



March 28, 2024

If you're learning, you're winning!

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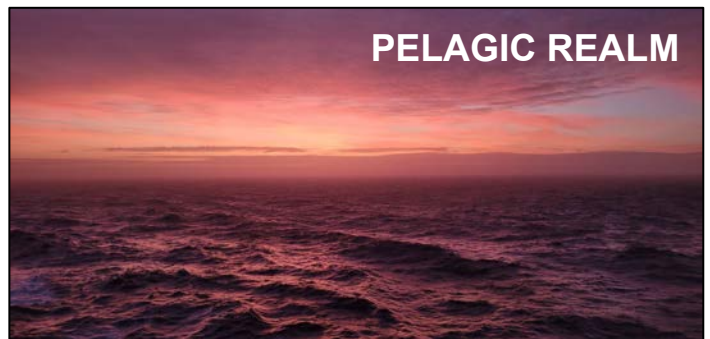
SLITS TRAIT

Tonight is the beginning of random habitat assignment for combatant encounters that apply in the Elite Trait, the Final Roar, and the Championship. The habitats for 2024 are the PELAGIC REALM, TIDEWATER GLACIER, PEATLANDS, or SAVANNA WOODLAND!

Tidewater Glacier: In polar regions glaciers can reach the ocean where saltwater intrusions below and beside can cause icebergs to cleave off from the main glacier. Natural ice dams can form behind ice barriers that eventually burst causing deluges of freshwater into marine ecosystems. Polar regions are some of the most impacted by global warming, speeding glacial movement and melting.



Pelagic Realm: The open ocean from surface to sea floor are the pelagic realm. Within this realm, the ocean has different levels of the water column. The nearest to the surface where sunlight penetrates is the epipelagic zone and sealife is concentrated here as the primary producers (phytoplankton) rely on sunlight for photosynthesis. Less sunlight reaches the twilight depth (mesopelagic zone) and no sunlight reaches the midnight depth (bathypelagic zone). Some areas of oceans descend down to the abyssal and hadal zones.



Peatlands: Peatlands are a type of wetland where plant matter decomposes slower than material is added. In temperate areas, peatlands form under high precipitation / low temperature patterns while

