange shapes.

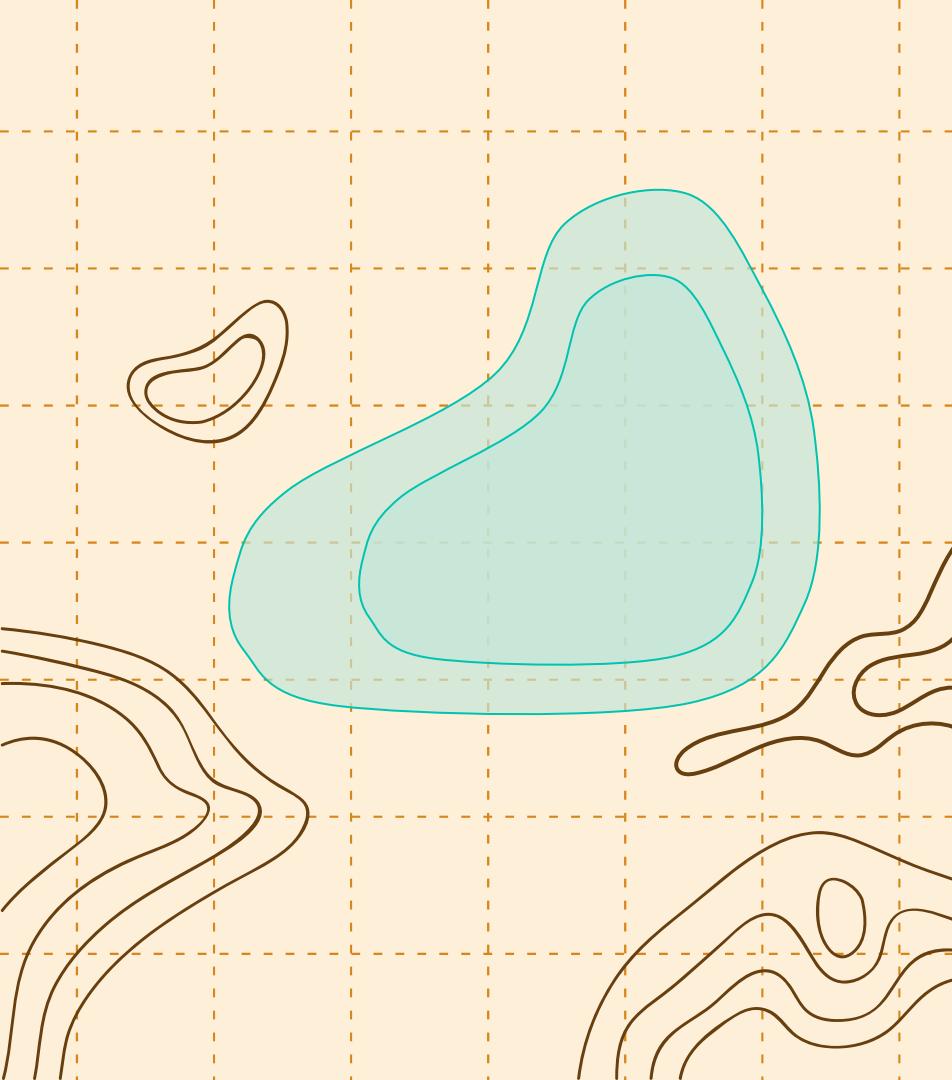
03

# Objectives

Steps to Success

# 1. Identify different cases of land subdivision and explore qualitative land use and ecological characteristics associated with each area.

