

# Rattlesnakes & Humans in Arizona

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By Geoffrey Smelski & Bryan Hughes  
Arizona Poison & Drug Information Center  
Rattlesnake Solutions



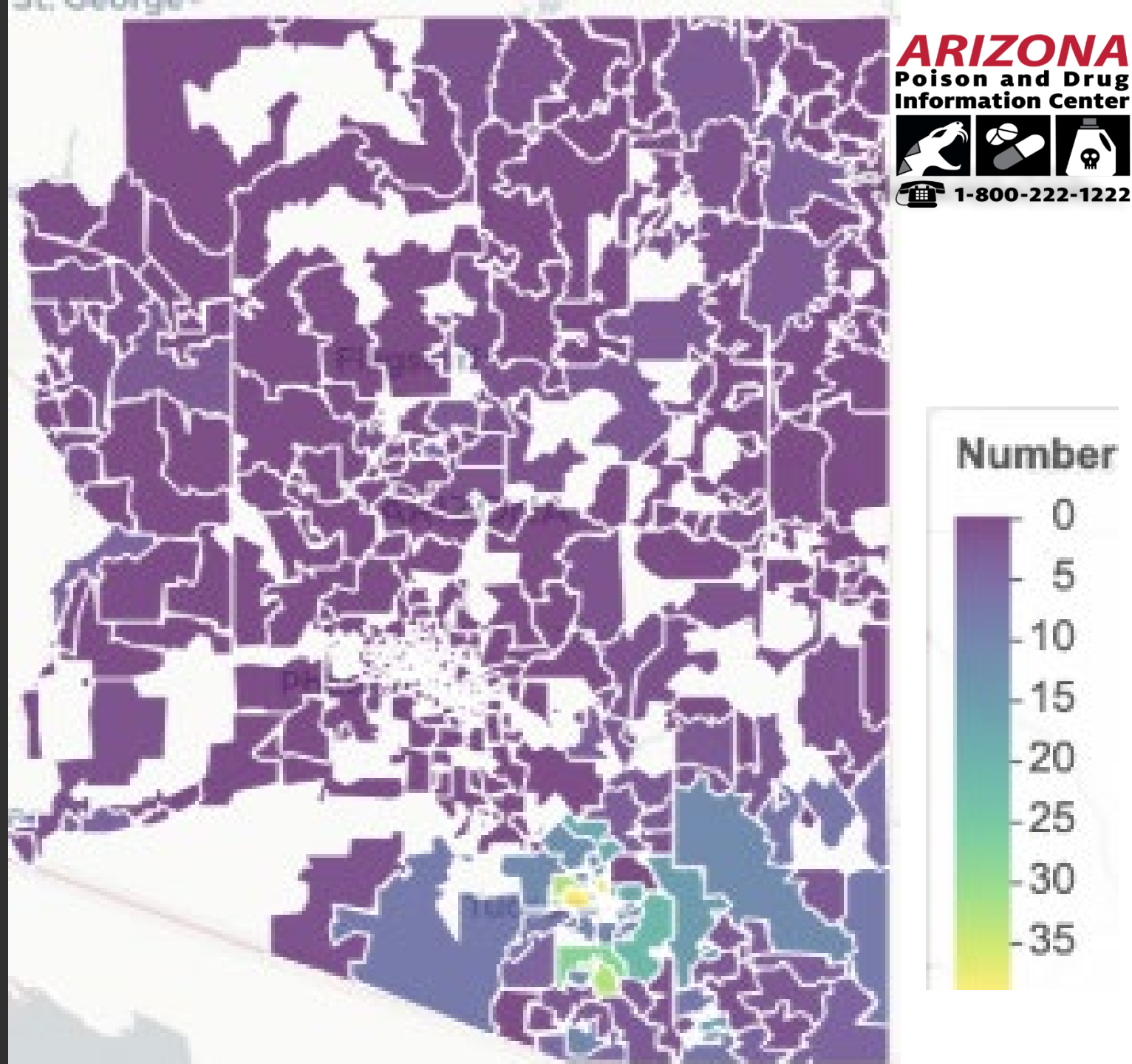


- Managed 22,420 Cases in 2024  
-> **181** Rattlesnake Bites
- Second Oldest Center in US
- Services all AZ, except Maricopa

- Department of Health and Human Services
  - AZ Rev Stat § 36-1161 (2015)
  - **Poison Prevention**
  - **Data Collection**
  - **Education**
  - Management of Poisoned Persons
  - Drug Information Services
- Staff Members
  - Medical Director Mazda Shirazi
  - Managing Director Steven Dudley
  - Clinical Education Director Geoffrey Smelski
  - Mother to Baby Director Chris Stallman
  - Operations Manager Alex Jasensky
  - Specialists in Poisoning Information
  - Public Health Educators
  - Toxicology Fellowship
  - Pharmacist Internship

# The Conflict Zone

- Pima 63.0% (n = 363)
- Cochise 10.6% (n = 61)
- Santa Cruz 3.7% (n = 21)



# Epidemiology

- Typical Hospital Charges Exceed \$100,000
- We Estimate that 1/3 or More of Patients are Experiencing Psychiatric Sequelae Related to the Rattlesnake Envenomation
- Preventing Rattlesnake Encounters is an Undervalued Aspect of Public Safety

## • Demographics

- Male Sex 62.0%
- Unaware of Snake 83.0%
- Lower Extremity 55.4%

## • Encounter Circumstances

- Residential Property 59.0%
- 4:00pm – 10:00pm 50.5%
- Summer Months 47.2%

## • Persistent Physical Disability

- 7 Days 86.3%
- 14 Days 65.3%
- 90 Days 26.2%
- 180 Days 8.2%



# People and snakes living together, mass hysteria!

- Snake removal to mitigate immediate conflict
- Develop measures to focus on prevention of conflict
- Conduct research on temporal microhabitat use in urban zones
- Front-row seat to the overall situation of rattlesnakes and people being in the same space





# Researching Snake-Human Conflict in Areas of Urban Expansion

- Snake relocation = mass data collection
- Research to better understand snake activity within urban areas
- Improve understanding of the situation to develop preventative methods and messaging



# A better understanding of the situation:

## To kill or not to kill? Exploring normative beliefs and attitudes toward snakes

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## Unwanted residential wildlife: Evaluating social-ecological patterns for snake removals

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## Varied motivations for snake removals in a Desert City

Kelli L. Larson, Heather L. Bateman, Jeffrey A. G. Clark & Bryan Hughes

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## Twenty-five years of suspected rattlesnake encounters in Arizona

Hannah Nakamura, Thomas Maciulewicz, Jennifer Ramirez, Bryan Hughes, David R. Axon, Farshad Shirazi & Geoffrey Smelski

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To link to this article: <https://doi.org/10.1080/15563650.2024.2380439>

## Beyond the front yard: investigating environmental drivers of residential snake removals across two spatial scales in a desert city

