Processo seletivo PPGECB - 2018.1

CPF do candidato: _____ Nível: ( ) Mestrado ( ) Doutorado

Prova de Língua Inglesa

Instruções para prova:

1. **Não insira seu NOME nas folhas de prova**. Sua única identificação será o número do CPF.

2. Esta prova é composta por dois textos, cada um com 05 questões que devem ser respondidas em PORTUGUÊS (10 questões ao todo, valendo 1 ponto cada).

3. A prova terá a duração máxima de 2 horas.

3. É permitido o uso de dicionários durante a execução da prova.

5. Use caneta azul ou preta para responder. Respostas a lápis não serão consideradas.

6. Durante a prova o examinador não poderá responder sobre quaisquer dúvidas em relação às questões.

Boa prova!

Texto 1

So much for the abominable snowman. Study finds that 'yeti' DNA belongs to bears

Sid Perkins Nov. 28, 2017
Evolution, **Plants & Animals**
doi:10.1126/science.aar6102

Hikers in Tibet and the Himalayas need not fear the monstrous yeti—but they'd darn well better carry bear spray. DNA analyses of nine samples purported to be from the "abominable snowman" reveal that eight actually came from various species of bears native to the area.

In the folklore of Nepal, the yeti looms large. The creature is often depicted as an immense, shaggy ape-human that roams the Himalayan hinterlands. Purported sightings over the years, as well as scattered "remains" secreted away in monasteries or held by shamans, have hinted to some that the yeti is not merely a mythical boogeyman. But science has not borne this out so far. Previous genetic analyses of a couple of hair samples collected in India and Bhutan suggested that one small stretch of their mitochondrial DNA (mtDNA)—the genetic material in a cell's power-generating machinery that's passed down only by females—resembled that of polar bears. That finding hinted that a previously unknown type of bear, possibly a hybrid between polar bears and brown bears, could be roaming the Himalayas, says Charlotte Lindqvist, an evolutionary biologist at the State University of New York in Buffalo.

To find out for sure, Lindqvist and her colleagues took a more thorough look at the mtDNA of as many samples of supposed yeti remains as she could get her hands on. Some were obtained when she worked with a U.K. production crew on the 2016 documentary ***Yeti or Not?***, which sought to sift fact from folklore. The filmmakers got hold of a tooth and some hair collected on the Tibetan Plateau in the late 1930s, as well as a sample of scat from Italian mountaineer Reinhold Messner's museum in the Tyrolean Alps. More recent samples included hair collected in Nepal by a nomadic herdsman and a leg bone found by a spiritual healer in a cave in Tibet. The team also analyzed samples recently collected from several subspecies of bears native to the area, including the Himalayan brown bear, the Tibetan brown bear, and the black bear. Altogether, the scientists analyzed 24 samples, including nine purported to be from yeti.

Of the nine "yeti" samples, eight turned out to be from bears native to the area, the researchers report today in the *Proceedings of the Royal Society B*. The other sample came from a dog. Similar studies of hair samples supposedly related to North America's big hairy hominid, the **sasquatch**(aka Bigfoot), have revealed that those fibers came from bears, horses,

dogs, and a variety of other creatures—even a human.Debunking aside, the new study also yielded lots of scientifically useful info, Lindqvist says. The analyses generated the first full mitochondrial genomes for the Himalayan brown bear (*Ursus arctos isabellinus*) and the Himalayan black bear (*Ursus thibetanus laniger*), for example. That could help scientists figure out how genetically different these rare subspecies are from more common species, as well as the last time these groups shared maternal ancestors in the past.

"It's great that we now know these bears' place in the maternal family tree," says Beth Shapiro, an evolutionary biologist at the University of California, Santa Cruz, who was not involved with the work."These guys did a pretty good job," adds Todd Disotell, a biological anthropologist at New York University in New York City. One finding—that the Himalayan brown bear and the Tibetan brown bear had such clearly distinct mtDNA—was surprising, he notes, because subspecies are often genetically similar: "I didn't expect that."

