

# How Change in Human Activity Affected Urban Wildlife During COVID-19 Lockdowns

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There were reports of increased wildlife sightings in urban areas during Covid-19 lockdowns in 2020. Our question is how strongly does human mobility influence wildlife behavior and movement?

- Analyze how wildlife adapts to urban spaces

Specifically analyzing coyote movement in Los Angeles

- Comparisons between April 2019, April 2020, and April 2021

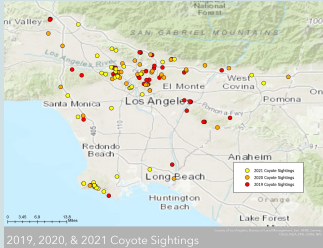


# Data and Resources



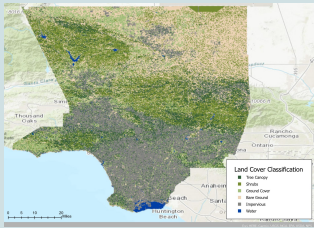
## Coyote data:

- Source: iNaturalist
- Tracks user-reported sightings of coyotes in the area (LA county)
  - Time of sighting, and exact location



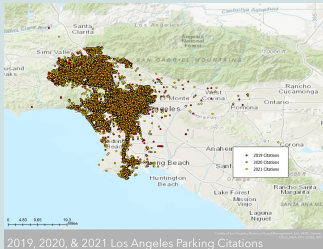
## Land cover:

- Source: ArcGIS Online
- Specifies which areas of the county are covered by a certain land cover type
- Tree canopy, shrubs, ground cover, bare ground, impervious (cement), water



## Human mobility:

- Source: Los Angeles Open Data
- Tracks parking citations issued in Los Angeles
  - Time of citation issue, and exact location
- Not ideal
  - Relying on parking citations to reflect trends on human mobility during lockdowns



# Analysis Process



## Data Querying

Filtering our data by month and location to single out data from April of each year for Los Angeles County

## Uploading data points

Adding csv data to our map as spatial points

## Spatial Analysis

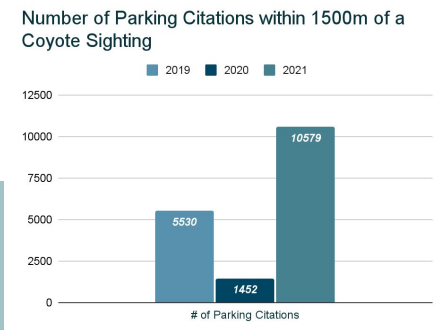
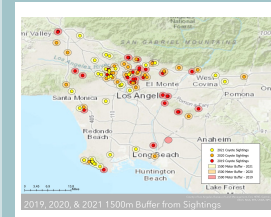
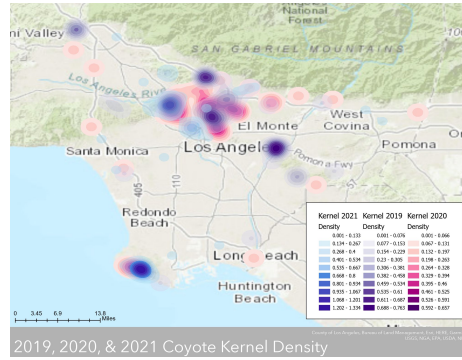
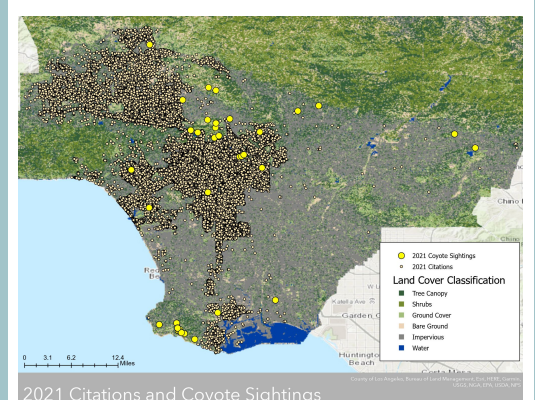
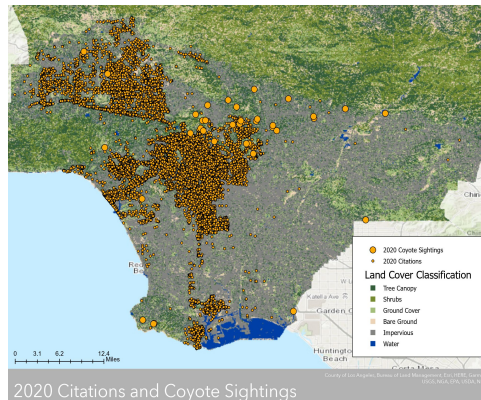
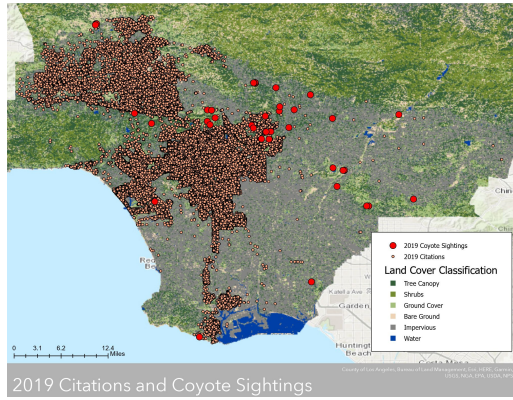


1. Convex Hull - highlights contrast in extent of coyote sightings over the 3 years
2. Buffer Analysis + Spatial Join - shows how many citations were issued near coyote sightings (1500 m)
3. Kernel Density - shows where coyotes were most active

## Interpretations

- Visual differences in the Convex Hull range, Kernel Density hotspots
- Numeric difference in Buffer Analysis reflects human impact

# Results & Deliverables



# Challenges, future extensions, lessons learned



## Challenges:

- Privacy Laws
- Wide range of spatial disbursement of coyote populations

## Future extensions:

- More metropolitan areas
- Different species of animals
- Multiple types of areas
  - Suburban, Parks, Etc.

## Lessons learned:

- Animal behavior is heavily influenced by human activity

