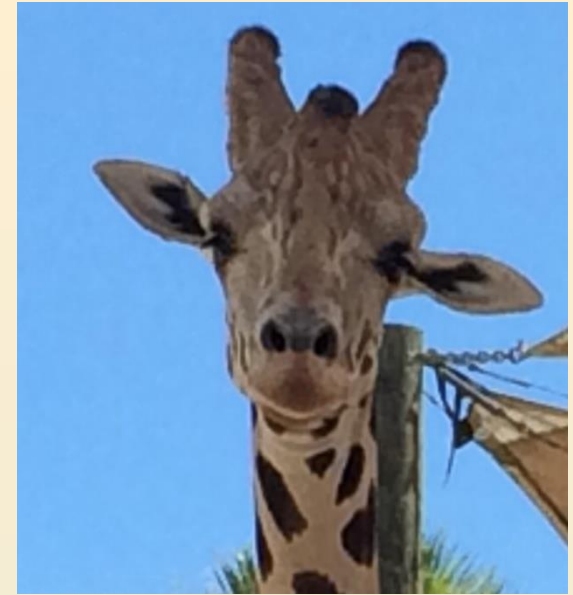


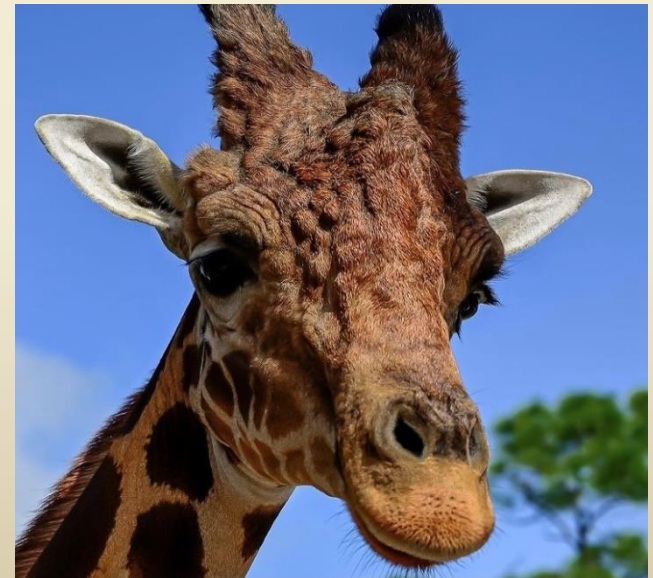
# The development and implementation of an anti-GnRF immunological product to reduce behavioral stress of 5.0 giraffe

**Presented by:** *Cindy Hall*  
*Animal Care Supervisor of Hoofstock & Primates*  
*Naples Zoo*





## The Bachelors





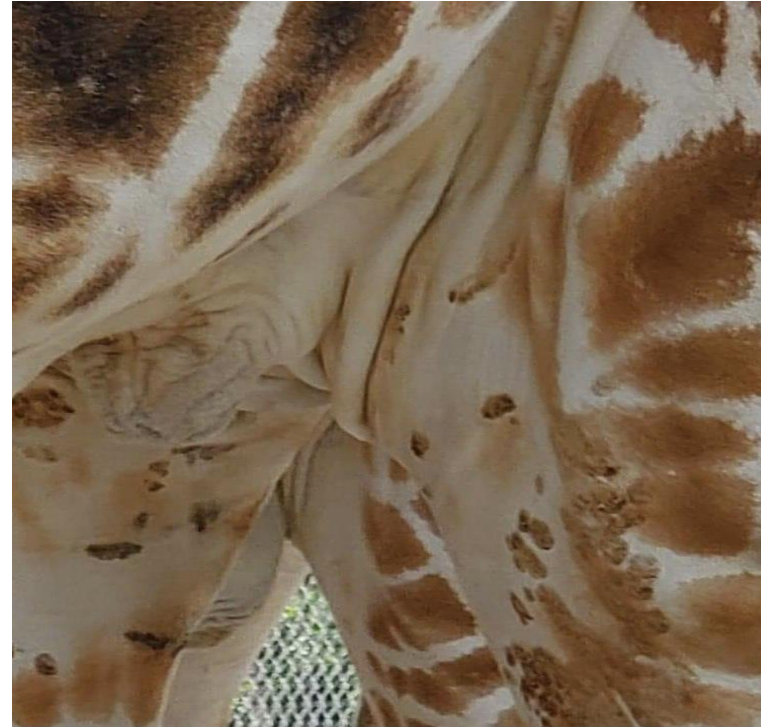
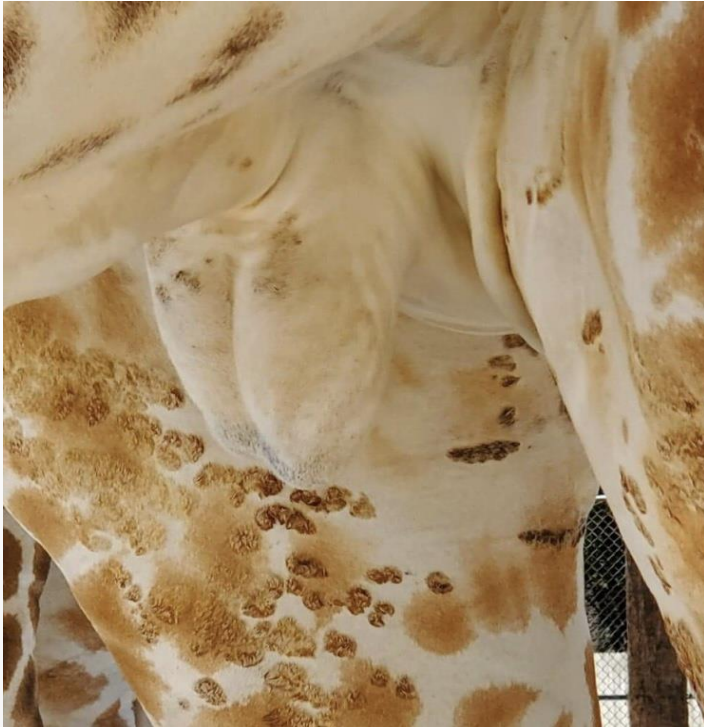
# What is an anti-GnRF product?

