2024 Final Roar

Great Skua (2) vs. Great White Shark (3) - When Great Skua (*Stercorarius skua*) gather on their "club grounds" (Andersson 1976) during the breeding season, a key threat signal is the long call while stretching the neck forward, opening the beak, and lifting their wings back and open. Great white sharks (*Carcharodon carcharias*) have been observed engaging in a water slap fight that may be a social signal of prey item ownership. As one great white shark swims near a shark with a recently killed seal, the first slaps their tail against the surface splashing and the other responds and the slaps continue.

After Great Skua valiantly defeated Stag in the Irish peat bog, she is soaring toward St. Kilda, a journey taking her 322 miles due northwest toward the outer of the Outer Hebrides when SUDDENLY...

After Great White Shark valorously defeated Northern Elephant Seal, one of her most preferred foods, she gorged for several days when SUDDENLY...

MMMagic portal translocates Great Skua and Great White Shark to their randomly assigned habitat: TIDEWATER GLACIER! Specifically to a tidewater glacier in Prince William Sound in Alaska. At latitude 60°N, this is the cusp of the northerly range of Pacific great white sharks in the Bering Strait and Alaskan waters. Great Skua can breed on islands of the Barents Sea, such as the islands of Svalbard, as far north as latitude 77.8, so she feels very much adapted to this scene.

But Great Skua and Great White Shark are not the only animals interested in the carcass of the sperm whale; a great cacophony of sea birds and sharks are already feeding at the carcass of Sperm Whale, near the fatal ship strike that eliminated the cetacean from the tournament during the Elite Trait.

Inside the whale carcass, tissue decay and microbe activity make gases that float the whale at the water’s surface. "A carcass may float for several seeks and exude a continuous slick of blood and oil that can attract sharks from long distances." (Long & Jones 1996). In the coming weeks, this whale may float to the shore. A humpback whale carcass on the beach of Glacier Bay National Park, Alaska, was scavenged by bald eagles, gray wolves, ravens, crows, and gulls, as well as many, many intertidal invertebrates. More often though, for a whale carcass scavenged at the surface, eventually the gases release and the whale sinks down... down... down... to the ocean floor where the ‘whale fall’ supports a rich ecosystem for decades. Over time different communities of animals that specialize in consuming decaying skin, blubber, muscle, and organs will live at the whale fall, then bacteria that decompose fatty bones dominate the ecosystem. The collapse of whale populations from

whaling activities in the 18th and 19th Centuries has also collapsed the key food source for these deep sea ecosystems.

At the floating whale, hungry Great Skua immediately lands in the water and paddles over to a large male great white shark already feeding on the carcass. As he tears chunks of flesh from the dead marine mammal, blubber bits go flying, quickly scooped by Great Skua. Combatant Great White Shark assesses the scene longer; she swims along the carcass for about 17 seconds. Here in Alaska, a lot of the great white sharks are BIG BOYS (and girls) that are nearly the 6m length of combatant Great White Shark.

GROOOOOAAAAAAAN!!!! CRAAAAACCCCCCCCK!!!!!!! RRRRRUUUUUUMMMMMMBBBBBLLLLLE!!!!!!

"There's nothing else like the moment a giant hunk of ice calves from the face of a glacier and then crashes into the sea.... There's the groan of tortured ice, the artillery-shot crack as it shatters, the rumble of its collapse" (Alaska Org, n.d.).

AND THE RESULTING WAVE OF WATER DISPLACED BY ICE WASHES OVER THE FLOATING WHALE CARCASS!

But very quickly the sharks and seabirds return to the floating carcass. Combatant Great White Shark submerges to swim at a 45 degree angle toward the whale's lower abdomen, a favored feeding section. Combatant Great White Shark surfaces from directly below floating Great Skua!

Great Skua flies away, as they typically do from surfacing sharks! Combatant Great White Shark lifts up out of the water, biting deep into sperm whale carcass, and thrashes her head to tear away about 20kg (45lbs, 91 stoats) of meat she swallows down! She continues to feed peacefully near another great white shark... as they can.

Great Skua lands in the whale slick looking for morsels of floating blubber... beyond the field of battle! GREAT WHITE SHARK DISPLACES GREAT SKUA! While natural whale fall is important for deep sea ecosystems, ship strike and other human-caused whale mortality hurt whale population health. Citizen science can be part of the solution! Narrated by Jessica Light and Katie Hinde.

African Painted Dog (1) vs Giant Squid (2) - In African painted dogs (*Lycaon pictus*), typically a dominant pair breeds & helpers cooperatively support the care, protection, and feeding of pups. Before pups are able to travel with the pack, but old enough to chew, adults return from a kill to the natal den and regurgitate meat for pups who give begging cries and lick at the adult's muzzle.

"All the suckers of a giant squid are shaped like a suction cup. Each sucker is set on a muscular pedicle, or short stalk, that can be moved by the animal. The perimeter of a sucker is rimmed by a sharply toothed ring of chitin… Imprints or scars from squid suckers have been found on the skin of sperm whales and even in their stomach." (Roper & Boss et al. 1982).

Tonight African Painted Dog is with his pack in Moremi Game Reserve in the Okavango delta of Botswana, the pack is engaged in a particularly enthusiastic rally! African Painted dog is about to depart with the pack when SUDDENLY...