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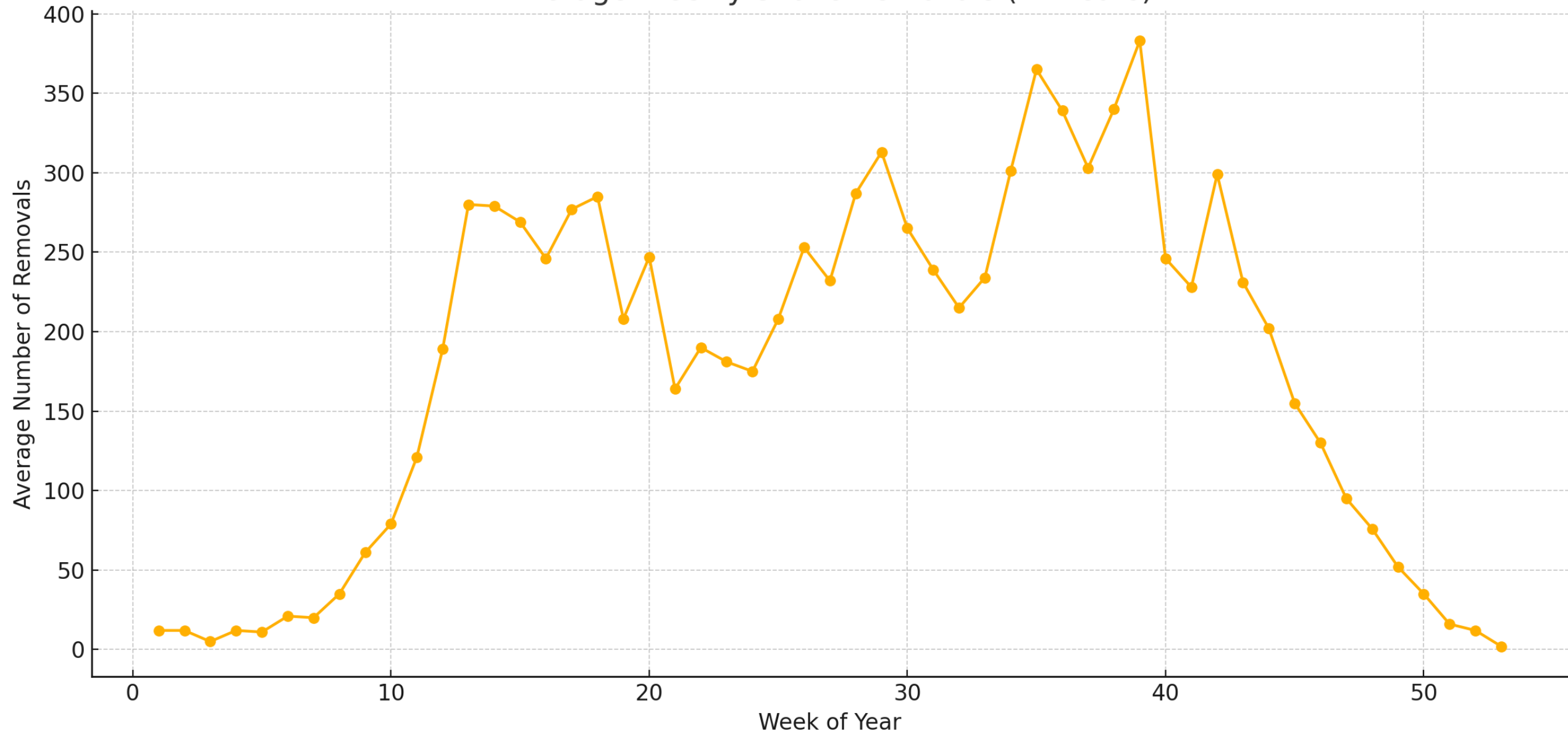




Rattlesnake  
behavior is not  
random.

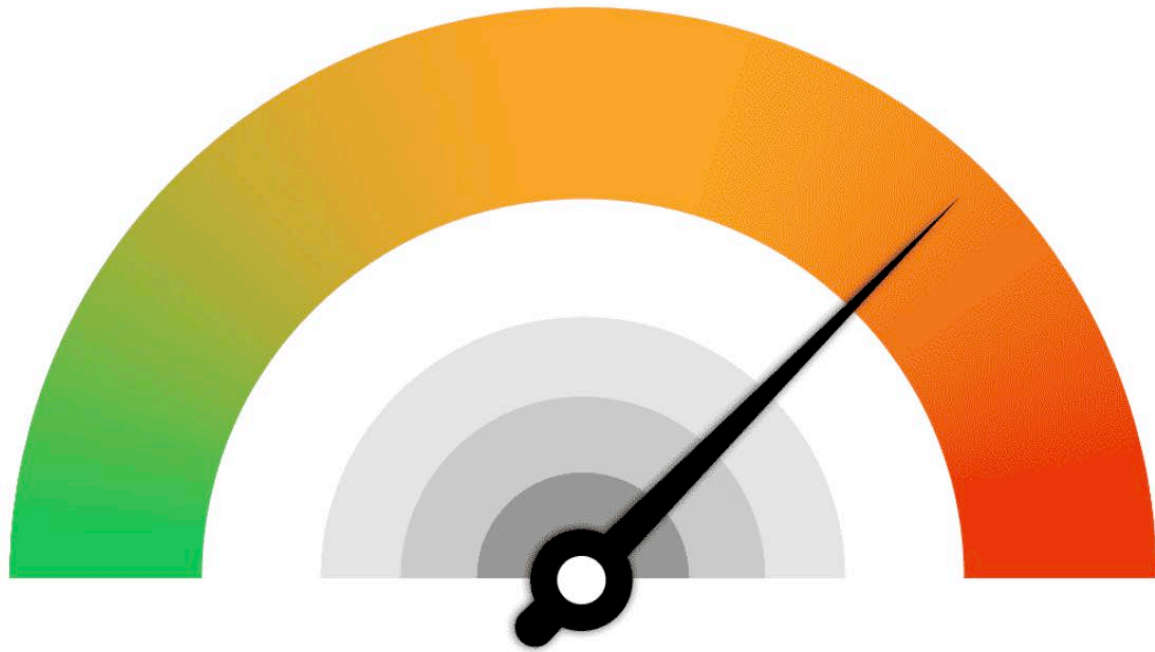


Average Weekly Snake Removals (All Years)



**Rattlesnake conflict may be preventable in many cases.**

# Snake Activity Forecast for 05/12/25



Rattlesnake activity is **Very high**

22 snake removal calls reported in the past 48 hours. A rattlesnake encounter is a likelihood during outdoor activities, especially in the early morning and just before and after dark. Exercise extreme caution while gardening or working outdoors. Be sure to wear shoes and use a flashlight outdoors and in the garage.\*