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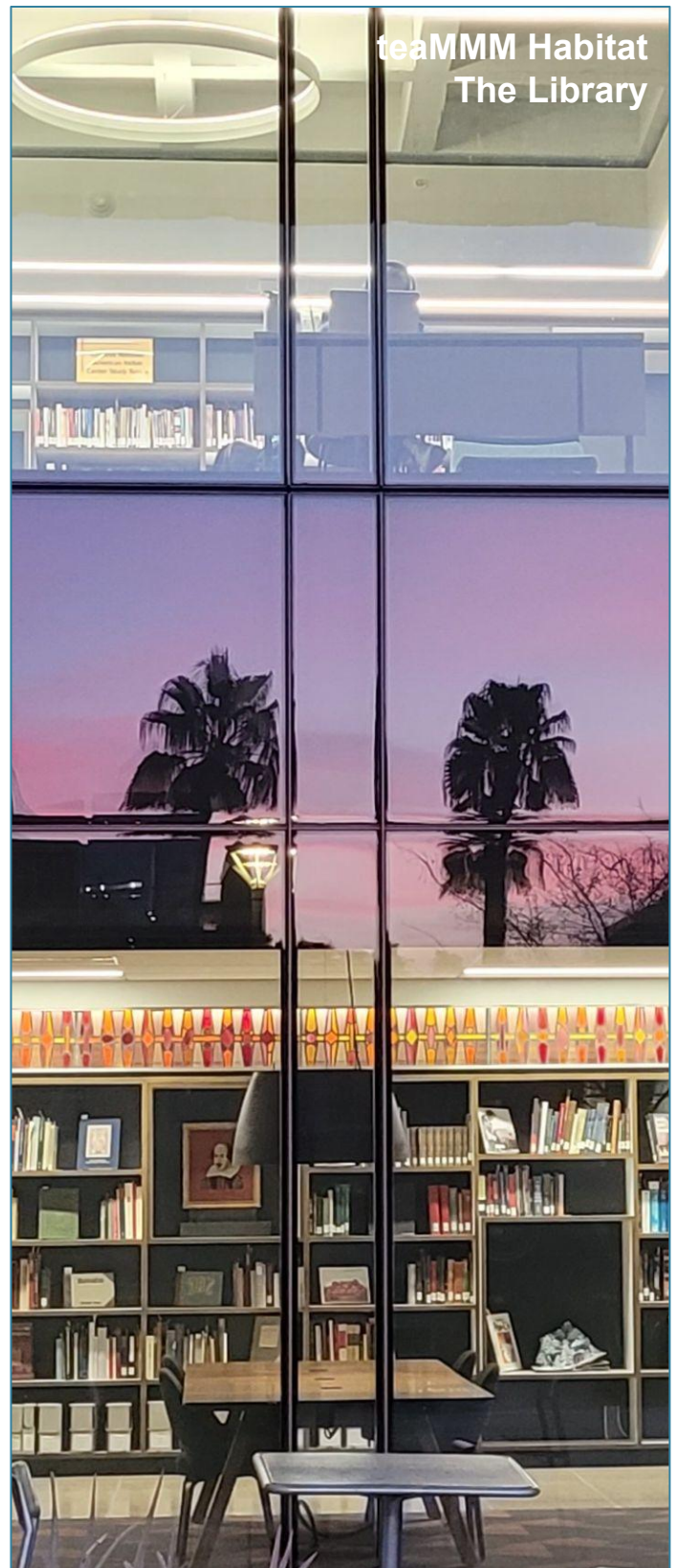
in tropical areas peatlands form in high precipitation / high temperature. Peatlands are 3% of earth's land surface, but one of the most important carbon sinks for mitigating greenhouse gases & global warming.



Savanna Woodland: These habitats involve wooded areas in which trees provide only partial canopy over grassland. Such areas can be transitions zones between continuous forest and desert and reflect areas that often experience intermediate amounts of water directly through seasonal rains or from regions at higher elevations.



Savanna Woodland photo by Anita Ritenour CC-BY 2.0; Tidewater Glacier photo by DCheretovich, public domain / Wikimedia Commons; pelagic realm & peatlands photos by K. Hinde



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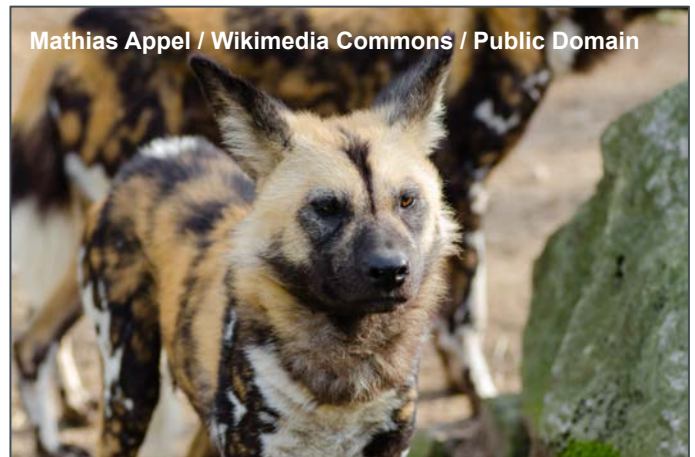
PENGUIN CLASSICS

MARCH MAMMAL MADNESS 2024 Elite Trait

African Painted Dog (1) vs. Mantis Shrimp (6)

African Painted Dog (*Lycaon pictus*) once widespread throughout sub-Saharan Africa was able to succeed in every sort of habitat EXCEPT rainforest. Rainforest presents challenges to this persistence, cooperative hunter: it's hard to chase ungulates to exhaustion & forest distorts vocalizations. African Painted Dogs use dens when pups are young & select den sites in rocky areas or Mopane-dominant forests that reduce risk of lion predation on pups, even if it means longer