In the twilight zone of the ocean, Giant Squid (*Architeuthis dux*) is finishing a course of squid dinner. Her feeding tentacles have brought Giant Squid's prey to her mouth where her sharp beak breaks her dinner into small pieces so they can fit down her esophagus that passes through her donut-shaped brain! Giant Squid's toothed tongue (radula) has teeth that slope backward toward the gut. Soon no morsels are left and Giant Squid prepares for an ambush on a flying squid of the genus *Todarodes* when SUDDENLY...

The combatants are MMMagically translocated to the randomly selected habitat: PEATLANDS!

"Peat soils contain more than 600 gigatonnes of carbon which represents up to 44% of all soil carbon, and exceeds the carbon stored in all other vegetation types including the world's forests" (IUCN, 2021). Tonight's battle peatlands are located at 65.247°S, 64.085°W on Cape Rasmussen of the Antarctic Peninsula! This peatland occurs across the channel from the Vernadsky Research Base where weather and temperature have been recorded every 3 hours continuously since 1947, the longest ongoing record of Antarctic climate.

Arriving first, African Painted Dog finds himself in a snowstorm! The forecast calls for 4-8 inches of snow accumulation with 25mph sustained winds. "Hooooooooooo!" Alone in the small patch of Antarctic peatland, separated from his pack, African Painted Dog makes a long distance "hoo-call" to tell his pack that he, specifically, is lost. But there are no hoo-calls in response. African Painted Dog is alone. But the Antarctic wind howls. "Hooooooooo!" African Painted Dog tries again, giving his longest hoo-call for 17 full seconds, desperate to reunite with his pack!

Although African Painted Dog's home Moremi Game Reserve has had record lows of 32F/0C, he is not adapted to the Antarctic gale-wind snowstorm, and alone he begins digging a den to escape the elements, moaning in frustration as he digs. Chunks of peat fly over the rocky hillside to land in the ocean inlet below. In mere minutes, African Painted Dog digs down 19.5 inches, his claws gouging through 600 years of peat deposition and hitting the rock below. This peatland began to grow around 2700 years ago and grew 0.1cm per year

until 2150 years ago when growth stopped. This quiescence lasted until about 1950, when global warming changed the climate in Antarctica.

Crouched down, the dugout depression could have provided some protection... but unlike the mossbanks on nearby subantarctic islands, this is a true "waterlogged peatland" with a shallow water table (Loisel et al. 2017). For African Painted Dog, laying in water on rock in the snowstorm would only accelerate hypothermia! African Painted Dog crawls toward the edge of the hillside to look for a route down from the plateau. Standing for a better view, a 48mph gust of wind, the TEETH OF A GALE, tosses the 75 lb African Painted Dog tumbling down the steep hillside!

MEANWHILE... Giant Squid has ambushed a flying squid of the genus *Todarodes* through the MMMagic Portal into the inlet below the Antarctic peatlands. The nearly 2 foot long flying squid *Todarodes* uses jet propulsion to leap from the water as an escape reaction! Flying squid Todarodes collides with the tumbling African Painted Dog, breaking his fall! Giant Squid's clubbed feeding arms had already deployed at flying squid Todarodes such that they shoot out of the water… but giant squid's feeding arm reach falls short of the African Painted Dog!

Bruised, but okay, African Painted Dog jumps up, disentangling from flying squid, and begins navigating to the nearby rocky beach in the snowstorm... turning his back on the ocean. A wave from the incoming high tide washes African Painted Dog and chunks of peatlands into the ocean... and into Giant Squid's tentacled grasp! Giant Squid's suckered arms wrap around African Painted Dog...

MUSICAL INTERLUDE
Ruff the Painted Canid, hunts the inland sea
Prey fallen in a caught 'em blitz in a land called Moremi

Together they commuted, a pack with wagging tails
Ruff kept a look out for prey's savanna trails
Kudu, kob, and lechwe head-bobbed when they came
Painted Dogs would cower when lions roared out at game

Ruff the Painted Canid, hunts the inland sea
Prey fallen in a caught 'em blitz in a land called Moremi
Little puppy begging, he loved those rascal pups
He brought 'em meals at natal den & tugged them by the scruff.

A story lives forever, but not so painted Ruff.
Poisoned things and gunshot pings make way for human stuff.
One dark night it happened; Painted Canid was forlorn
And Ruff, that mighty canid, shivered in the Austral storm

Without his natal kin, Ruff could not be brave,
So Ruff that Painted Canid, sadly slipped into his grave…

AND SLIPPED RIGHT THE HECK BACK OUT!

After investigating African Painted Dog, Giant Squid's dextrous tentacles release the bizarre furry form! No mammal remains have ever been reported in Giant Squid stomachs, only cephalopods and fish! Swimming quickly to the rocky beach, African Painted Dog scrambles across the rocks made slicker by slushy snow as stormwinds continue to howl! African Painted Dog is running off the field of battle onto the Antarctic Peninsula into soon to be sub-freezing temperatures...

SUDDENLY MMMagic translocation portal returns African Painted Dog to his pack in Moremi Game Reserve! The return of African Painted Dog with his group causes a particularly enthusiastic "greeting ceremony" as the pack members gather nose to nose licking, giving excited twitters, whimpers, buzzes, and noisy gurgles in joyful reunion!

MUSICAL REPRISE
Ruff the Painted Canid returned to inland sea
MMMagic Portaled in a classic twist to a land called Moremi
Ruff the Painted Canid, curled beneath the tree
And warmed by rays & sneezing yeas, and other family glee!

Beneath the Antarctic peatland bluff Giant Squid swims back to the deeper ocean waters. GIANT SQUID OUTLASTS AFRICAN PAINTED DOG! Narrated by Katie Hinde.

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Great Skua vs. Great White Shark

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