Calls in last month: 242

Calls in last week: 64

Calls in last 24 hours: 3

**Rattlesnake conflict may be preventable in many cases.**



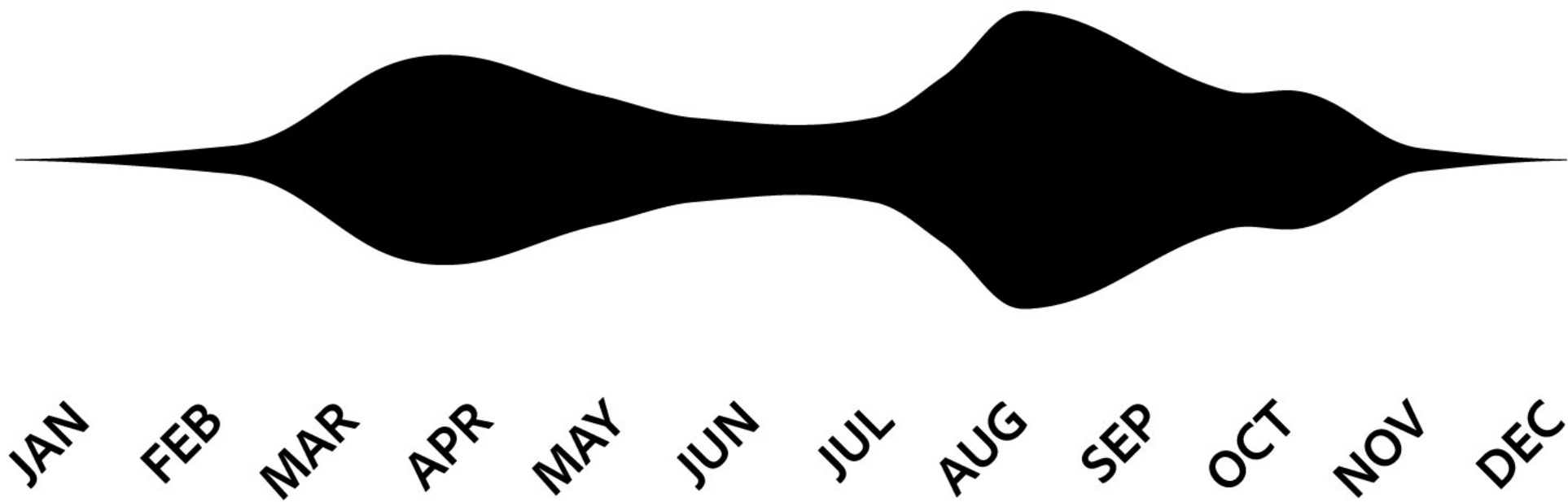
## Snake behavior conflict



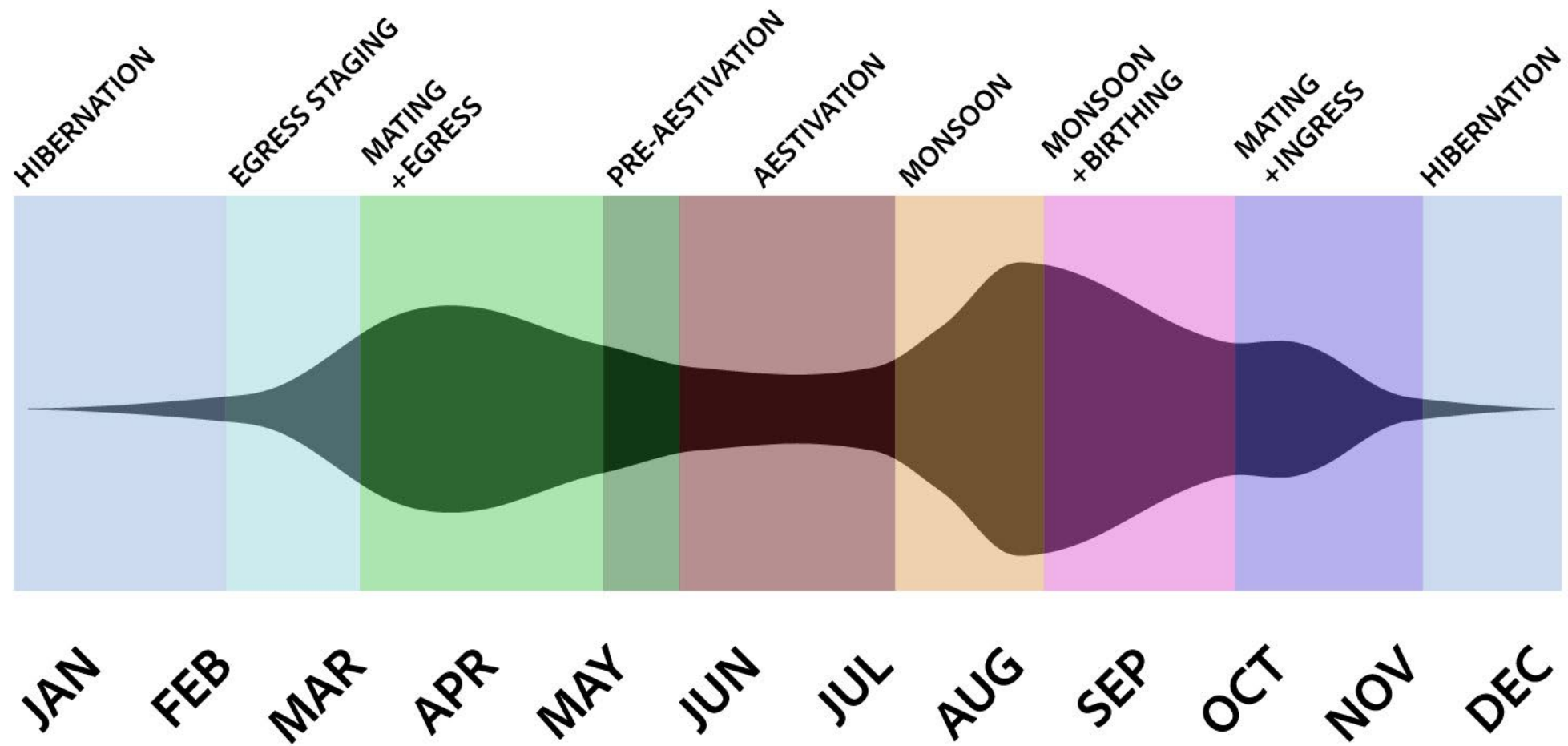