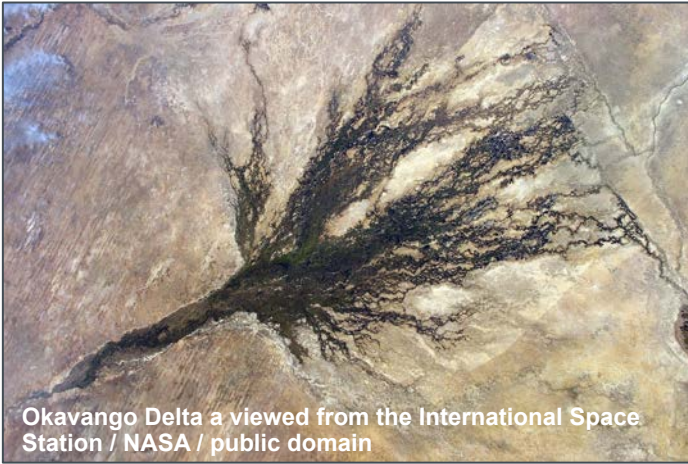
"commute" times to their preferred ungulate hunting grasslands. Peacock Mantis Shrimp (*Odontodactylus scyllarus*) are well known for their visual system with compound eyes. They have an innate preference for colors that we perceive as "yellow." When presented with a choice between colored plastic bricks (i.e. Lego!) they went with the yellow ones.



Mathias Appel / Wikimedia Commons / Public Domain

Tonight's Random Habitat location is... THE SAVANNA WOODLAND! Specifically the dry savanna woodlands of the Okavango Delta of Botswana that "form a transition zone between the Okavango Swamps and the Kalahari Desert" conveniently home habitat for African Painted Dog (Tedder et al. 2014). In the Okavango Delta, 6000 square kilometers are permanently flooded wetlands, with another 6000 square km of surrounding seasonal floodplains with mixed woodland grasslands. The Okavango Delta is a vast inland basin in which seasonal surges of water come from the Angola highlands, flooding the basin, but flowing waters run dry & evaporate before reaching the ocean. These closed water systems are called endorheic basins. Within this

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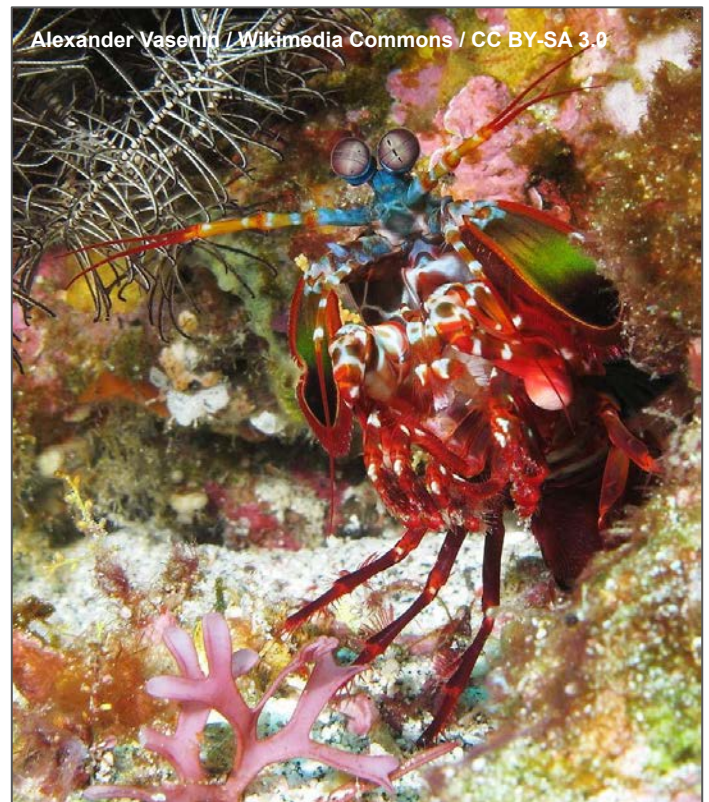


system, salt is left behind as water vaporizes into the atmosphere. By the end of the dry season with extensive evaporation, including through plants, salinity increases, especially in the distal regions furthest from the flood surge. Thousands of seasonal islands within the Okavango system have high salt concentrations, some even develop a salt crust that kills plants other than salt-tolerant grasses.