- Protein compound that works like an immunization that temporarily causes production of antibodies to neutralize the animals own GnRF.
- Suppresses testicular function.

## Things to consider:

- Which giraffe would receive the Improvest? Select individuals or the whole herd?
- How would we evaluate the influence of the product on the herd physically and socially?
- Method of administration- IM injection: Is this possible with our herd?
- Cost of product and data analysis- fecal samples would need to be sent out for sampling.

- Possible side effects of product
  - feminization
  - **reduced testicular size**
  - possible weight gain



# Charted Behaviors





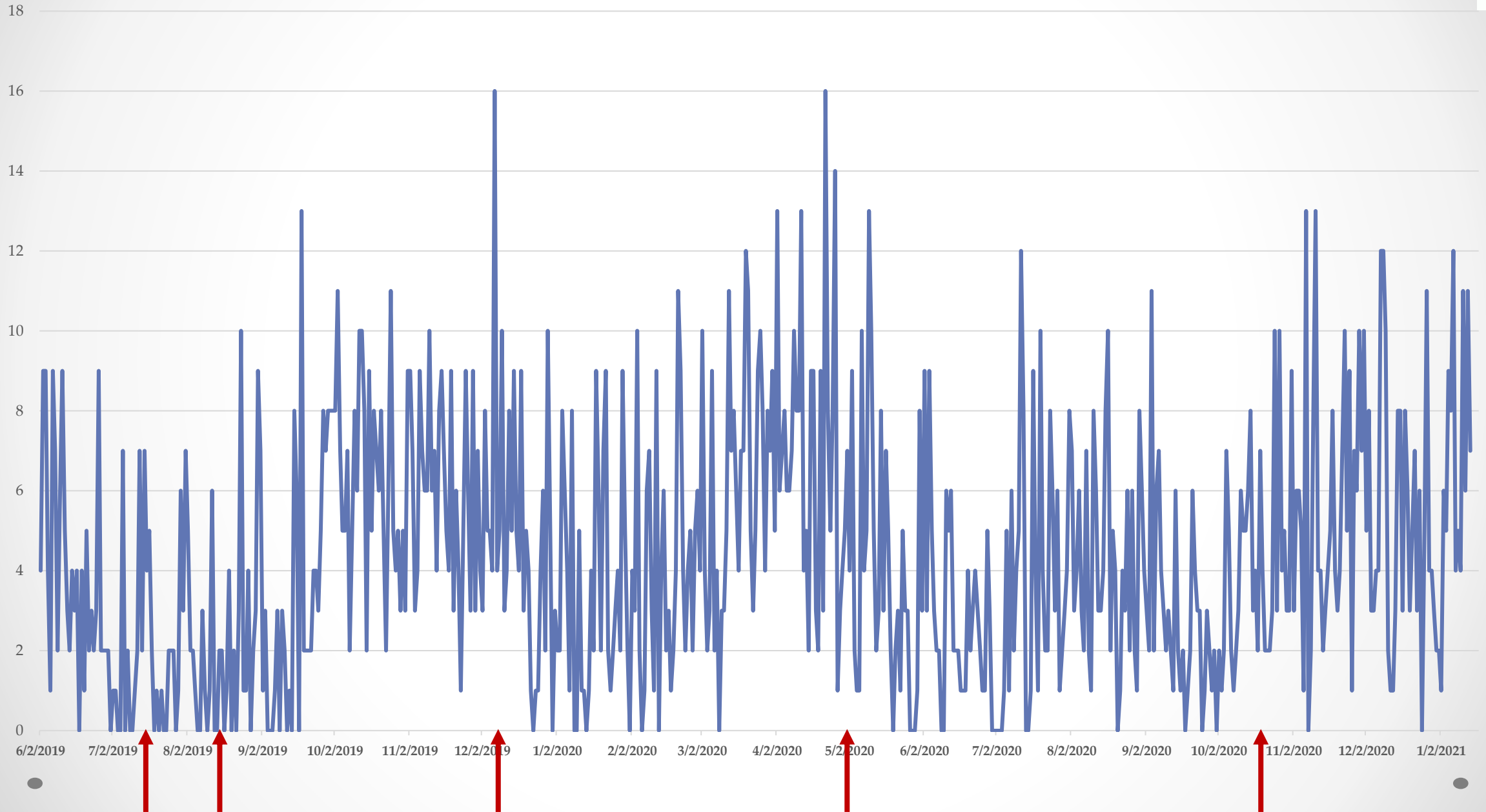


### Dates of Improvest injections:

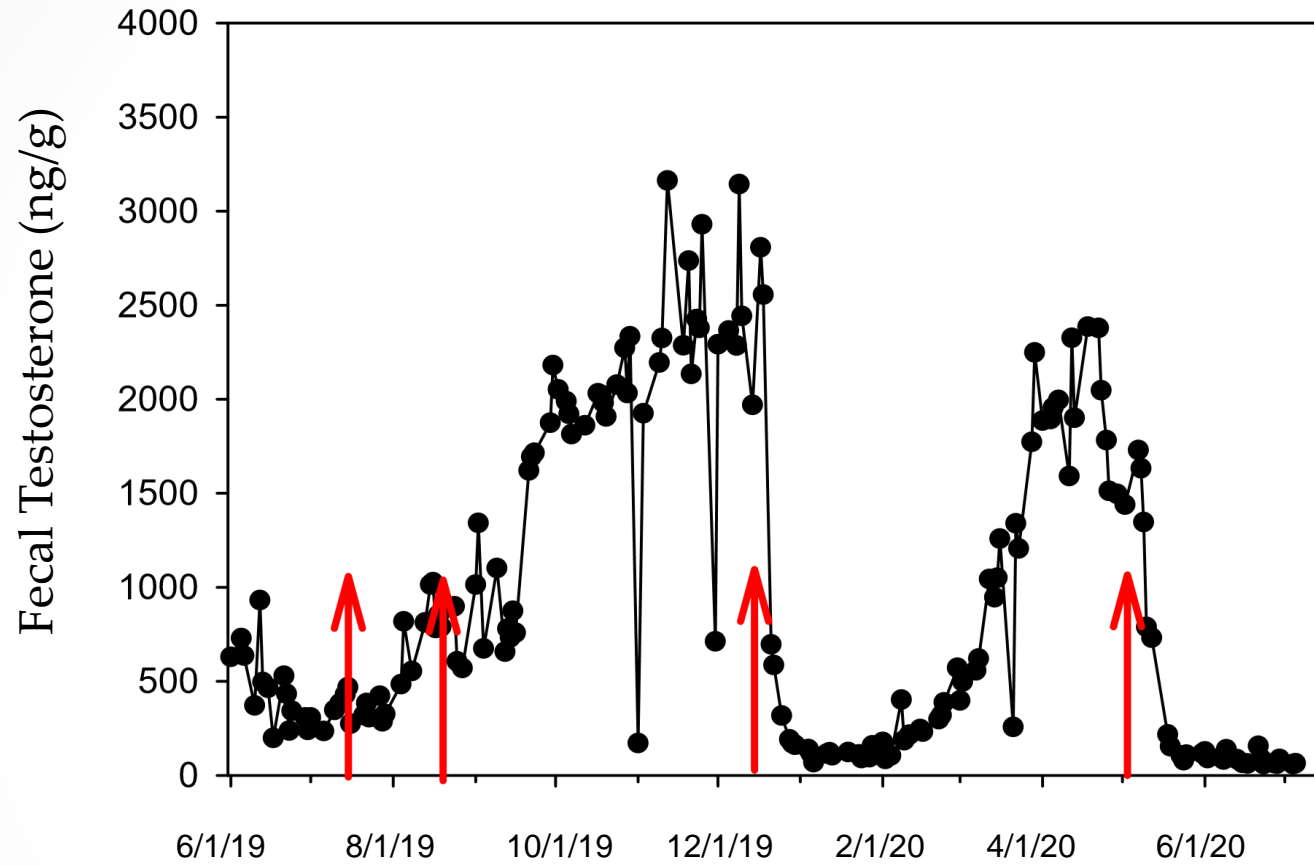
- July 18, 2019 – initial dose
- August 16, 2019- booster dose
- December 12, 2019
- May 2, 2020
- October 22, 2020