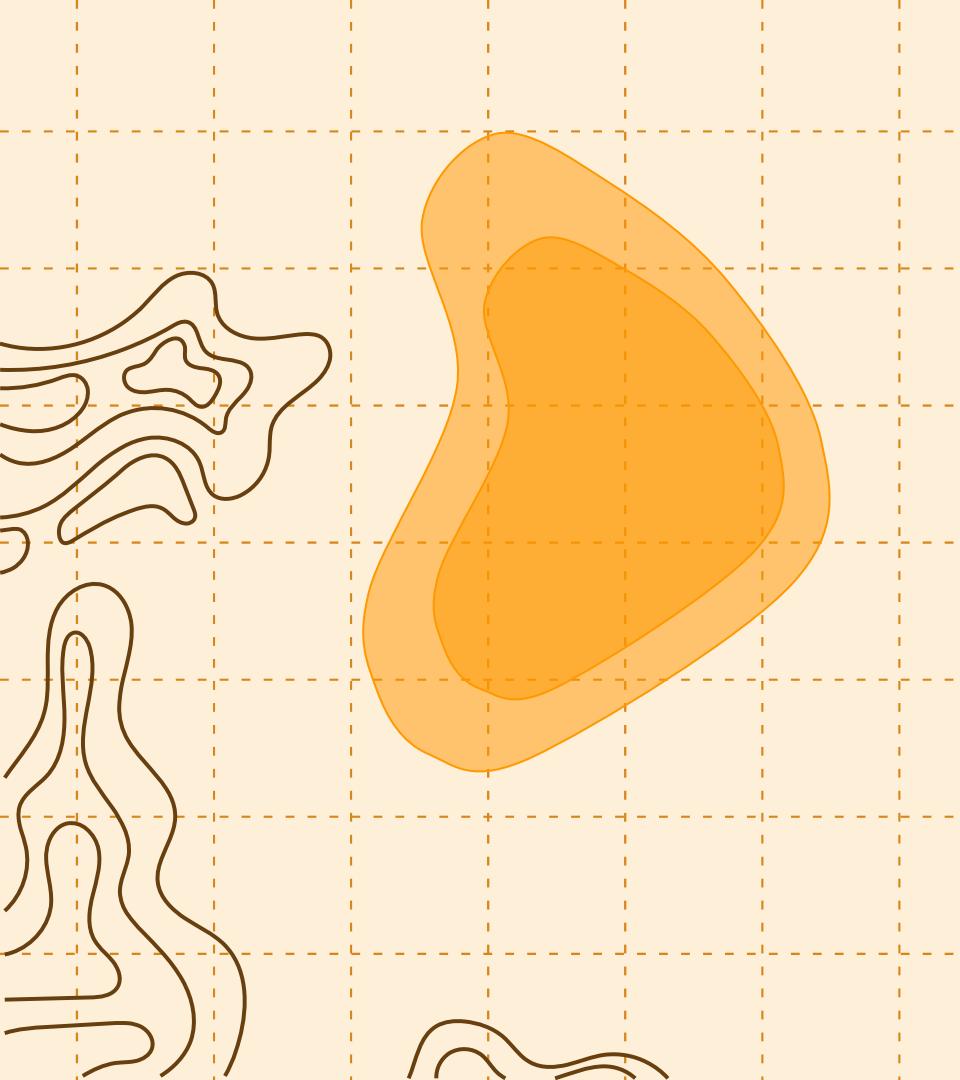




**2. Determine  
variances in  
human–wildlife  
interactions  
encountered within  
each study area.**

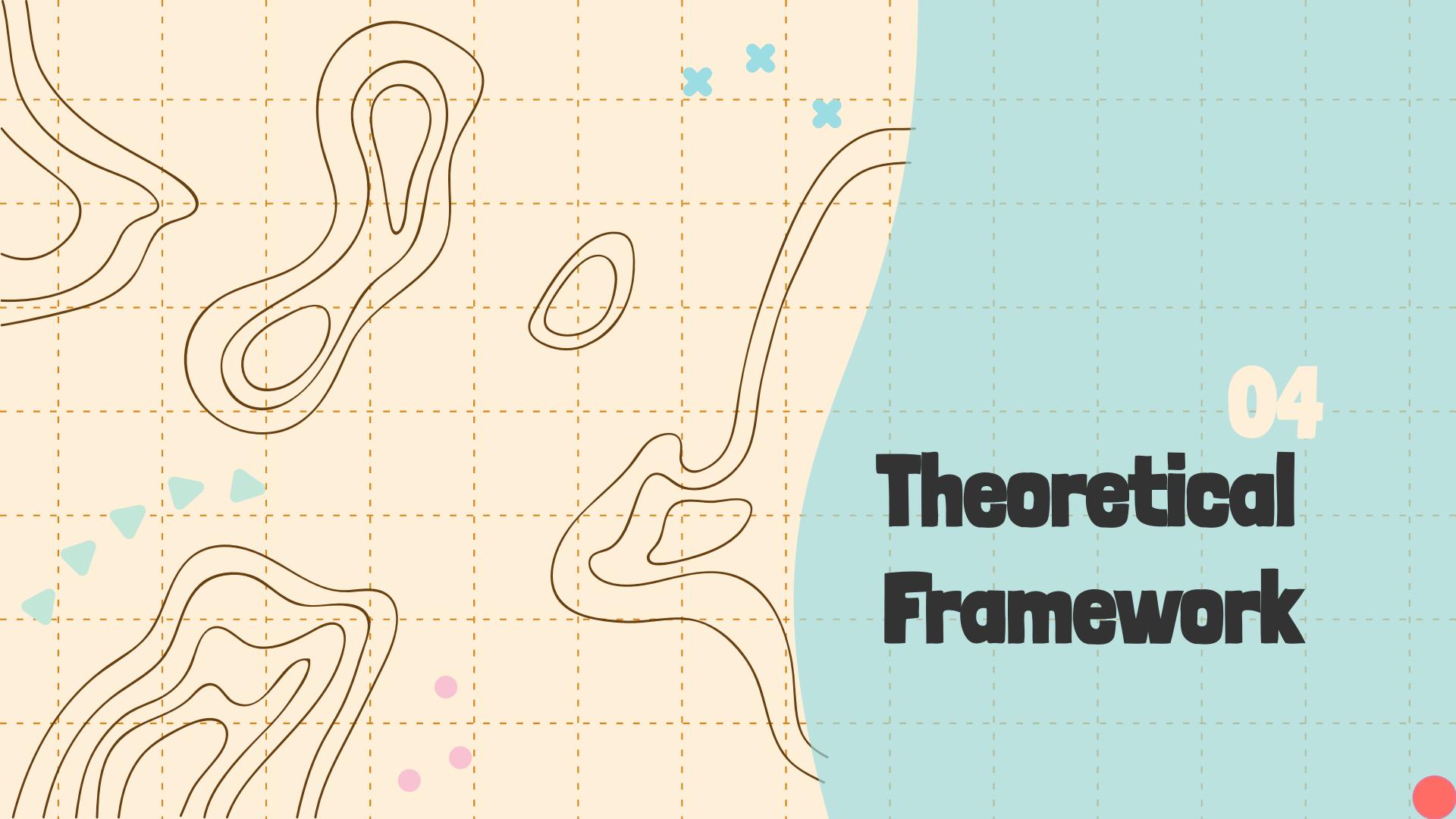


**3. Evaluate how  
different societal  
and familial  
backgrounds  
influence attitudes  
towards wildlife.**



**4. Identify possible societal steps to mitigate human conflicts with wildlife and further research questions.**

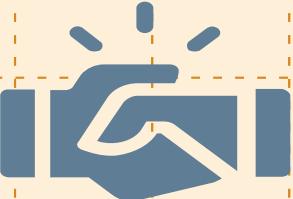




04

# Theoretical Framework

# Attitudes, Tolerance, and Actions



## Attitudes

A person's perspective on a topic or action

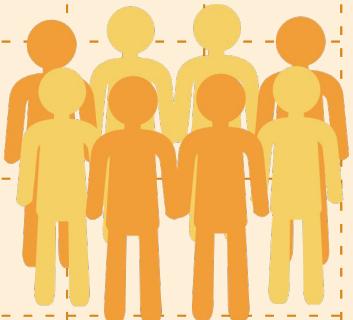
## Tolerance

Passive acceptance of a wildlife population

## Actions

Methods towards coexistence