TONIGHT several African Painted Dogs in the pack, having not eaten much before Lions stole their Wildebeest last night, are hungry and have successfully rallied the pack to the hunt! During their commute, the African Painted Dogs move as a unit, at first a bit slow but soon begin to trot. Like his packmates, Combatant African Painted dog initiates "active searching mode" as the pack approaches their favored hunting grounds (Jordan et al. 2023). March is the last month of the wet season & Tuesday's scattered thunderstorms have left scattered puddles on the landscape.

Within African Painted Dog's favored hunting grounds, #MMMagic translocates the Peacock

Mantis Shrimp to a small, salty puddle within a salt crust area conveniently at a salinity level of 32-36 parts per thousand. African Wild Dog and his packmates spot a lechwe (*Kobus leche*), one of their preferred prey! "The hunting pack halts, lower their ears back against their heads—which they also lower toward the ground—and slowly progress directly toward the prey, keeping a fixed gaze on their quarry" (Jordan et al. 2023). The lechwe "makes a discernible and characteristic head movement, before performing a quick about-turn to flee!" (Jordan et al. 2023).



In the woodland savanna of Botswana, African Painted Dogs run together toward prey. Combatant African Wild Dog at top speed takes the lead, paws churning into the muddy ground, & bites the lechwe by the nose, bringing it off balance, the

ELITE TRAIT & RANDOM HABITATS

rest of the pack converges on the lechwe's gut, killing the ungulate by disemboweling! Combatant African Wild Dog didn't even notice his paw had CRUSHED Peacock Mantis Shrimp in his final predatory burst sprint at lechwe. African Painted Dog, in excitement of the kill, "twitters a high-pitched, birdlike chatter" vocalization to packmates! (Estes & Goddard 1967). AFRICAN WILD DOG CRUSHES MANTIS SHRIMP! Narration by Katie Hinde, Marc Kissel, & Alyson Brokaw.



Kob (1) vs. Great Skua (2)

On average, Kob (*Kobus kob*) spend 90% of their daytime hours eating or laying down although juveniles also spend time play-fighting. The tendency of Great Skua (*Stercorarius skua*) to steal food, consume bird carcasses, & group bathe in lochs increase their risk of exposures to avian flu. The 2022 Avian Flu outbreak caused a 57% decline in local population in Scotland.

TONIGHT Kob is selectively grazing, strolling amongst several dozen bushes and grasses, identifying the most preferred items to balance his nutritional intake WHEN SUDDENLY... Great Skua glides above the St. Kilda Archipelago. This avian

Pirate of the Sky and Sea scans for her next likely meal. She may choose violence, she may choose scavenging, WHEN SUDDENLY...



MMMagic translocation delivers Kob & Great Skua to their randomly determined encounter habitat... PEATLANDS! Peatlands are 3% of earth's land surface, but one of the most important carbon sinks for mitigating greenhouse gases & global warming. Peatlands occur across continents, providing essential habitat to many species. In Ireland, peatlands are 16% of the land area, and our combatants find themselves at the Ballybetagh Bog of South County Dublin a few miles inland from the Irish Sea.



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Deprived of avian prey, Great Skua spots a young Irish hare, *Lepus timidus hibernicus*, the only endemic lagomorph of Ireland, likely present since the late Pleistocene, & similar to the brown hares that Great Skua sometimes eat.