## Human behavior conflict

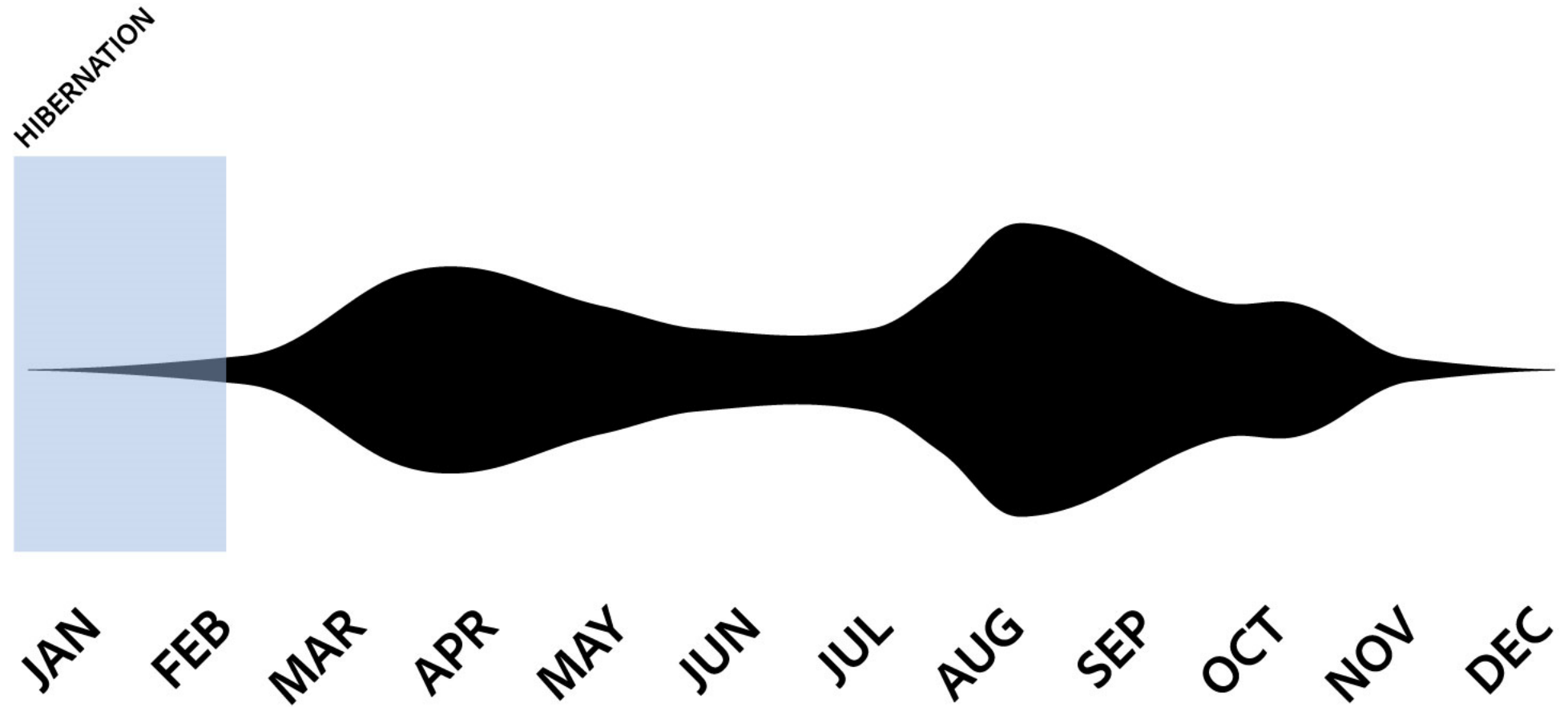






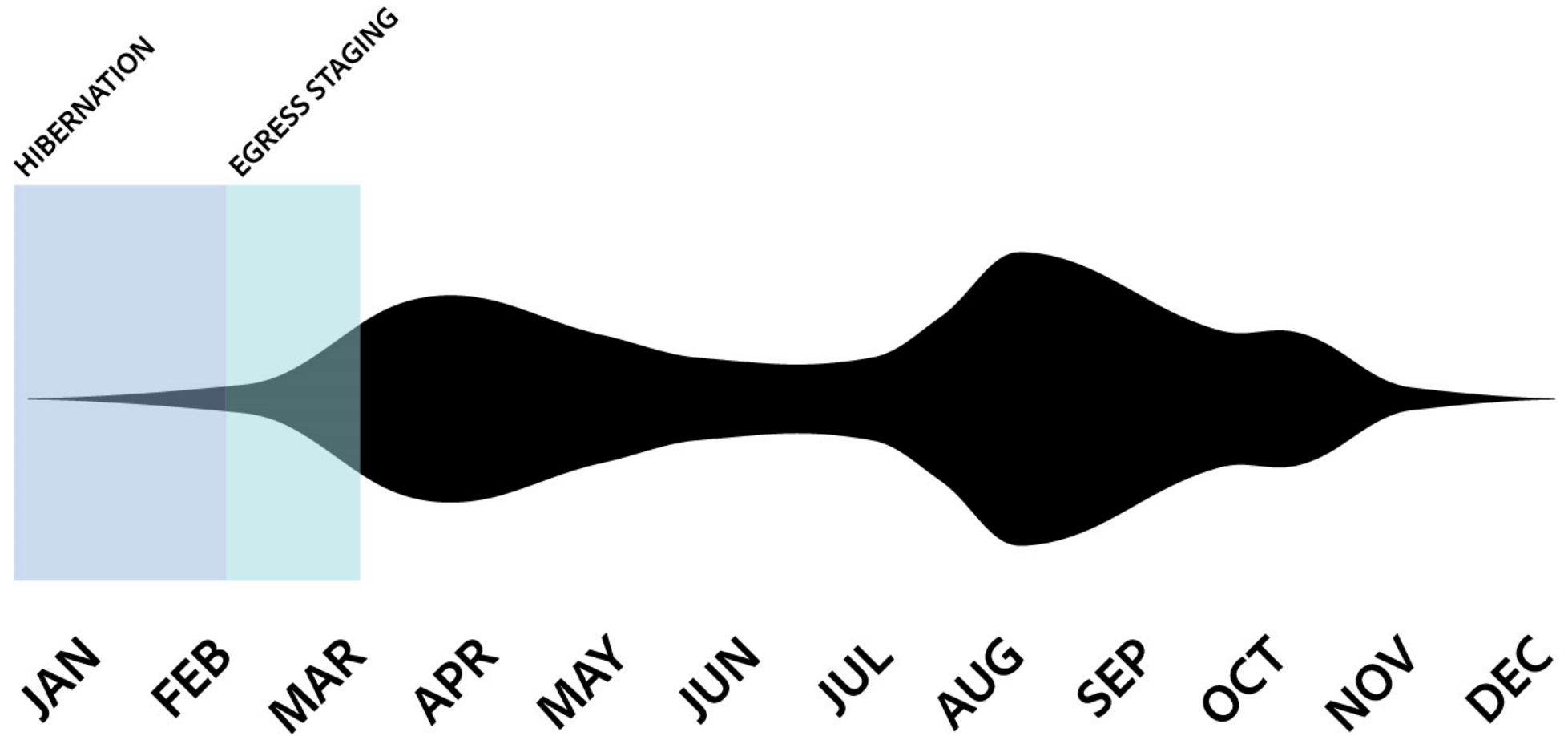




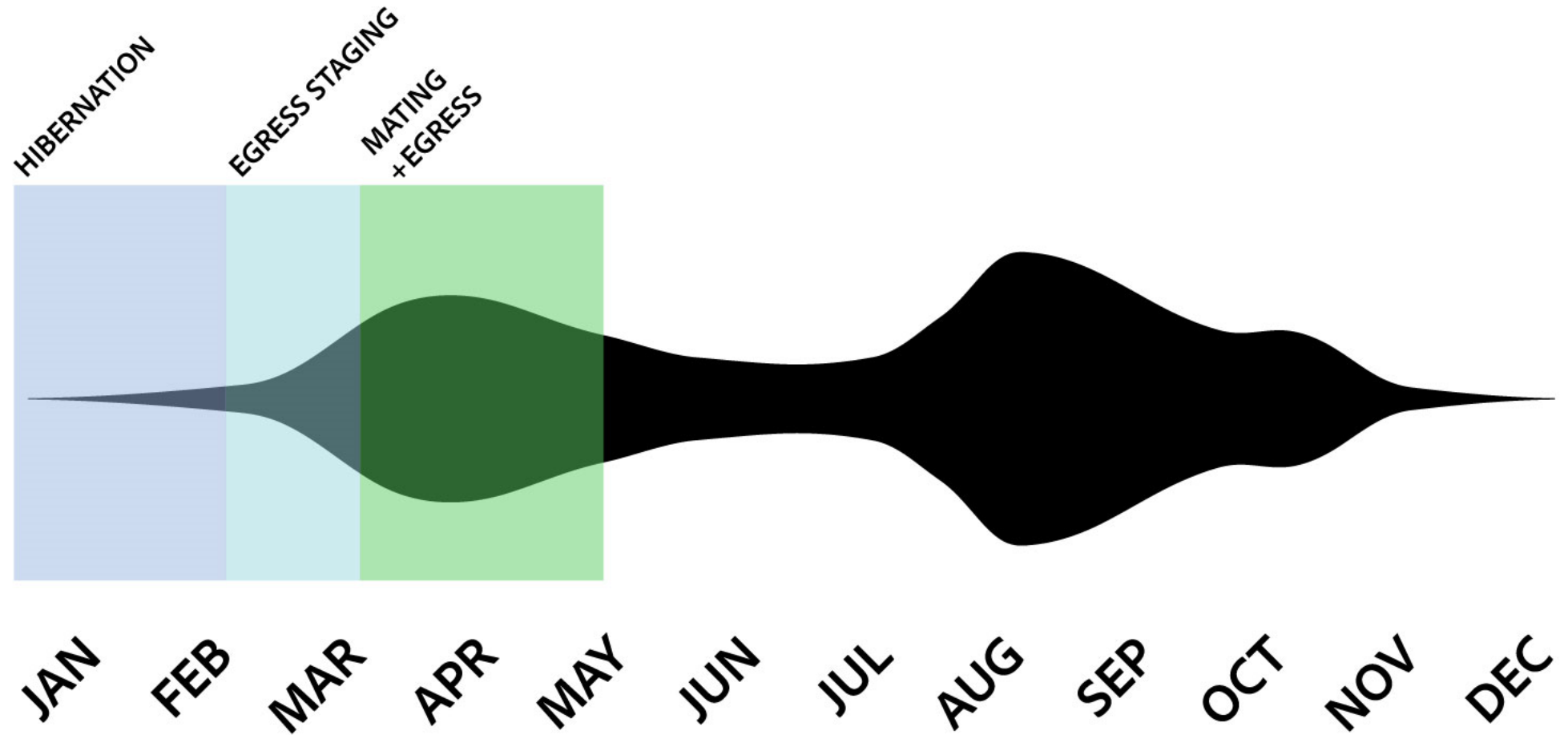


**HIBERNATION: MOSTLY HIDDEN, WITH “DISCOVERED” SNAKES  
ENDS ~ TEMPERATURES STABILIZE IN >50°F**