# Demographics



**What**

A person or community's background based on the environment they were formed in

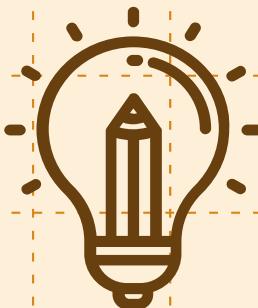
**Why**

This can influence their perspectives and relations on nature

**How**

Education, religion, politics, and more can impact outlooks

# **Generational Knowledge and Ecological Education**

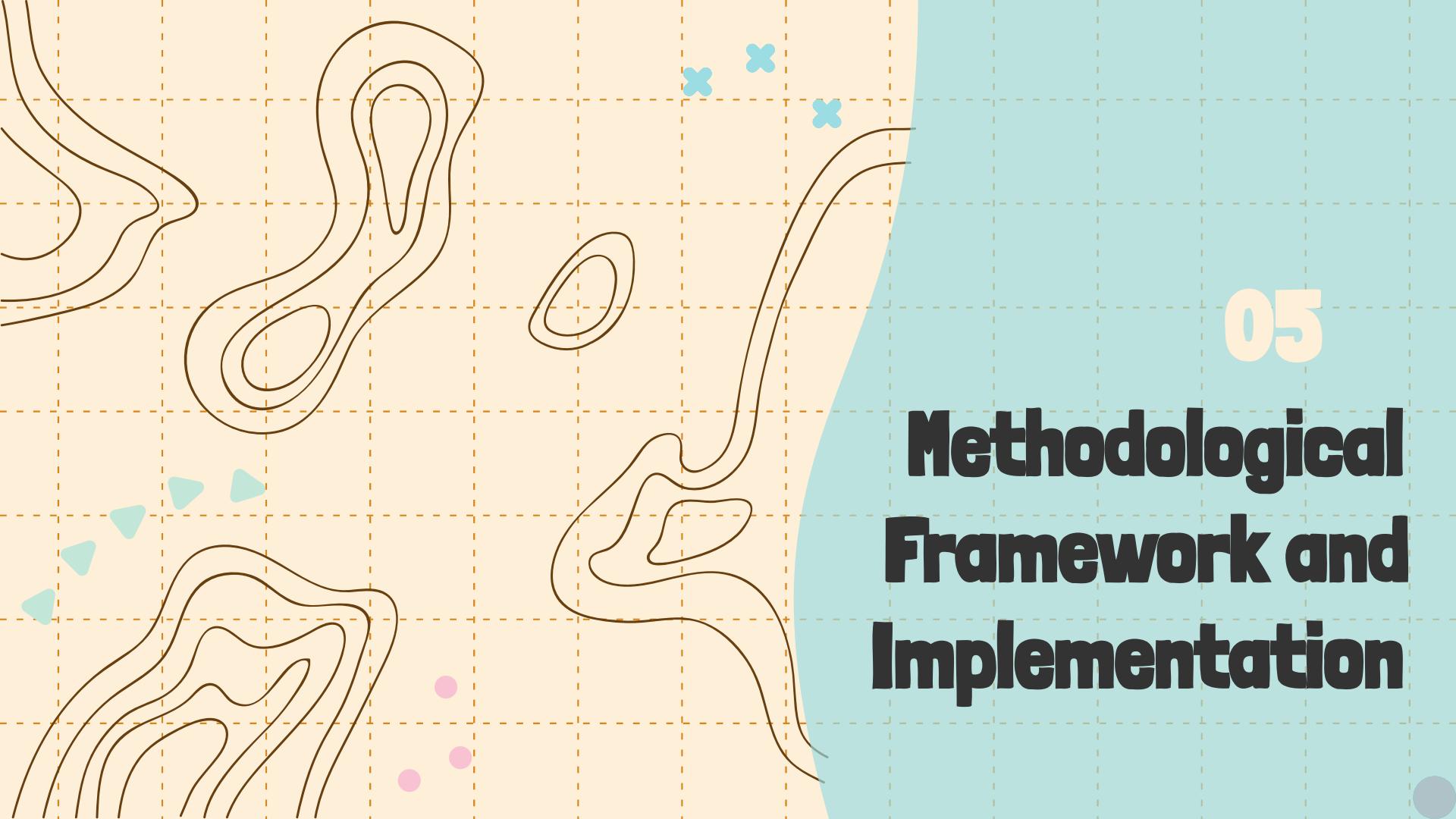


## **Generational Knowledge**

- Knowledge about land can be inherited and grows over time
- Varies across demographics

## **Ecological Education**

- Can change attitudes and actions
- Formal versus informal
- Age, time spent on land



05

# Methodological Framework and Implementation



# Methods Overview

- **Site Selection**
- **Free Listing**
- **Guided Tours**
- **Coding**
- **Interview Questions**
  - **Basic Info**
  - **Conflicts**

# Study Site Selection Criteria

- **Varied land size**
- **Different land use**
  - **Livestock**
  - **Housing**
  - **Agriculture**
- **Length of residency in Huife**
- **History of surrounding subdivision**
- **Diversity of landowner demographics**



Image: Huife Watershed (Google Maps)

# Method: Interviews

- Elucidates attitudes and perceptions of wildlife
- Effective tool to learn local history
- Creates a comfortable environment and relationship of trust
- Provides information while allowing and promoting flow of natural conversation



# Questions we asked

- How many people live on your property?
- How much land do you own?
- How long have you lived on your property?
- What is the use of your land?