# Total Behavior Aggression Level Over Time For Bruehler

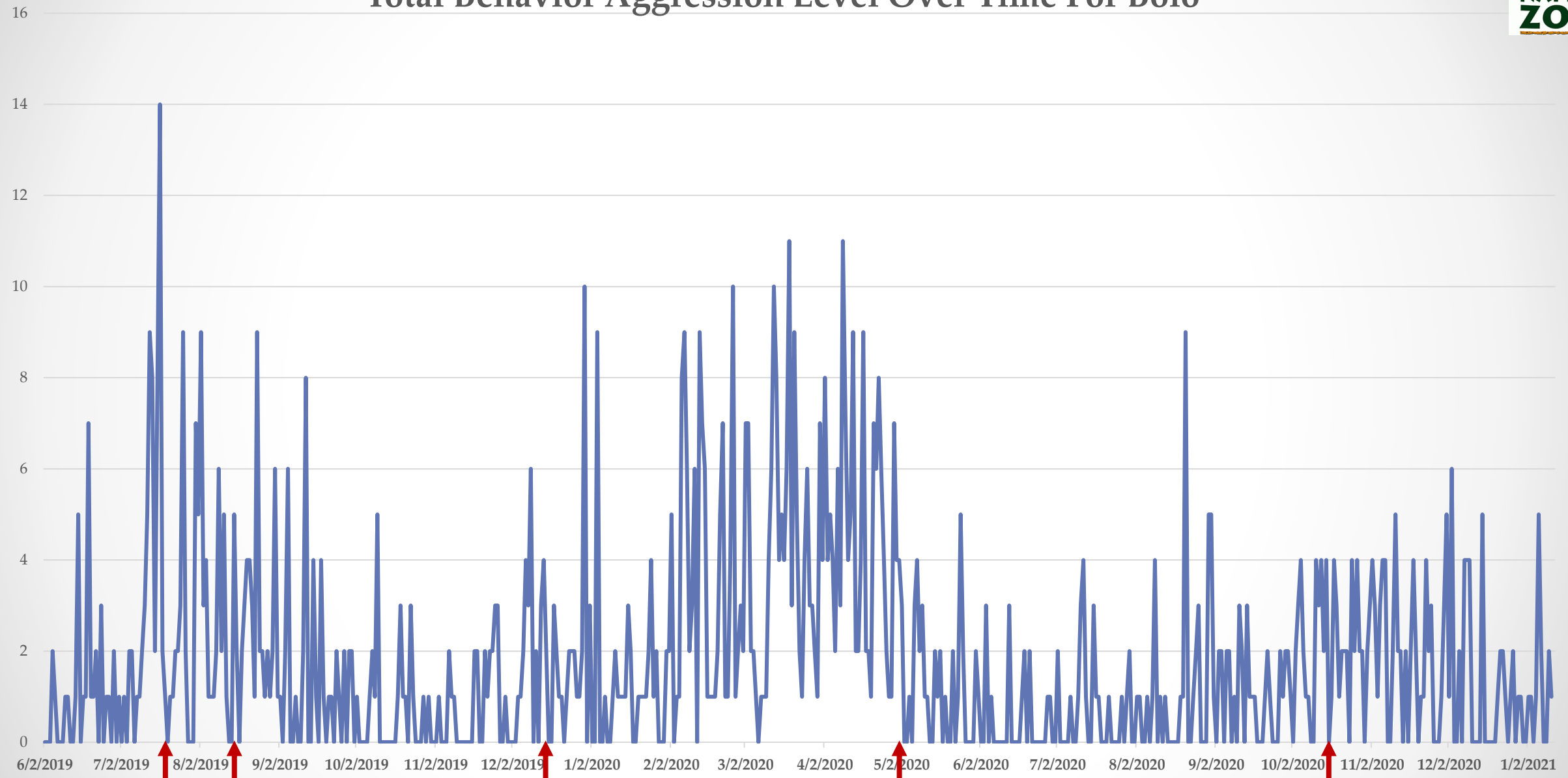


### Naples Zoo Bruehler

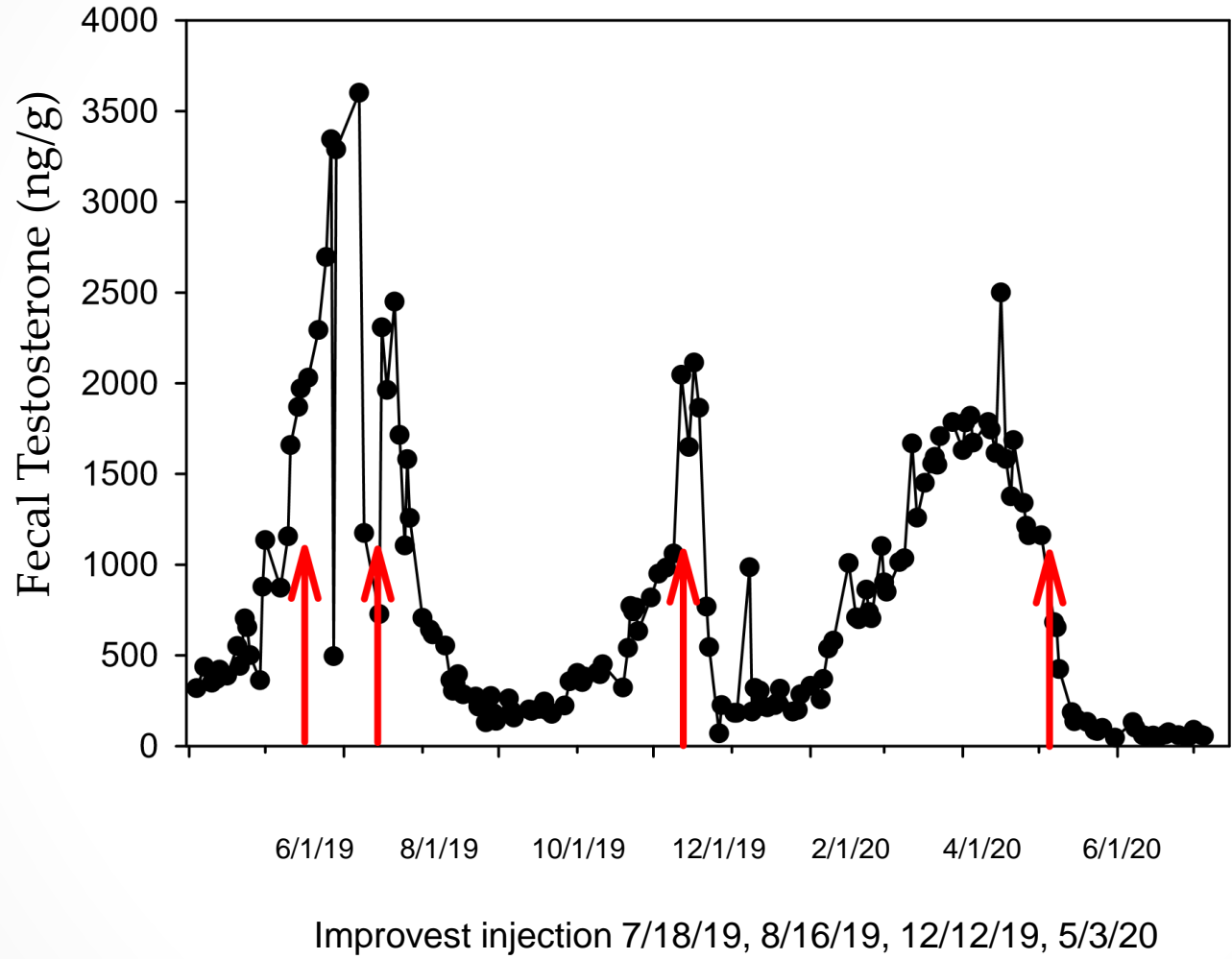