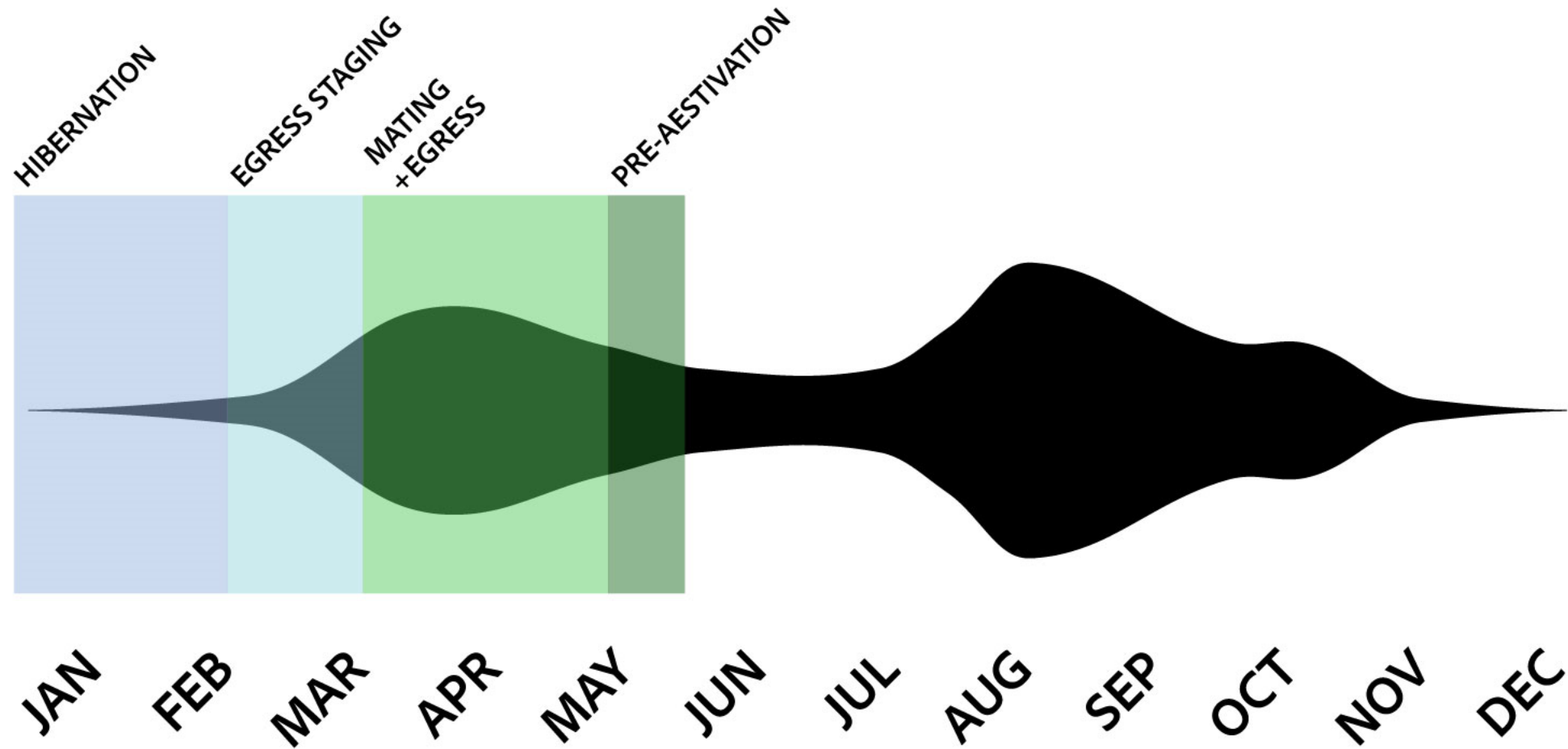




**EGRESS STAGING: ENCOUNTERS IN CLOSE PROXIMITY TO WINTER DENS  
OFTEN GARAGES, UNDER POOL EQUIPMENT, OLD SHEDS, ETC.**

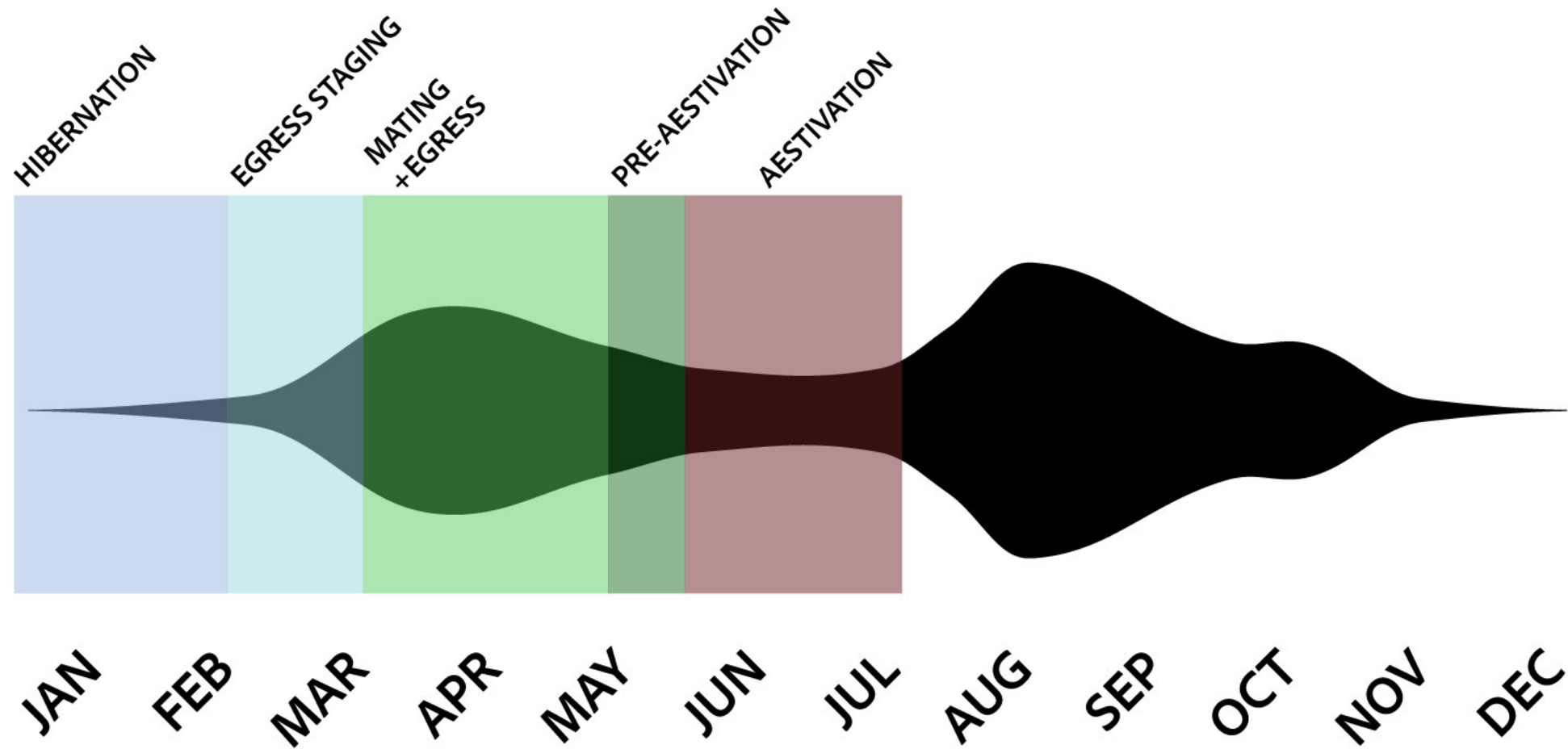


**MATING AND EGRESS: HIGH ACTIVITY, PEAKING