Irish Hare / Alan Wolfe / Wikimedia Commons / CC BY 2.0

Kob is more nervous here. Although the combination of grassland & wetland habitats with woodland along perimeters found in his range in the W-Arly-Pendjari Complex, World Heritage site of Burkina Faso, Benin, & Niger, HERE KOB IS ENTIRELY ALONE!

Great Skua uses her well-honed lethal attack techniques for kittiwake nestlings! Great Skua glides towards the young hare, brakes & hovers on approach, & grasps the young hare with her sturdy curved bill.

Kob, like many medium-sized ungulates, finds greater safety in numbers! Being with others increases vigilance & predator detection... & the more there are, the lower *individual* risk of being eaten by a predator (dilution of predation risk).

Great Skua, still using her lethal techniques for kittiwake nestlings, takes skyward with the young hare grasped in her bill... for a quick flight to the center of the peatland where a slowly flowing stream runs atop and through the peat.

At home in the hostile landscape prowled by lion and hyena, Kob spends time with other kob, and will routinely co-occur with bushbuck along waterways.

Great Skua, continuing her lethal tactics, plunges the young hare into the water, "using her bill and feet to push it below the surface, pecks at it, & holds it down until drowned... about 1-2 minutes" (Andersson 1976). #2024MMM

Across the peatland Kob sees... are those bushbuck?!?! NO- THEY ARE FALLOW DEER!! Kob begins to trot across the peatland toward the only sorta familiar faces in this unfamiliar habitat!



Fallow Deer/ Bob Ford / Wikimedia Commons / CC BY-SA 2.0

After "killing the prey Great Skua tears off <fur> & rips open the belly by pulling backwards with jerky head movements." (Andersson 1976) #2024MMM

Kob, in his hurry to join the Fallow Deer has plummeted into the deepest of the squishy, unstable peat! Kob's dainty hooves do little to distribute his body weight & he is sinking, sinking, sinking... INTO THE VERY BOG THAT CLAIMED DOZENS OF IRISH ELK THOUSANDS OF YEARS AGO!!!! and some reindeer! Peatland bogs, because of the chemistry of the ecosystem, greatly slow processes of decay of organic material. Both wild animals and ancient humans have been recovered & studied in ways that bone and fossil

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remains make difficult. Peatlands, along with even more preserving permafrost, are Nature's Natural History Collections. Moreover time sequences of insects, pollens, & SPORES reveal past paleoclimates & paleoenvironments. Fully submerged, Kob kicks out one... last... time... and Bear's Head fungus spores dislodge from his dainty hoof... but like the ungulate, spores now rest in nature's long-term preservation storage.

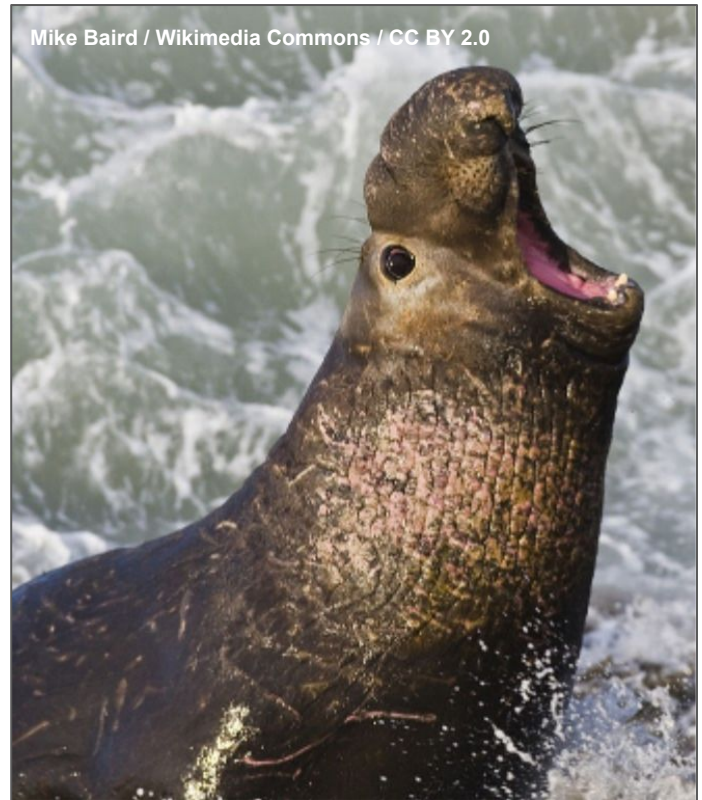
"At that hour when all things have repose,
O lonely watcher of the skies,
Do you hear the night wind
and the sighs"