Improvest injection 7/18/19, 8/16/19, 12/12/19, 5/3/20

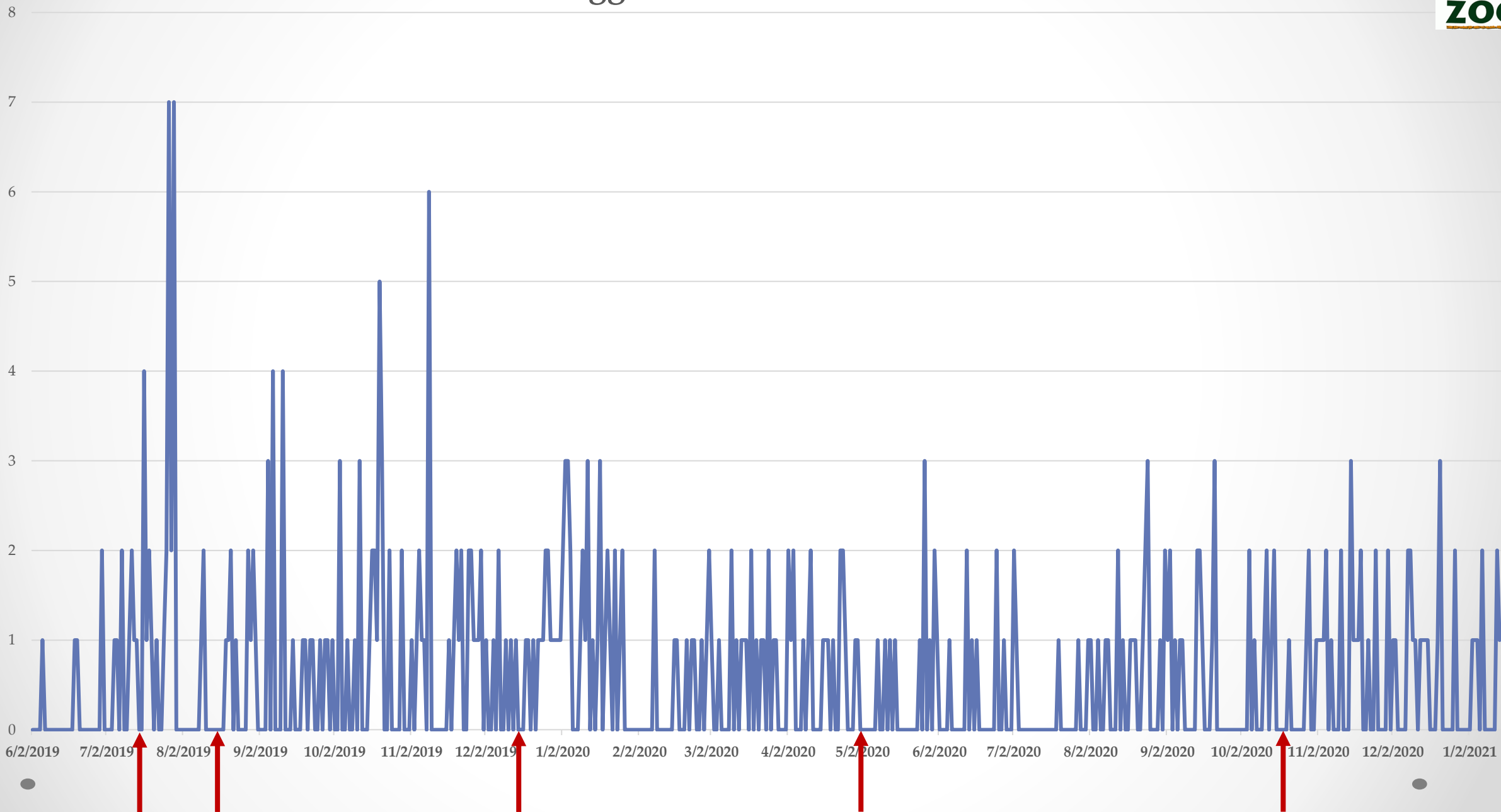
# Total Behavior Aggression Level Over Time For Bolo



