



Let the
BATtles
Begin!

Image modified from United States Navy & Aberdeen Bestiary via Wikimedia Commons / Public Domain

WELCOME TO MARCH MAMMAL MADNESS 2024! For over a decade we have been delving into the natural history and science of animal encounters, turning scholarly science into riveting stories. In coming weeks we will share in a journey across our world, and occasionally through time, in a celebration of animals, adaptations, ecosystems, and our coMMMunity.

You've researched the combatants, you've considered the habitats, made your picks, and now we are on the road to the Championship! March Mammal Madness features 65 species, but only one will triumph above the rest. Prepare yourselves for heartbreak, hilarity, and horror as fortunes and fates rise and fall, in glorious narratives of science. The tournament will bring you obscure science, cliffhangers, carnage, non-player characters, & SO MUCH MORE!

 This Issue: ♥ Sciening MMM
♥ Tournament Jokes ♥ Player Reach
♥ Wild Card Battle Information

Remember, March Mammal Madness simulations do not force the animals to **BATTLE** like Gladiators, but rather we contrive encounters where the animals arrive with their physical and *behavioral* traits. And those behavioral traits include adaptations to **AVOID** combat.

Fighting is **RISKY** for animals. Fights can cause immediate death, slow death from infection or starvation (if an injury interferes with hunting, foraging, or chewing). The more closely matched combatants are, the greater their risk of losing. Even the winner can be injured. Animals have adaptations to choose their battles wisely (Dröge et al 2017; Stankowich & Blumstein 2005).

AND everything takes energy— chasing prey, running away from predators, battling competitors— sometimes **A LOT OF ENERGY!**

And yes, for herbivores energy grows on trees, **BUT** the time for chewing & enzymes for digesting are finite. Also tooth enamel wears down.

Across many animal species, natural selection has favored animals whose traits enable them to smartly respond to the situation- with minds to weigh risks, benefits, & costs of a conflict,



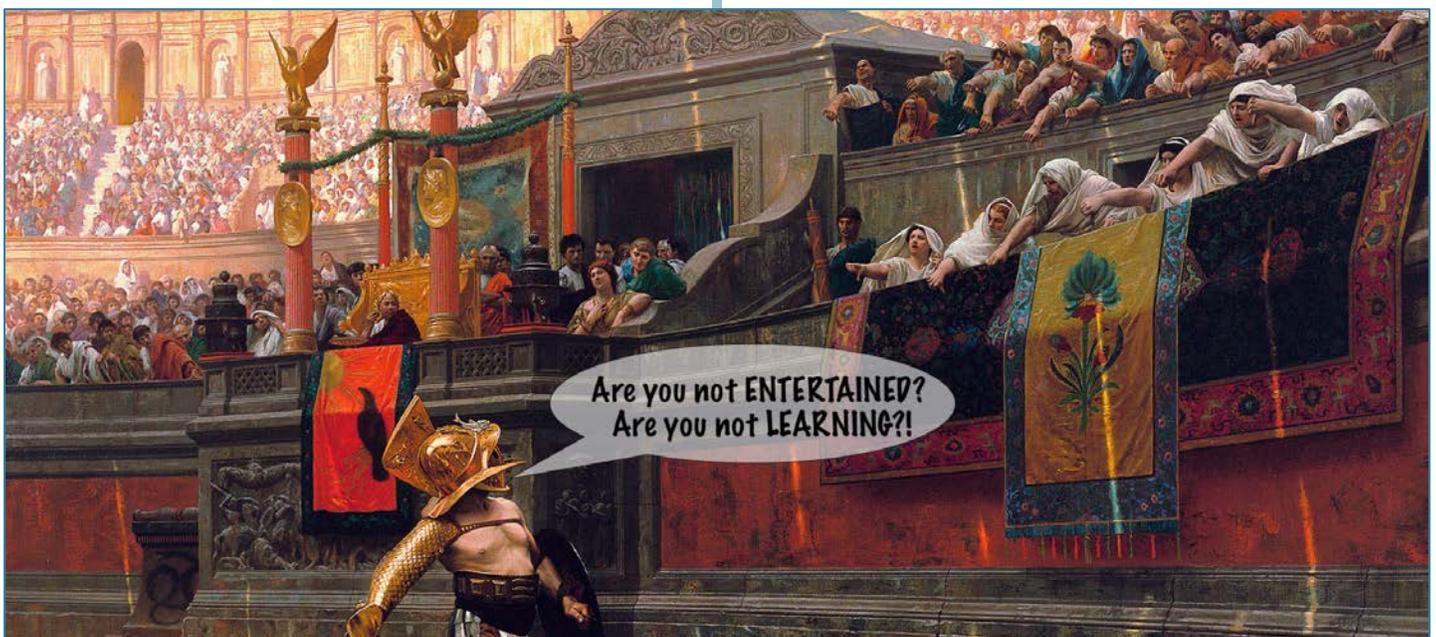
SCIENCING MMM

contest, challenge, or danger. Even most animals with spectacular weaponry will signal “You don’t want to mess with this” hoping the challenger or threat will back down before it gets to a fight (Palaoro & Peixoto 2021).