IN LATE AFTERNOON**  
**MOST ENCOUNTERS ARE MALE RATTLESNAKES, IN MATE-SEARCHING**

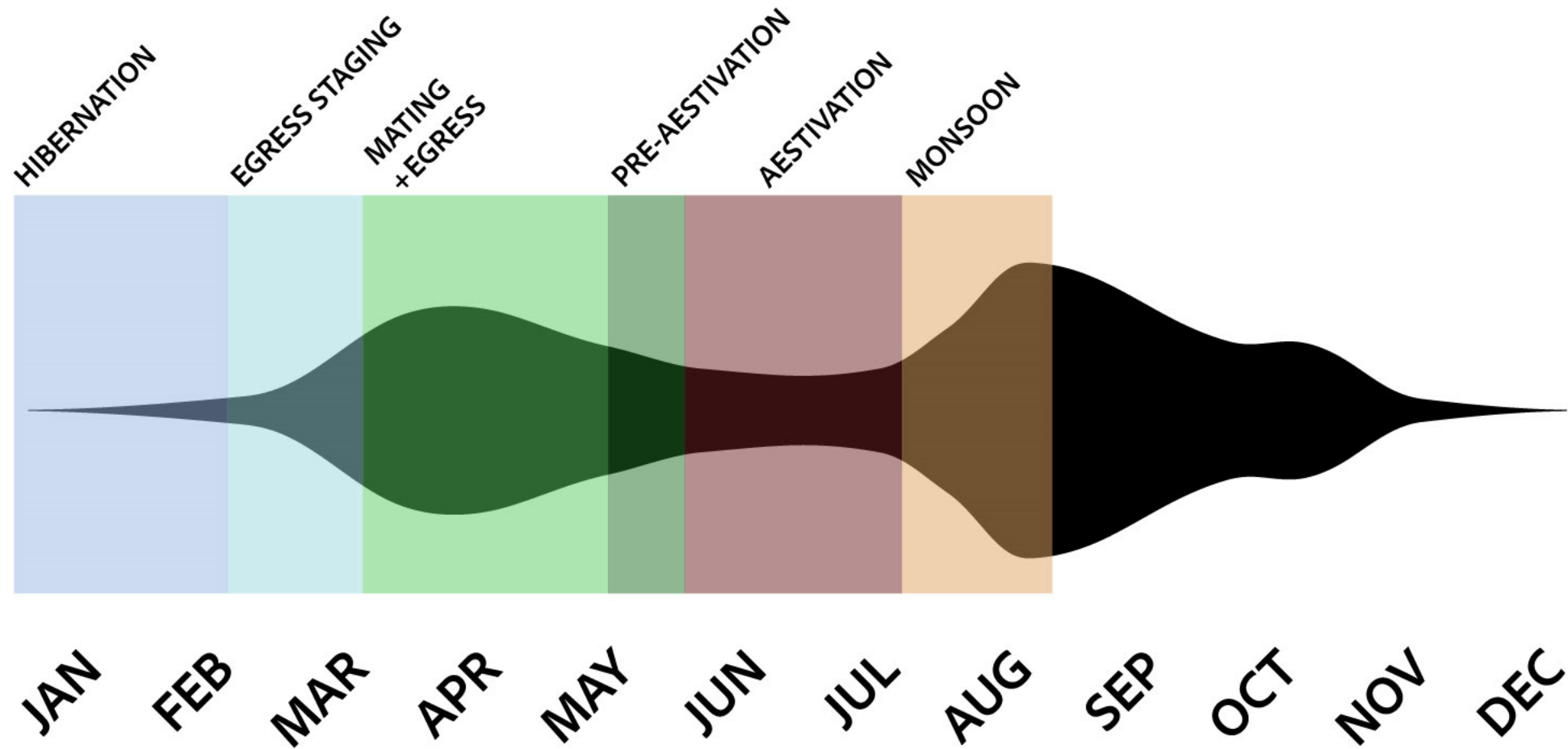


**PRE-AESTIVATION: GENERAL MOVEMENT TO COOL AREAS, PRIMARILY NOCTURNAL ACTIVITY BEGINS, WITH ENCOUNTERS EARLY MORNING OR DUSK**