**Then we had specific questions for  
each person**

Aimed to foster a conversation about their  
sentiments of the land and wildlife

# Free Listing

We asked each interviewee to list any predators they have interactions with

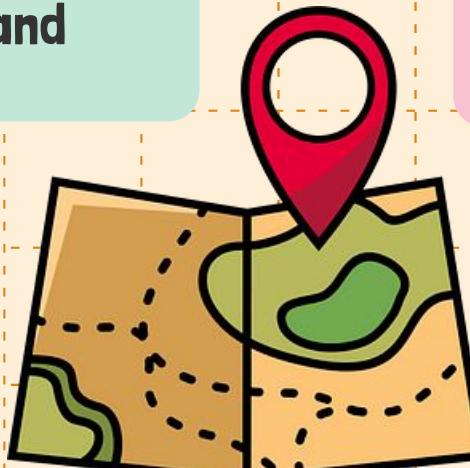


From this we can infer which predators they see most and possibly their attitudes towards them

# Guided Tours

We asked each actor to show us around their land

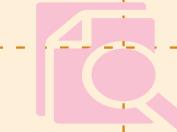
This allowed us to actually see the divisions and natural aspects we asked about



# Coding



We coded our transcripts to find themes



Then we analyzed the themes to see what overlaps



# 06 Results

# Sites

## José's Property

Small Agricultural Conservation Background

## Ana's Property

Small Agricultural Highly Divided Area

## Liken Lodge

Tourism  
Cabañas  
Conservation Section

## Kawellucó

Housing Development  
Conservation Area  
High Income



Objective 1

# Basic Info

	Land Size	Use	Livestock?	Number of Residents	Tenure
<b>José</b>	8 ha	Subsistence and Small Scale Ag	Yes, Sheep Chickens and More	5 Houses	50 Years
<b>Ana</b>	16 ha	Subsistence and Small Scale Ag	Yes, Sheep Chickens and More	2 Houses	>60 Years
<b>Liken</b>	5.5 ha	Cabaña/Eco Tourism	No	1 Family and Capacity for 11 Guests	8 Years
<b>Kawellucó</b>	1200 ha	Housing Development/ Conservation Area	Horses	40 houses with potential for 100 in the first stage	>20 Years

# **JOSÉ from the Cañi area**

- **A long term resident of the Huife watershed.**
- **Understands ecological importance of these animals, strives for coexistence**
- **Has conflict over livestock with Harris's Hawk**
  - **Decimated chickens**
  - **Has tried to kill hawks**



Image: A property in the area near José's land

## **ANA from Upper Huife**

- **Family has resided in the Huife watershed for generations**
- **Seen surrounding land change.**
- **Mink has attacked her chickens**
  - **Tried to use traps**



Image: Ana's property

# **ISABEL from Liken Lodge**

- **Eco tourism retreat**
- **Migrant from Santiago**
- **Once she moved to the area, developed an interest in conservation**
- **Plot of preserved forest**
- **Stopped raising chickens after all were eaten by minks**
- **Has had trouble keeping dogs off her property**



Image: Field at Liken Lodge

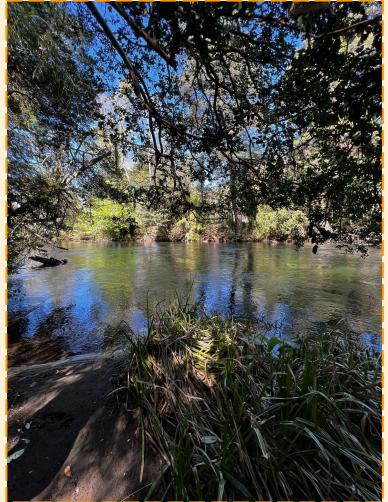


Image: Mink sighting location on Liken property

# Kawellucó Biodiversity Committee

- Residential development that attracts wealthier migrants from Santiago, many second homes
- Kawellucó's location leads in increased human-wildlife interaction
- Committee was formed to foster connection with wildlife
- Bats in walls
- Attempts to change residents behaviors with their dogs



Image: Community Center at Kawellucó. (Cazu Zegers, 1997)