Natural selection has favored awesome adaptations for those who fight, flee, hide, peek, retreat, & sneak away to live another day (aka survive long enough to achieve reproductive success & thereby contribute traits to subsequent generations, iteratively over evolutionary timescales). Or in a well known idiom: *discretion is the better part of valor*; which Merriam-Webster dictionary describes as “better to be careful than to do something that is dangerous and unnecessary.”

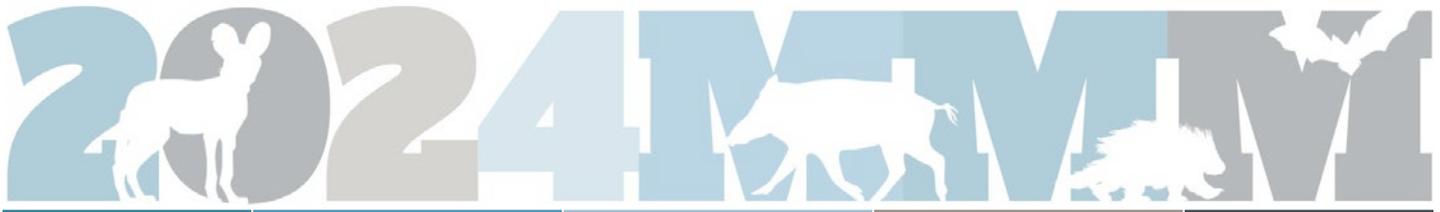
Sometimes, rarely, a much less likely combatant triumphs. This is why we write battles with unexpected, evidence-grounded plot twists. This is part of the suspense, surprise, and collective experience of March Mammal Madness.

So BUCKLE UP BUTTERCUPS, this is March Mammal Madness! Sometimes it's CARNAGE, sometimes it's BASIC, sometimes it's UPSET CITY where the **wrasse is green** and the **gulls are gritty**... But always, as we sleuth the B-sides & dusty deep tracks of natural history, March Mammal Madness is here, from tangled bank to misty mountains to salty shore, to trip the LIFE fantastic through the splendor of our natural world. **If you're learning, you're winning!**



Jean-Leon Gerome “Pollice Verso” (Thumbs Down) 1872 / Wikimedia Commons / Public Domain





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Stoat with Chaffinch / Bruno Liljefors 1888
Wikimedia Commons / Public Domain

COMMON TOURNAMENT JOKES

♥ **STOAT STATS** In 2016, Dr. Kristi Lewton narrated a battle between two mustelids (wolverine & stoat). To show the relative weight difference, she said 1 Wolverine = 67 stoats. Several nights later, Kristi reported that stoat conversions were in the scholarly literature since at least 1866, when natural historian George Allman described an otter shrew as “somewhat larger than a stoat” in the *Transactions of the Zoological Society of London*. Since then, the coMMMunity finds new and hilarious ways to convert measurements into units of stoat #StoatsAsMeasurement. See @stoatamatic

♥ **FIGS** In 2017, a battle encounter between spider monkey and binturong involved figs and accusations of narrative discrepancies of who first departed the field of battle. The controversy, dubbed “FIG-gate,” led to the first ever emergency MMM press conference. Since that time, figs are a delicious, nutritious sore spot of hilarity.

♥ **DURGAVITCHED** Since Dr. Lara Durgavich narrated octopus dissolving from lack of salinity when transported to a freshwater environment in 2018, particularly catastrophic and ignoble deaths are considered to be “Durgavitched.”

♥ **CARNAGE** Many battle encounters conclude with scientifically-accurate, seemingly undramatic withdrawals. Bloodthirsty players bemoan such outcomes, demanding carnage... until they get gruesome carnage and then switch to wails of “Not like this.” Botanists also mourn the rampant #PlantCarnage by herbivores.