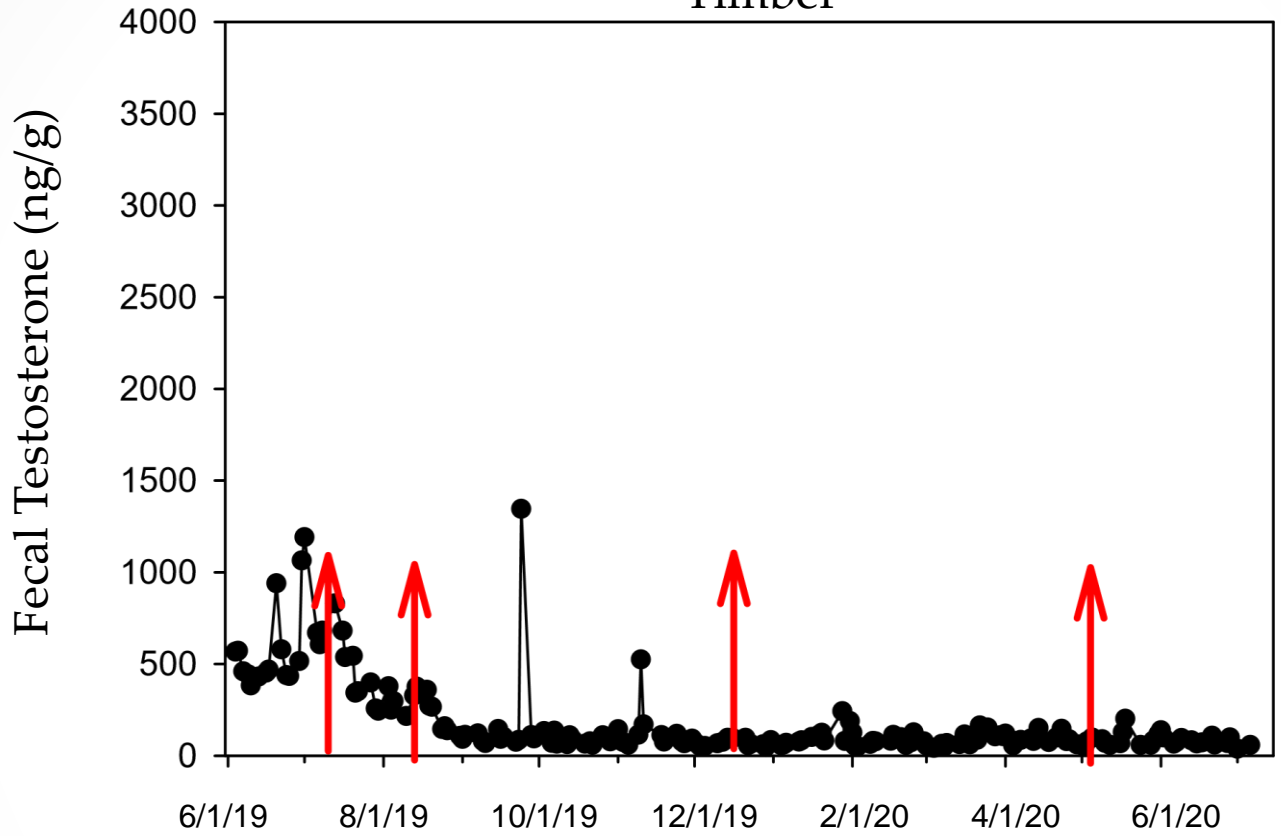
# Naples Zoo Bolo



# Total Behavior Aggression Level Over Time For Timber

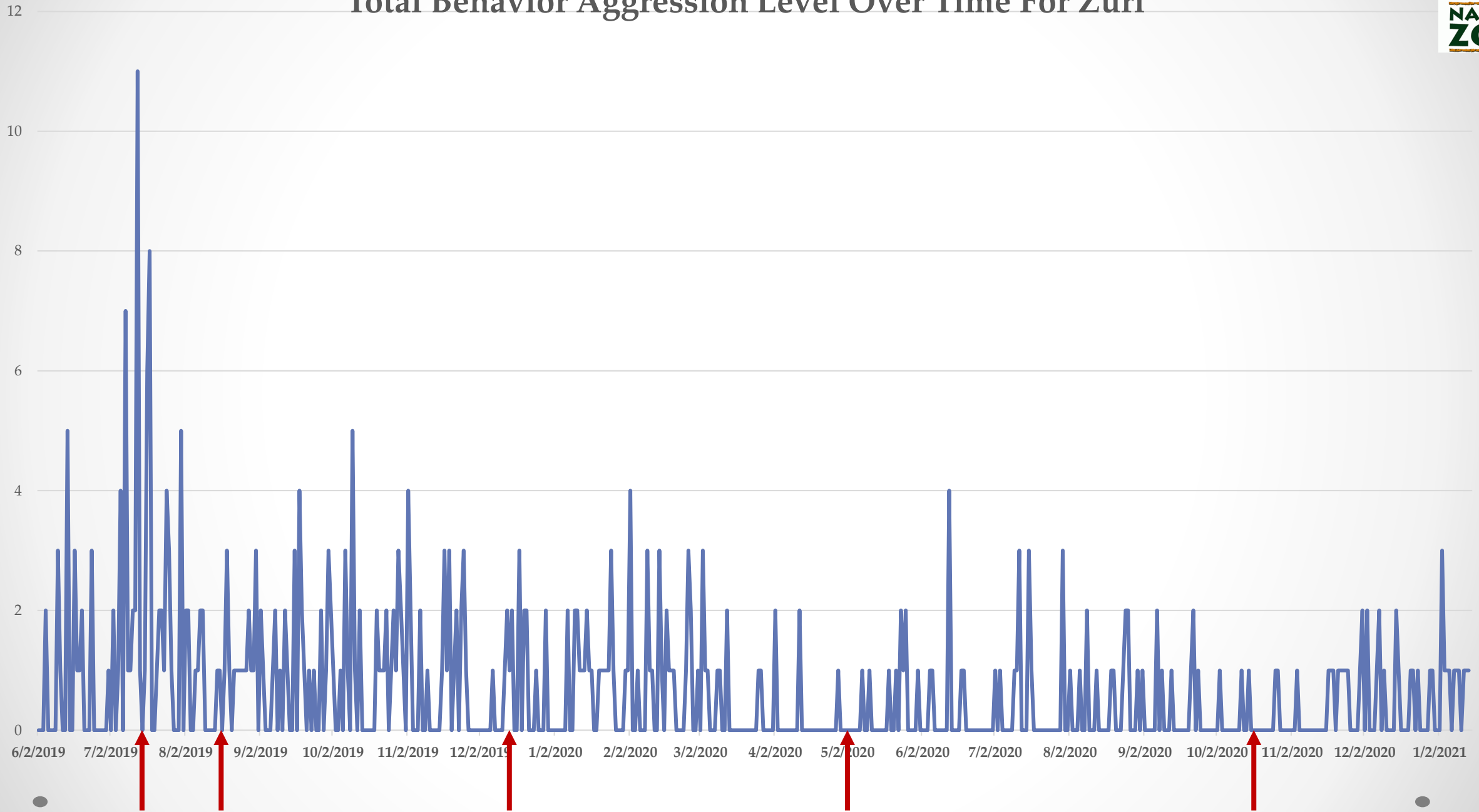