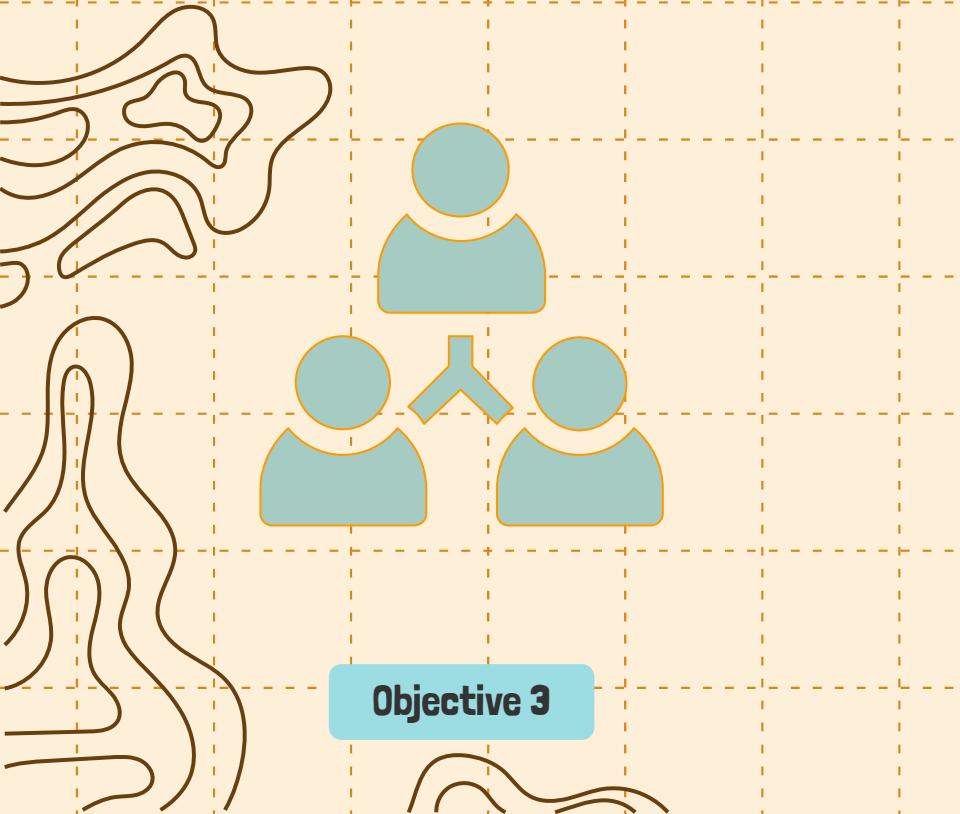
Image:  
'Granjero'  
House in  
Kawellucó  
Developm  
ent (Cazú  
Zegers)