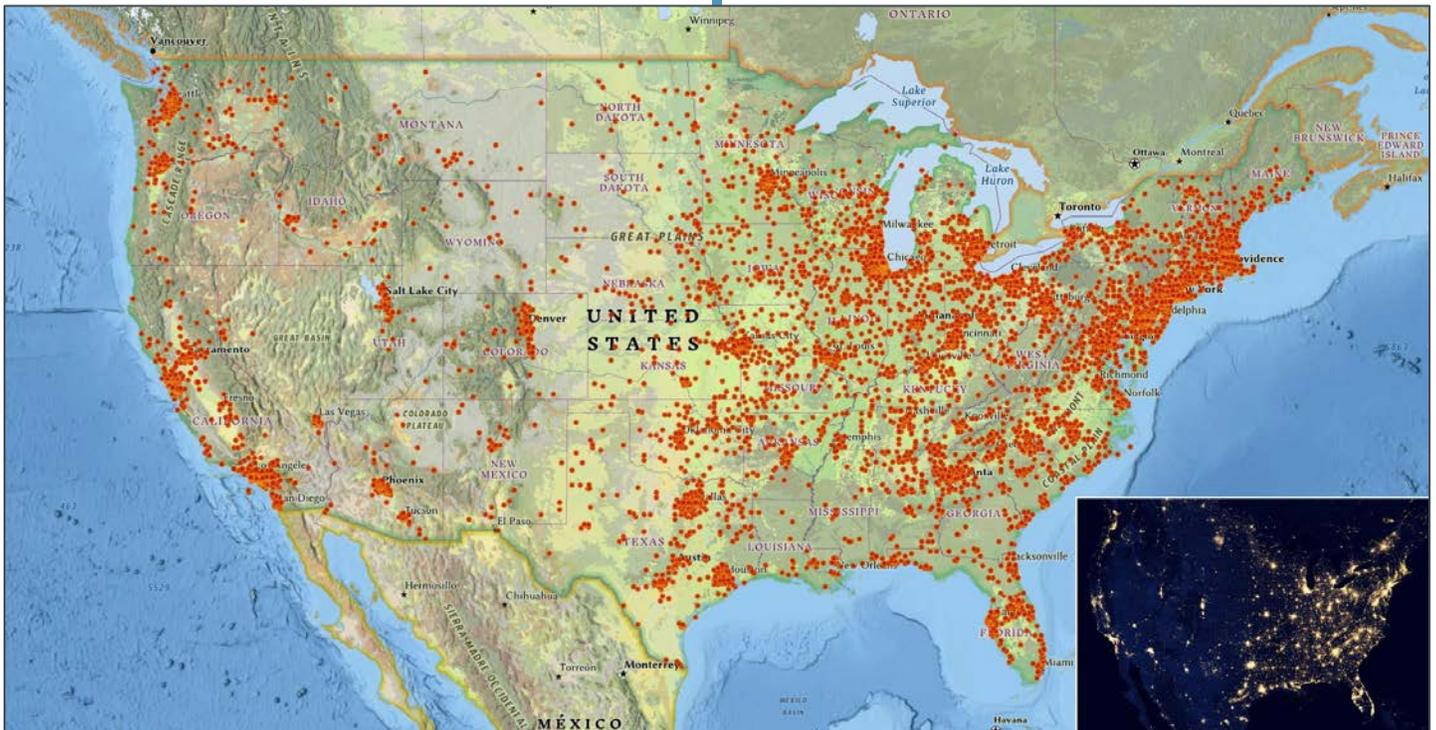
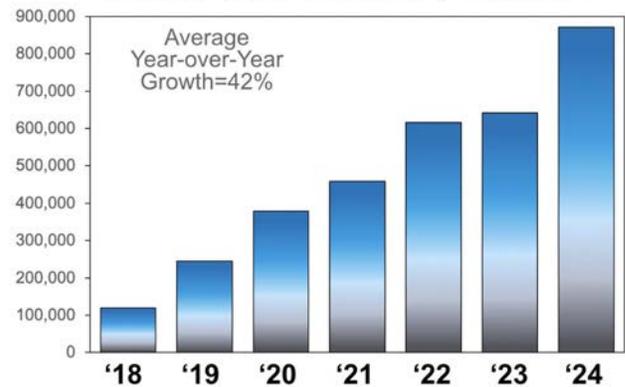
♥ **INCIDENTAL ORCA / MUSTELID / ?**

Sometimes a non-combatant character makes repeated appearances in different battles during the tournament.