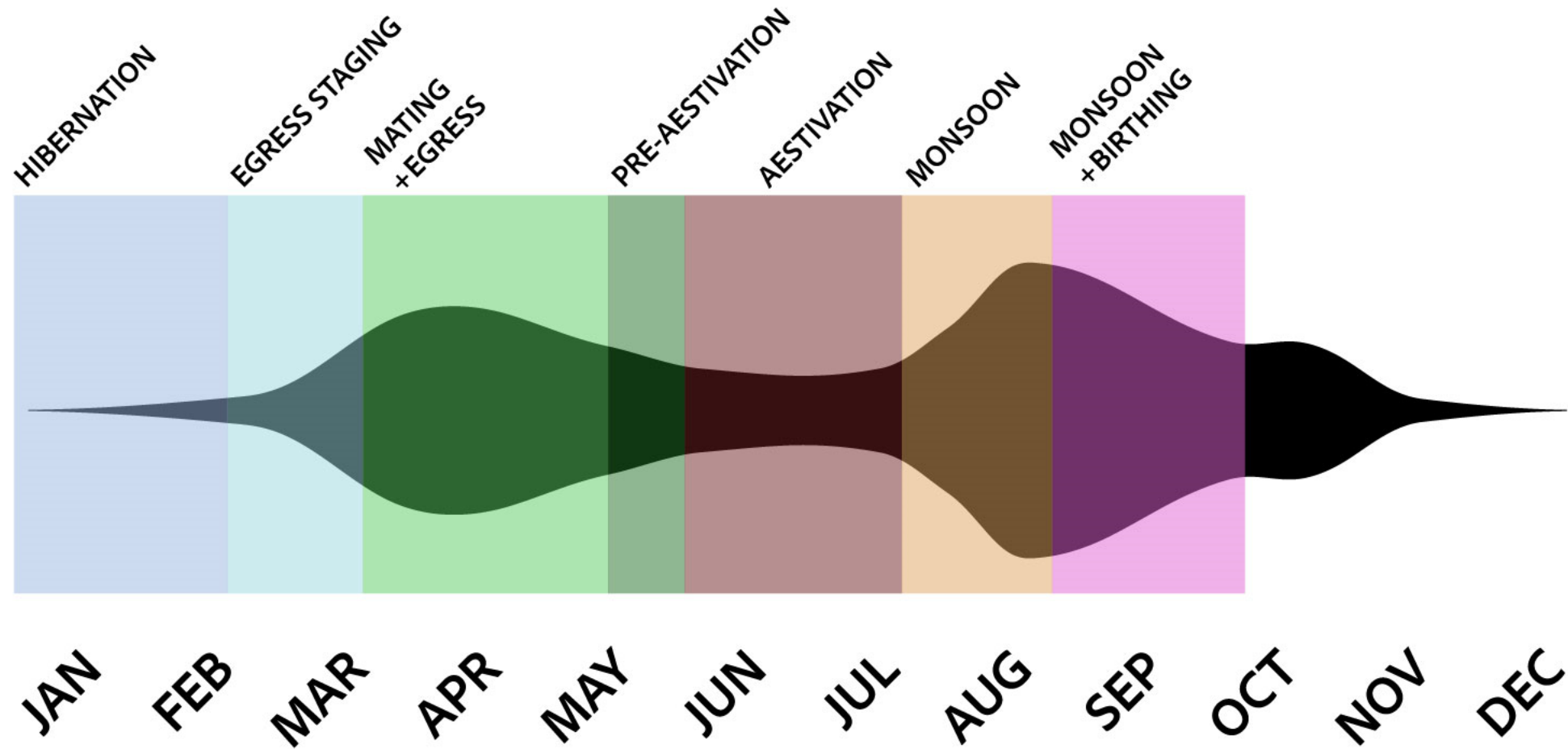




**AESTIVATION: HIDING AWAY IN SPECIFIC, HIGH-FIDELITY SITES TO AVOID HEAT AND MOISTURE LOSS, MOST ENCOUNTERS “DISCOVERED” OR ACCIDENTAL**