of Great Skua spending another 5 minutes finishing her meal. (with apologies to James Joyce 1907). SKUA OUTLASTS KOB! Narration by Alyson Brokaw, Tara Chestnut, Brian Tanis, & Katie Hinde.

Northern Elephant Seal (1) vs. Great White Shark (3) - In regions of Great White Shark (*Carcharodon carcharias*) predation on Northern Elephant Seals (*Mirounga angustirostris*), seals modify their behavior, entering coastal waters to and from haul-out beaches, prioritizing hunting along the ocean floor instead of the middle or top of the water column. Great White Sharks are primarily solitary with limited social dynamics. When they aggregate together these are often random associations, occasionally assorting by age/size more than any kind of social affinity.



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Tonight Northern Elephant Seal and Great White Shark meet in their randomly selected habitat... THE PELAGIC REALM! Specifically the North Pacific Ocean, to the west of the Farallon Islands National Wildlife Refuge. Great White Shark is one of the top predators of an elaborate food web from the microscopic microalgae (phytoplankton) that float near the surface for photosynthesis to the zooplankton that consume the phytoplankton to the larger animals that eat zooplankton. Great White Shark swims in the ocean investigating what she encounters in the ocean water column. From bird activity at the surface to movement on the ocean floor (to certain depths), Great White Shark veers toward the animals/objects to see IF FOOD.

With the mating season over, Northern Elephant Seal returns to the ocean with a mighty hunger. After fasting for over 3 months, he has lost 1000kg

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from his initial ~2200kg in December 2023. Northern Elephant Seal has been deep diving for his squid dinner. Elephant Seals are the deepest diving of the pinnipeds and dive deeper than most whales! Bull Elephant Seals also dive deeper than females. Northern Elephant Seal is returning from a dive to 770m, holding his breath for 45 minutes. He has more red blood cells with proteins to carry oxygen (hemoglobin), more oxygen-binding proteins in muscle (myoglobin), and a lot more blood! As Northern Elephant Seal dived deeper, his spleen released sequestered red blood cells that delivered waves of oxygen to his tissues!

Northern Elephant Seal surfaces and takes a deep breath of air. But he will only stay at the ocean surface for about 5 minutes, both to maximize hunting time and to limit time as an open target for orcas and great white sharks at the top of the water column. A quick breath and Bull Northern Elephant Shark begins his dive toward another course of calamari when GREAT WHITE SHARK DELIVERS A PREDATORY BITE INTO THE SHOULDER OF NORTHERN ELEPHANT SEAL!

Sperm Whale (1) vs. Giant Squid (2) - Although considered vulnerable to extinction, Sperm Whales (*Physeter macrocephalus*) are the most common large cetacean swimming earth's oceans today. An apex predator in pelagic realm ecosystems, Sperm Whales collectively eat an estimated ~110 million TONS of cephalopods per year.

Giant Squid (*Architeuthis dux*) are buoyant because of their ammonium ion concentrations. "Without the ammonium ions, the squid are heavier than seawater... but w/ them the animal can maintain its level in the water w/o having to expend energy by constant swimming."