07

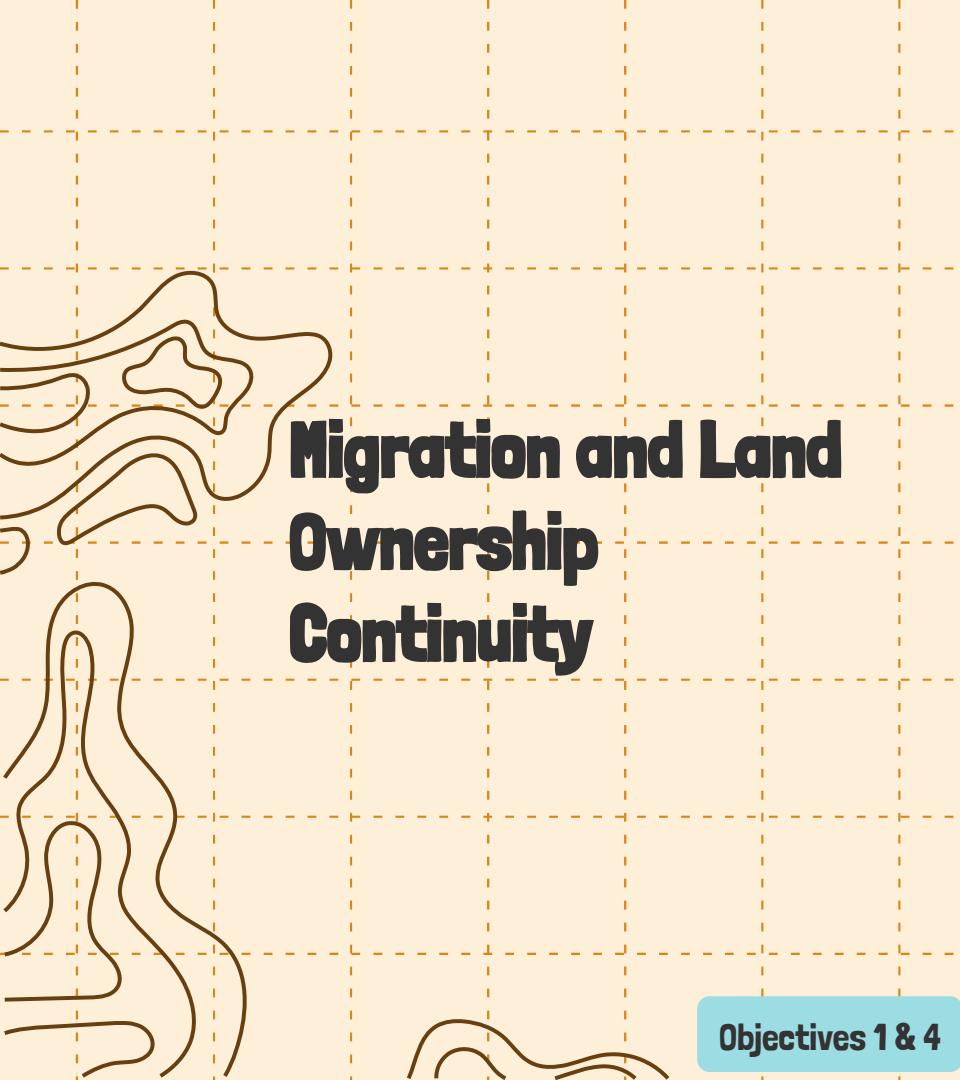
# Discussion & Conclusion



# Community Structure



- **Education and sharing knowledge**
- **Communication channels**
  - WhatsApp
  - Physical community spaces, plan for dog free spaces
- **Informal enforcement of guidelines**
- **Rate of subdivision**