### Naples Zoo Timber



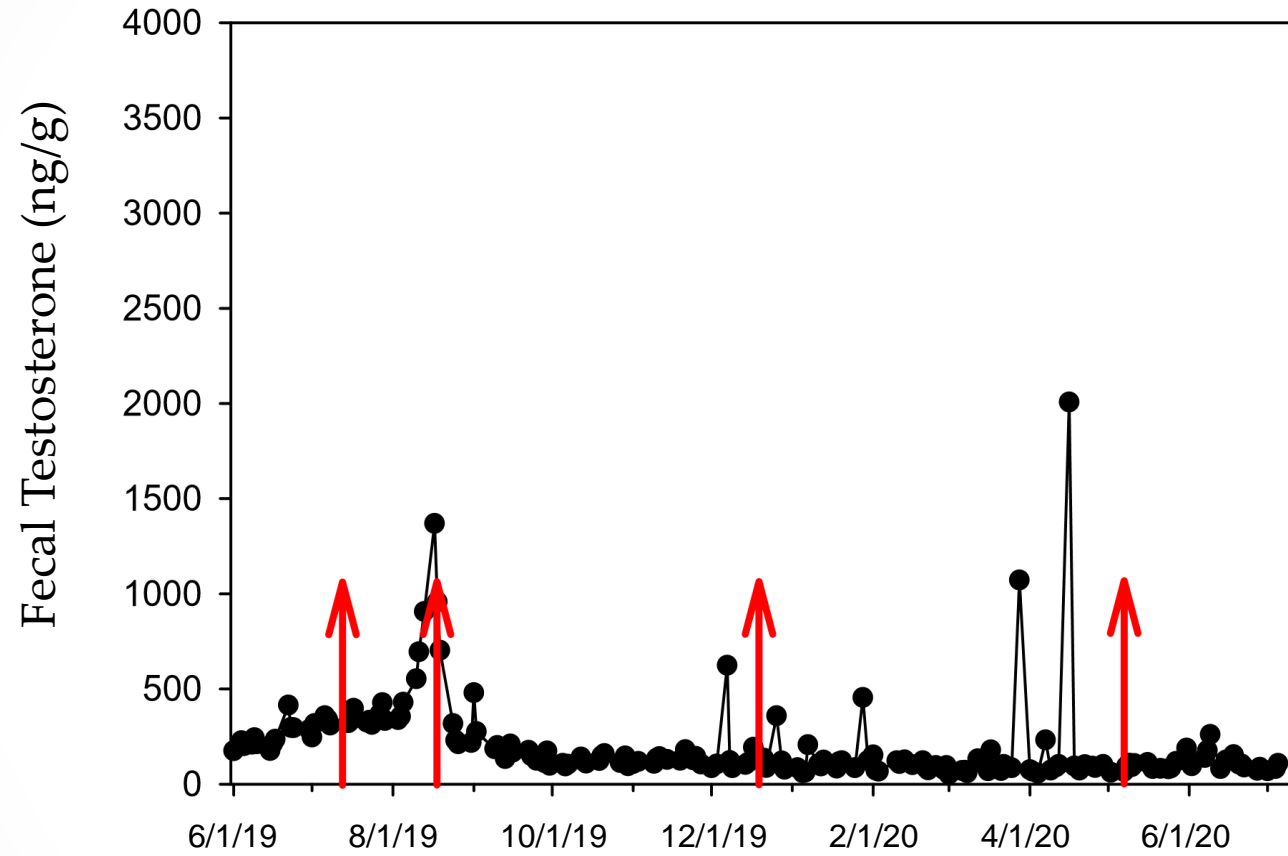
Improvest injection 7/18/19, 8/16/19, 12/12/19, 5/3/20