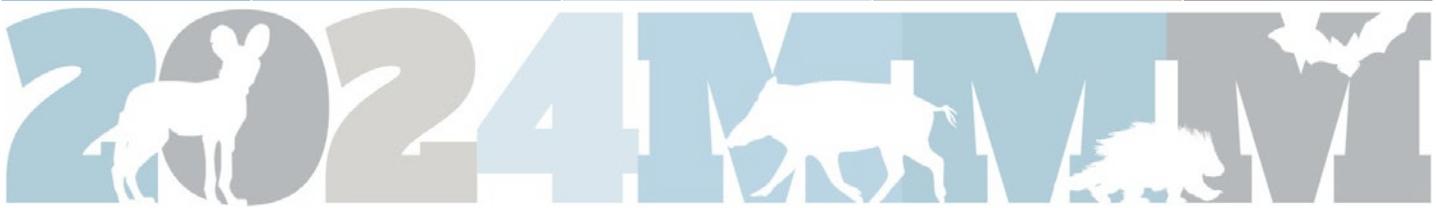
Tournament Reach

MARCH MAMMAL MADNESS BIGGER THAN EVER! As of Friday afternoon, March 8, 2024, N=9,500 educators have requested tournament materials and report plans to share the MMM bracket with 870,000+ learners this year. Educators using MMM come from around the world, **traffic to the LibGuide from >120 countries across Eurasia, Americas, Africa, & Oceania.** In the USA, MMM is used by educators in all 50 states, 4000+ cities/towns and in over half of all counties! *Is your hometown playing MMM?*

MMM Bracket Distribution to Learners (N) as reported by Educators



USA Geographic Distribution of Educators Requesting MMMaterials. Latitude and longitude locations, centered by postal zip code with inset image [City Lights of the United States by NASA](#) for population context. Educator survey conducted according to protocol STUDY00007542 approved by ASU IRB. Thank you to all survey participants! (Map Image by K. Hinde, special thanks to Marc Kissel for zip code conversions & Matt Toro for arcGIS guidance.)



[March Mammal Madness](#) is an Open Educational Resource [CC BY-NC-SA 4.0](#) created annually by an [Autonomous Collective](#)



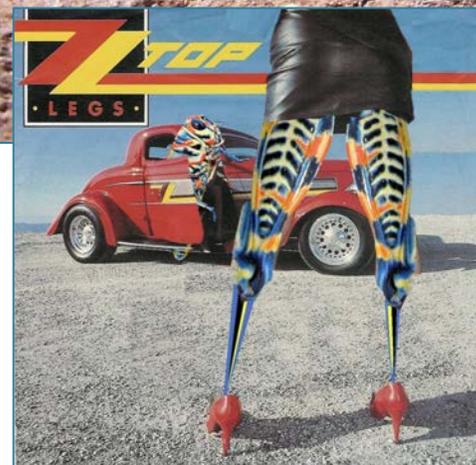
The play-in battle for the 2024 tournament is **Sparklemuffin Peacock Spider** vs. **Rainbow Grasshopper!**

First described to science & quickly nicknamed Sparklemuffin, *Maratus jacatatus* is one of dozens of jumping peacock spider species from Australia. Sparklemuffin spiders are teeny tiny, the male's body length is ~4.6mm (0.2 inches). Male jumping peacock spiders have very colorful back-halves (**opisthosoma**) & perform elaborate courtship dances. Sparklemuffin males have side flaps they lift to appear rounder. Sparklemuffin's scientific name "*jacatatus*" is Latin for rocking and refers to his motion during his dance.



Rainbow Grasshoppers (*Dactylotum bicolor*) are flightless insects with multi-colored banding of reddish-orange, yellow/white, & blue/black body.

The largest rainbow grasshoppers get to be ~1.4 inches, 8x bigger than Sparklemuffin. Female Rainbow Grasshoppers weigh just under a gram, but females weigh 2.5x as much as males. Females have longer legs too.



Modified cover art from ZZ Top's 12 inch single release of "Legs" from their 1983 album Eliminator.

Competition between cattle & mammalian herbivores like deer & rabbits are often discussed, but grasshoppers are also an important herbivore in grasslands, especially in the semi-arid southwest where birds rely on grasshoppers in the food web. BUT Rainbow Grasshopper coloration is advertisement that they taste bad (**aposematism**) making them impervious to predation from birds. Whiptail lizards are also less likely to hunt Rainbow Grasshoppers.