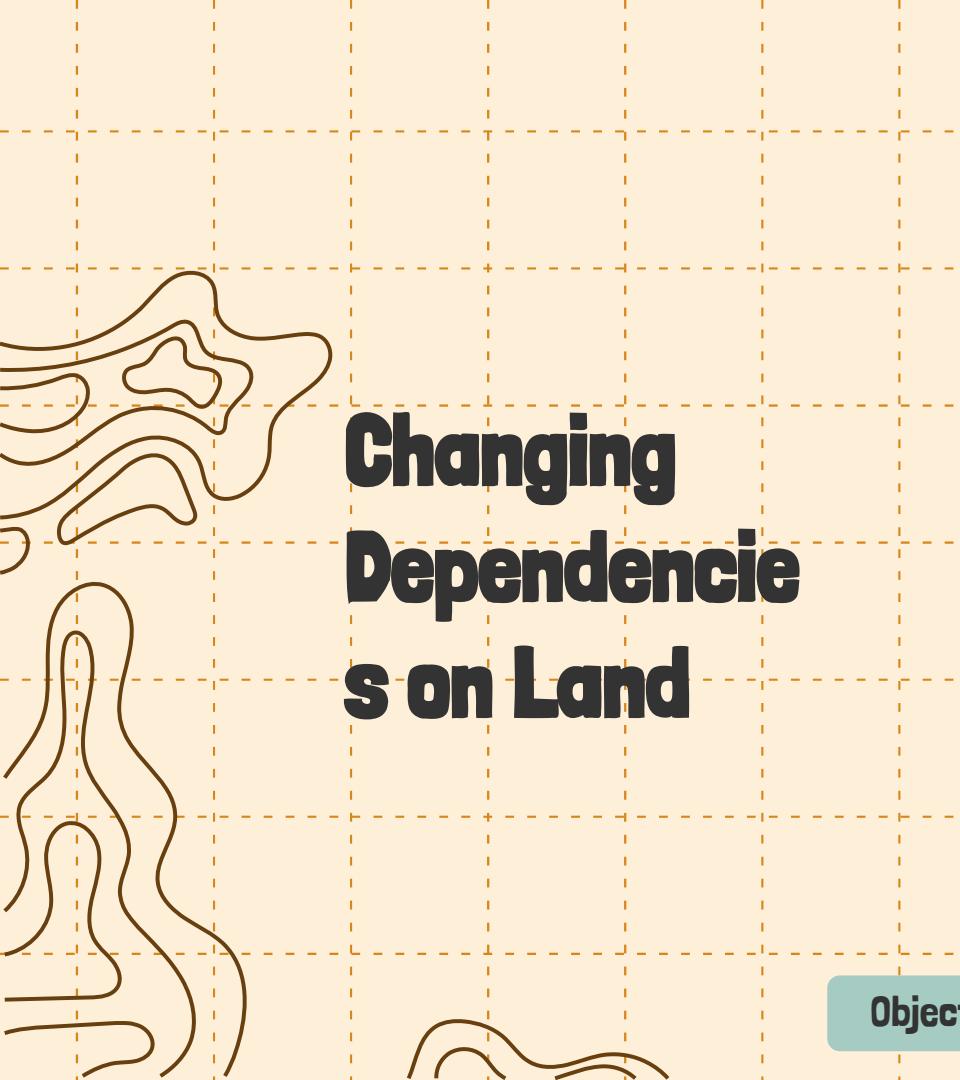


# **Migration and Land Ownership Continuity**

**Objectives 1 & 4**



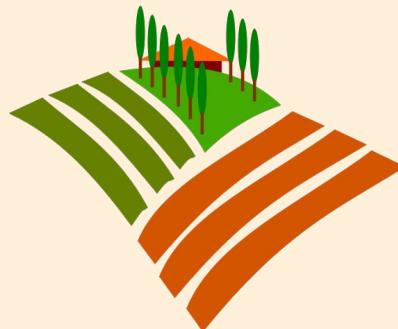
- **New residents come in with less ecological knowledge**
- **Tolerance can develop over time**
- **Desire to maintain familial ownership of land through future generations**
- **Retention of knowledge and tolerance**
  - **Generational**
  - **Intentional systems**



# **Changing Dependencies on Land**

**Objective 2**

- Move towards residential and tourism land use
- Decrease in agriculture and livestock raising
- Recharacterizes conflicts
  - Less economically threatening
- Increase in Residential and Tourism



# Native vs. Non Native Predators



- Shared tolerance towards native mesocarnivores
- Dogs are seen as a nuisance
- Invasive mink is seen as a major problem
- Other similar animals such as Güiñas are given more tolerance
  - Both participate in mass-killings
- Hypothesize whether this is due to existing knowledge on their endemic nature or because they have caused more problems

# Conclusion

- Trends in land subdivision change and recharacterize human–wildlife conflicts
- Community connectedness can facilitate sustainable relationships between humans and wild mesocarnivores
  - Communication of ecological knowledge and social pressures to promote coexistence
- Tolerance for wildlife can be accumulated over time and inherited over generations
  - Land ownership continuity is key for promoting human–wildlife coexistence.
- A species' endemic status is likely to affect peoples' tolerance for it

# Limits Of Our Study



**Minimal amounts  
of interviews and  
property surveys**



**Non-random  
selection of  
interviewees**



**Limited time to  
conduct study**



# Next Steps



## Website

Finalize our website on native fauna for Kawellucó



## Propose New Research

Further explore how non-native origins of mesocarnivores affect attitudes and behaviors

Investigate new methods for community education as effective method to achieve human-wildlife coexistence

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Wow so well researched!

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Now im just bored

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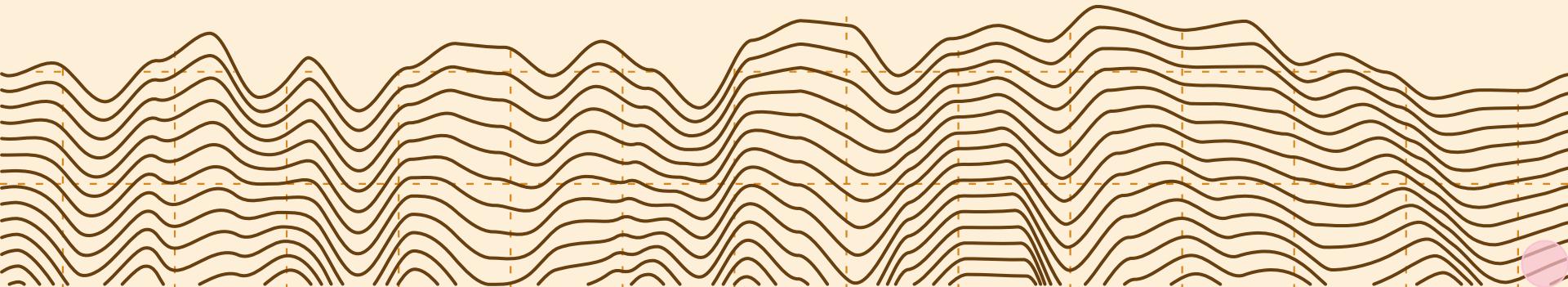
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# Questions?