Tonight TWO cephalopod hunters swim the pelagic zone near New Zealand as both Sperm Whale AND Giant Squid are predators of octopus, cuttlefish, and squid. Giant Squid even cannibalizes other giant squid. Sperm Whale is slowly swimming when his stomach clenches and he vomits out SQUID BEAKS! Unlike our friend the Pitcher Plant (RIP) Sperm Whales can't digest the chitin that make up squid beaks. Unless regurgitated, or passed as ambergris, squid beaks can accumulate by the hundreds in Sperm Whale stomachs. Now with less squid beak, Sperm Whale begins one of his foraging dives into the submarine canyon, using echolocation clicks to suss out the presence of prey in the water column to optimize his hunt search.

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Giant Squid swims with eyes open wide. Her eyes, the size of dinner plates, are not to primarily detect prey or mates but to (possibly) see just beyond the sonar range of Sperm Whale to avoid her greatest predatory danger in the ocean..

A flying squid of the genus *Todarodes* swims in the canyon. Giant Squid's feeding arms shoot forward over 30 feet, the thick clubbed ends covered in hundreds of toothed 2-inch suckers, to grasp her flying squid prey!

BUZZZZZZZZZZZZZZZZZZZZ!!!!

Sperm Whale's sonar clicks become so rapid they BUZZ as he predatorily bursts at the flying squid. SPERM WHALE TEETH CHOMP DOWN ON FLYING SQUID AND ONE OF GIANT SQUID'S FEEDING ARMS! Giant Squid with her other feeding arm slashes at Sperm Whale, raking his eye with her toothed sucker club... adding new lacerations over his scars from previous fights with other giant squid before!

Sperm Whale swings his head and swallows the flying squid as Giant Squid rips back her trapped feeding arm and pivots to flee! Even though Giant Squid are likely less than 2% of Sperm Whale diet, the mighty Sperm Whale surges after Giant Squid! SURF & SURF TONIGHT!

Giant Squid pumps water through her funnel under her mantle creating jet propulsion to sprint swim away... as the MMMagic translocation portal opens before Giant Squid! Giant Squid with Sperm Whale just behind burst through the MMMagic translocation portal into the Alaskan arctic waters at a tidewater glacier- randomly selected battle habitat!

Giant Squid releases a cloud of "black, mucous ink" (Roper & Boss 1982)! Sperm whale swims into the ink cloud just as he is fatally struck by a ship!

After all, "the sperm whale is one of the species most vulnerable to ship strikes" (Klosner 2022), such collisions are a leading cause of sperm whale mortality, and the US Coast Guard is piloting a new maritime whale alert system right now! GIANT SQUID OUTLASTS SPERM WHALE! Narrated by Katie Hinde.

"Still higher creeps the tide with subtle power,
And still the waves advance with sullen roar;
But with the last faint gleam of twilight hour
I turn me homeward from the lonely shore"
(Mary Dow Brine, 1816-1913)



Jessica Popescu
@JessPopescu

#2024MMM

ELITE TRAIT

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Kob v Skua

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African Painted Dog vs. Mantis Shrimp

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African Painted Dog vs. Mantis Shrimp cont

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N. Elephant Seal & Great White Shark

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*“Let the rain kiss you. Let the rain beat upon your head
with silver liquid drops. Let the rain sing you a lullaby.”
–Langston Hughes*



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Sperm Whale & Giant Squid

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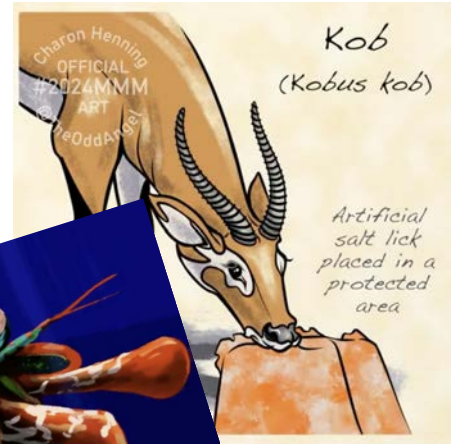
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READ ALL ABOUT IT by Katie Hinde, Margaret Janz, Melanie Beasley, Anali Perry, Anthony Costantini, & William Yates