Wild Card CONTINUED

Tonight's battle location is determined by coin flip... & will be in Sparklemuffin's home habitat of Wondul Range National Park in Southern Queensland, Australia. The Bigambul people are the traditional stewards of the land; brush-tailed rock-wallaby live nearby.

Sparklemuffin Peacock spider is on the hunt in the leaf litter. Meanwhile in Southeastern Arizona, carefully hidden from predators in sand, the rainbow grasshopper finds itself MMMagically transported from the semi-arid grasslands of the Appleton-Whittell Research Ranch of the National Audobon Society. In the new landscape, Rainbow grasshopper is motionless.

BECAUSE RAINBOW GRASSHOPPER IS STILL AN EGG!!! Rainbow grasshoppers do not hatch until June & July. Late last summer, Rainbow Grasshopper's mum carefully dug down into sand beneath the scrub-brush to safely lay her egg pod beyond the reach of spiders, assassin bugs, and other predators. Now the Rainbow Grasshopper egg is vulnerable out in the open, but the teensy Sparklemuffin Peacock Spider is not interested in the relatively large egg...

Sparklemuffin Peacock Spider has seen a brown & grey female! Sparklemuffin begins his elaborate fan dance to entice her to be his mate! Sparklemuffin Peacock Spider dramatically rocks his iridescent blue and orange backend, sparkling in the sunlight, as he rapid fire kicks up his extra long leg on each side.

Leaping onto the Rainbow Grasshopper Egg as a little stage, Sparklemuffin Peacock Spider performs some elaborate dance moves! (with apologies to V.I.C)

'Flap it out, kick leg up (let me see you just),
Rock it now, rock it now (let me see you just)
WOBBLE BABY, WOBBLE BABY
WOBBLE BABY, WOBBLE (yeah!)

OH NO! A meat ant (*Iridomyrmex purpureus*), 50% bigger than Sparklemuffin, is aggressively closing in!!



patrickkavanagh / Wikimedia Commons / CC BY 2.0

Sparklemuffin jumps onto a rotting log just as the meat ant's pinchers plunge into the Rainbow Grasshopper egg. Sparklemuffin watches as the



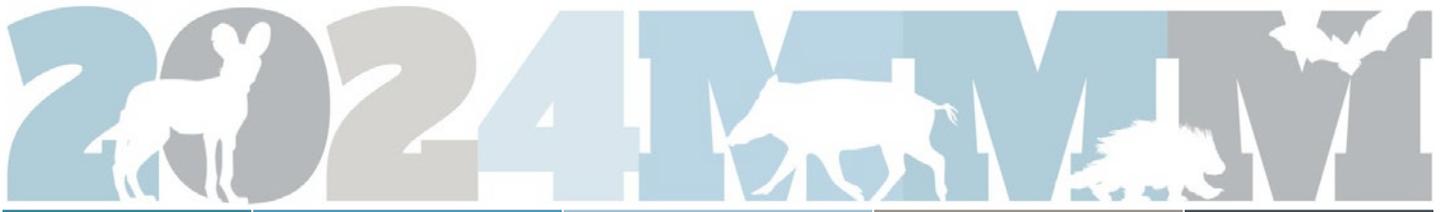
Otto & Hill 2015

meat ant drags the Rainbow Grasshopper egg, rich in protein & fat, back to the communal nest so other ants & larva can feast!

**SPARKLEMUFFIN
OUTLASTS
GRASSHOPPER!**

Sparklemuffin becomes the 16th seed in the Rainbow Collection Division. Narration by Prof. Katie Hinde.





Jessica Popescu
@JessPopescu

#2024MMM WILDCARD EMOJI BATTLE

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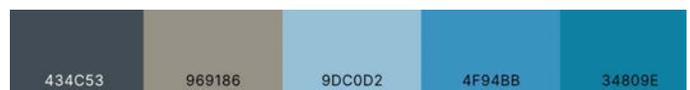
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In 2024 MMM Celebrates the ARTS! This year we will be even more emphatically bringing art & the natural world together. The 2024 Logo color palette was derived from nature. Using the coolers.co website, we created the palette specifically from a gorgeous photo of a tidewater glacier. Find all logo options at the LibGuide along with tournament results.



patano / Wikimedia Commons / CC-BY-SA 3.0



COMBATANT ARTWORK

One upshot of the continued [heat death of the Twitterverse](#), the Art TeaMMM's combatant artwork will be included as a gallery in the RAAI. Thank you Charon Henning, Mary Casillas Freisner, Olivia Pelicer, & Valeria Pelicer for your incredible contributions to MMM!



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