# Total Behavior Aggression Level Over Time For Zuri



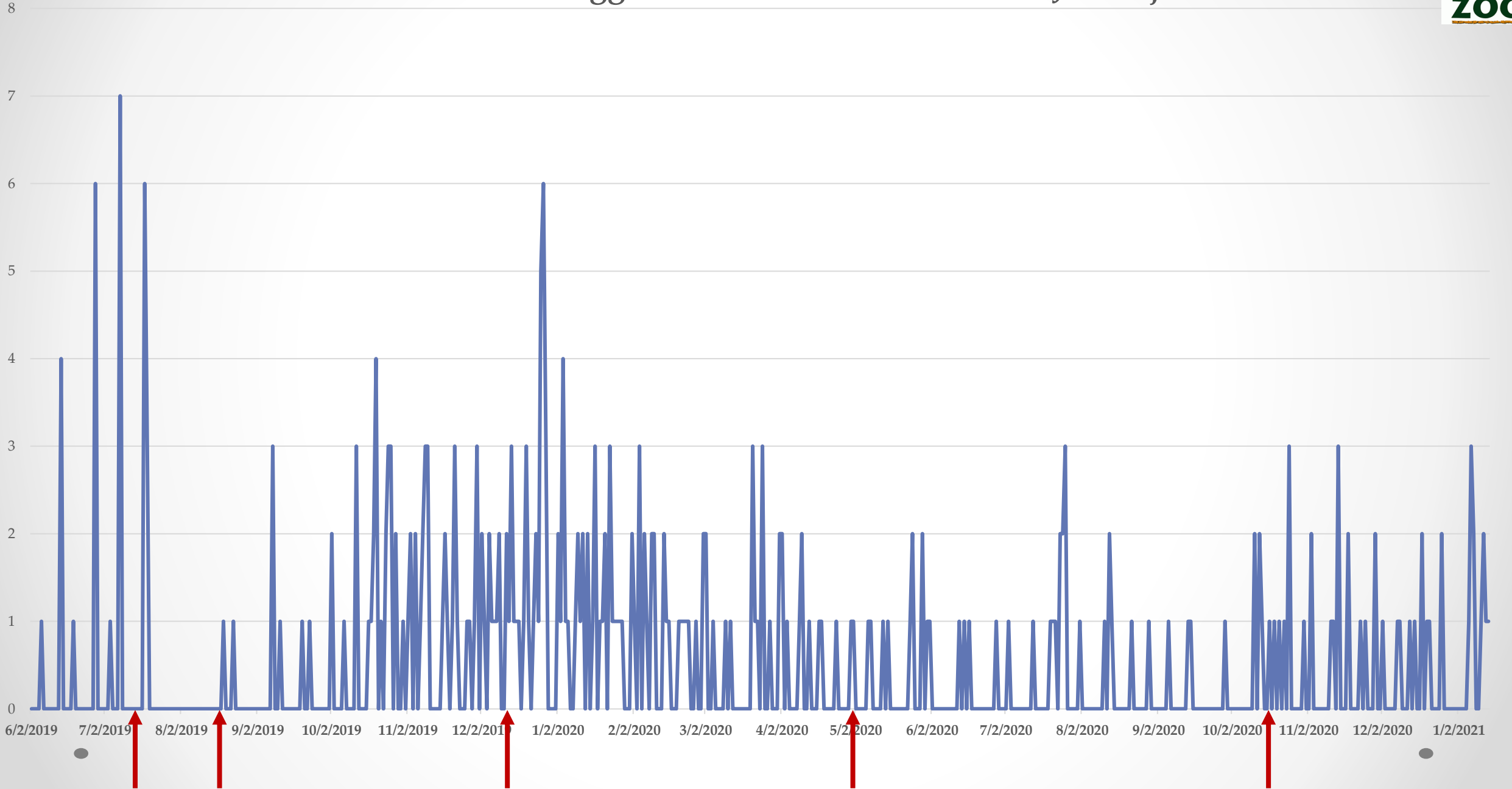


# Naples Zoo Zuri

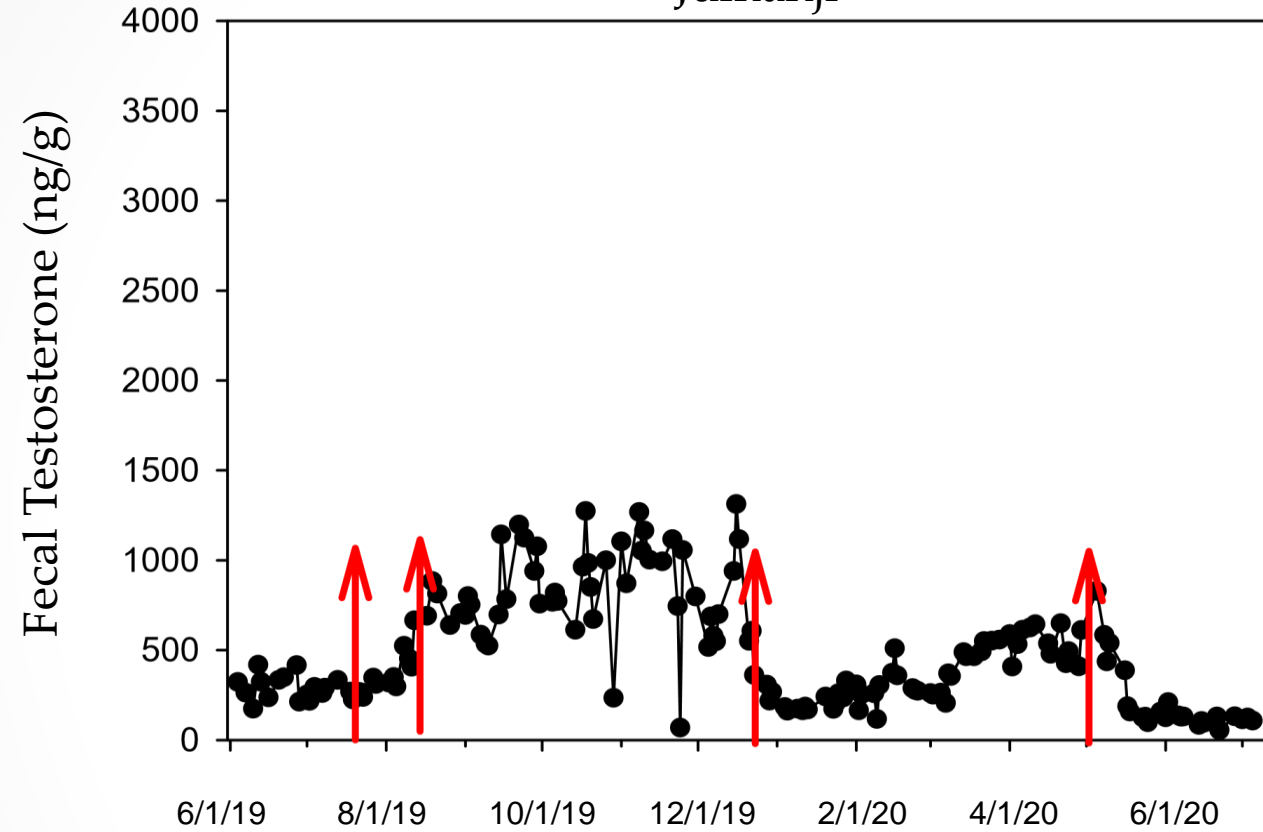


Improvest injection 7/18/19, 8/16/19, 12/12/19, 5/3/20

# Total Behavior Aggression Level Over Time For Jumanji



# Naples Zoo Jumanji



Improvest injection 7/18/19, 8/16/19, 12/12/19, 5/3/20



# Acknowledgements and Thanks to:

- **Zoetis**- for your support in this project.
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- **Naples Zoo Animal Care Team**- for your constant support and efforts towards the implementation of this protocol and the high standard of care that you continue to provide to our animals.
- **Cindy Watson, Naples Zoo Giraffe Keeper**- thank you for your dedication to this protocol, expertise in data collection, observation and training for voluntary medical care.

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