COMBATANT ARTWORK

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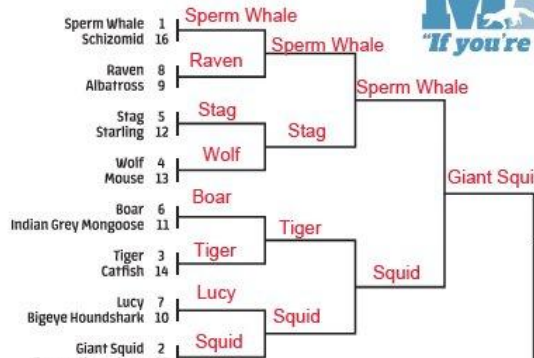
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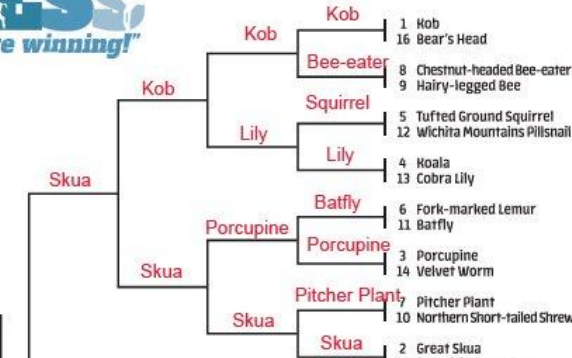
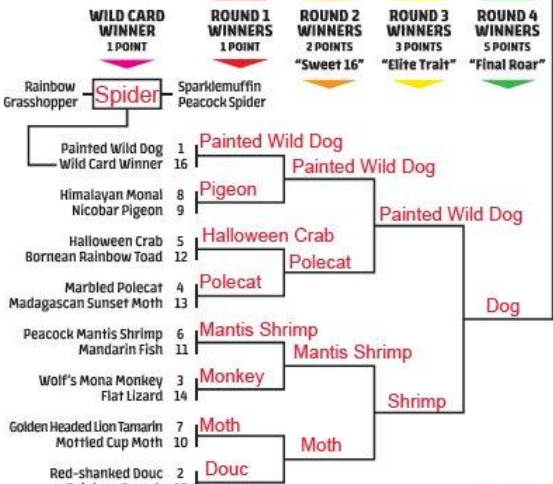


ALL TOURNAMENT INFO:
libguides.asu.edu/MarchMammalMadness
 NOTE: MMM includes many non-mammal species

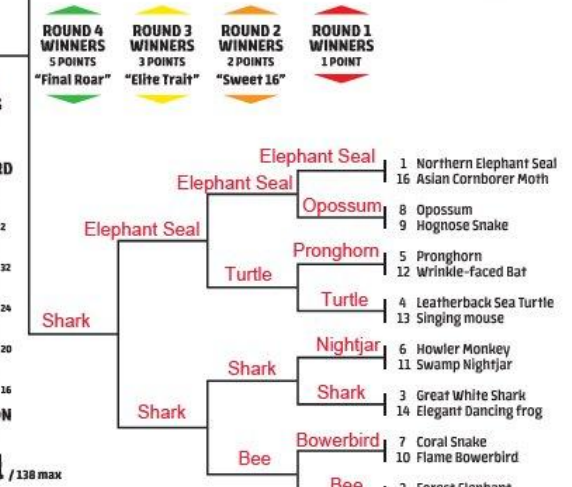
EPIC ANIMALS



RAINBOW COLLECTION



CONNOISSEUR CRITTERS



TAKE A BOW

MMM created and directed by Professor Katie Hinde, Arizona State University

Layout by Assi. Prof. William Nickley, The Ohio State University
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Excuse me, I was told there would be



MARCH MAMMAL MADNESS 2013-2024