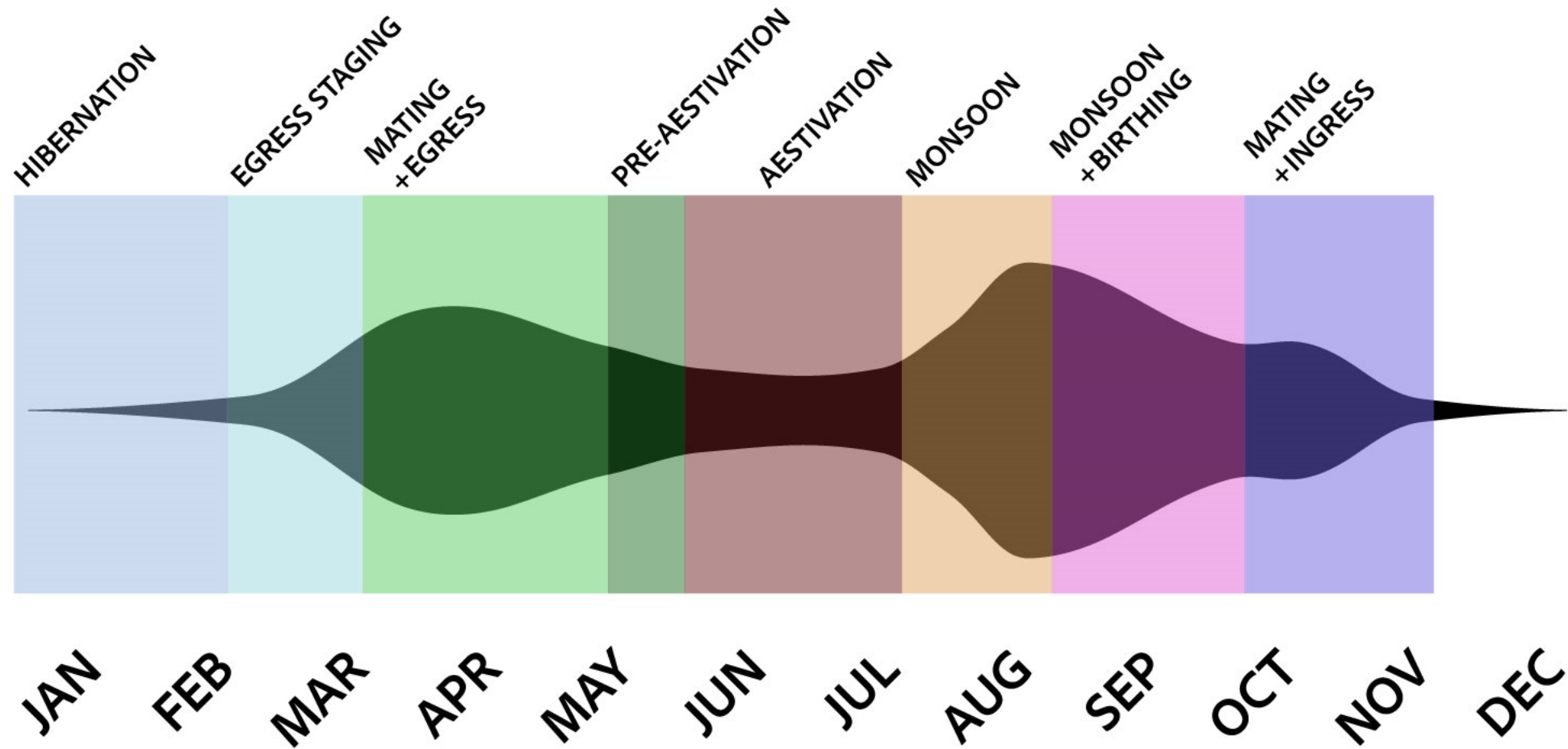


**MONSOON: BRIEF LULL, MASS-ECDYSIS AND PRE-PARTURITION, THEN  
EXPLOSIVE NOCTURNAL ACTIVITY, [THE FIRST BABY RATTLESNAKES APPEAR](#)**

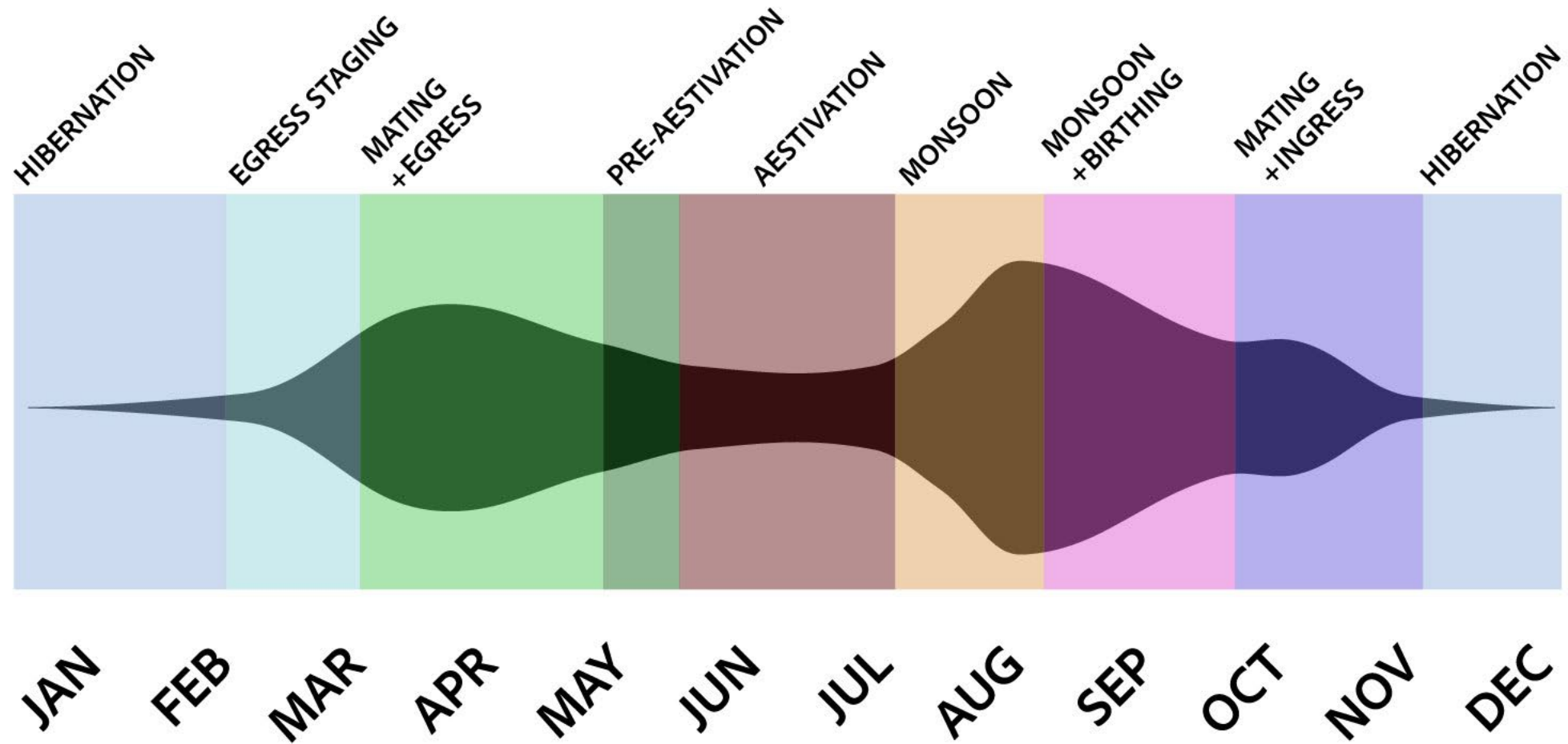


**MONSOON + BIRTHING: PEAK MOVEMENT, MOSTLY NOCTURNAL, LARGELY  
RANDOM PLACEMENT OF NEWBORN SNAKES, **HUNTING IS PRIORITY****





**MATING + INGRESS: SECOND MATING PERIOD, AND MOVING TOWARDS HIBERNATION SITES, **PEAK ACTIVITY JUST BEFORE AND AFTER DARK****



**HIBERNATION: DEEP COVER, LITTLE TO NO SURFACE ACTIVITY, “DISCOVERY” ENCOUNTERS, BUT INFREQUENT. RAIN EVENT SPIKES.**



Arizona Poison & Drug Information Center

April 15 at 1:42 PM · 🌐

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March and April mark the start of rattlesnake season in Arizona. With milder temperatures and mating season upon us, rattlesnake encounters are more likely. Additionally, as adult male rattlesnakes are active searching for females mates, rattlesnakes may be found in places that they normally would not be. Because of this, practicing safety habits is of the utmost importance to prevent rattlesnake bite.

Remember, the desert is home to rattlesnakes and other venomous critters. It is our responsibility to be aware of our surroundings to prevent a bite from happening. If you encounter a rattlesnake, remain distant from it and leave it alone. Rattlesnakes will only bite if they feel they are in danger or they are provoked. If you encounter a snake on your property, contact your local fire department or removal services to have the snake relocated.

#arizona #rattlesnake #rattlesnakebite #venom #envenomation #desert #reptile  
#desertcritters #crotalus #snake #spring #summer



**RATTLESNAKE SAFETY:**

**The Arizona Poison**

Be alert and aware of your

**Targeted  
communication to  
prevent specific  
conflict activity.**



# Targeted Messaging



## Special Populations Currently Being Investigated

- Occupational Exposures
- Homeless
- Migrants Crossing the Border
- Cognitively Impaired (Pediatric)

- **Children & Teenagers**
  - 4x More Likely 04:00pm – 10:00pm in Spring
  - At Home, Playing Outside
- **Working Age Adults**
  - Most Likely 10:00am – 04:00pm in Summer
  - Least Likely to be Bitten at Home
- **Older Adults (>65 yrs)**
  - 2.5x More Likely 04:00am – 10:00am in Summer
  - At Home, Gardening or Yard Work



# Questions?