He wonders whether future analyses of these bears' nuclear DNA (which contains genetic contributions from both the mother and the father) will tell the same story. Male and female bears lead different lifestyles: Mama bears generally don't wander much beyond their home territory, whereas male bears roam over much larger ranges. So, he suggests, the nuclear genomes of these subspecies might reveal that they're hybridized more than the mtDNA suggests.

At the very least, when researchers return to the Himalayas to collect new samples, they won't have to be so concerned about stumbling into the clutches of the infamous yeti.

Perguntas:

1. Por que os escaladores que visitam Tibet e Himalaia não precisam mais temer o "yeti"?

2. Como o folclore do Nepal descreve a "criatura"?

3. O que a análise do DNA mitocondrial revelou sobre a "criatura"? Quantas amostras foram analisadas?

4. Que tipo de informação útil foi obtida das analises realizadas nas amostras da "criatura"?

5. Que tipo de amostras o documentário "Yeti or Not?" usa para indicar a existência da "criatura"?

Texto 2

Nations agree to ban fishing in Arctic Ocean for at least 16 years

Hannah Hoag Dec. 1, 2017
Oceanography, Policy
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Nine nations and the European Union have reached a deal to place the central Arctic Ocean (CAO) off-limits to commercial fishers for at least the next 16 years. The pact, announced yesterday, will give scientists time to understand the region's marine ecology—and the potential impacts of climate change—before fishing becomes widespread.

"There is no other high seas area where we've decided to do the science first," says Scott Highleyman, vice president of conservation policy and programs at the Ocean Conservancy in Washington, D.C., who also served on the U.S. delegation to the negotiations. "It's a great example of putting the precautionary principle into action."

The deal to protect 2.8 million square kilometers of international waters in the Arctic was reached after six meetings spread over 2 years. It includes not just nations with coastal claims in the Arctic, but nations such as China, Japan, and South Korea with fishing fleets interested in operating in the region.

Thus far, thick ice and uncertain fish stocks have kept commercial fishing vessels out of the CAO, but the region is becoming increasingly accessible because of rapid loss of summer sea ice. In recent summers, as much as 40% of the CAO has been open water, mostly north of Alaska and Russia, over the Chukchi Plateau.

As the summer sea ice becomes thinner and its edge retreats northward, more sunlight is penetrating the water, increasing production of plankton, the base of the Arctic food web. These sun-fed plankton are gobbled up by Arctic cod, which in turn are hunted by animals higher up the food chain, including seals, polar bears, and humans. Some parts of the Arctic Ocean's adjacent seas, such as the Barents Sea (off the northern coasts of Russia and Norway), saw steep increases in primary production in 2016, approaching 35% above the 2003–15 average.

Under international law, these high seas are open to anyone. In the absence of an agreement, fishing there would not be illegal, but it would be unregulated—and some researchers, environmental groups, and policymakers fear it could harm the fragile and rapidly changing marine ecosystem. In the late 1980s, fishing trawlers from Japan, China, and elsewhere crowded the international waters in the Bering Strait between Russia and the United States and removed millions of tons of pollock. By the early 1990s, the pollock population had crashed. It has still not recovered.

In 2012, approximately 2000 scientists called for a fishing moratorium in the CAO to prevent a similar catastrophe. Their efforts were a success: By 2015, Canada, Denmark (representing Greenland), Norway, Russia, and the United States—the nations with Arctic coastlines—vowed to bar their own fishing vessels from the area.

But that left the Arctic open to large global fishing fleets. Delegations from Japan, China, South Korea, Iceland, and the European Union joined discussion later that year to negotiate a new agreement. In December 2016, before he left office, then-President Barack Obama and Canadian Prime Minister Justin Trudeau affirmed their commitment to a legally binding agreement to prevent unregulated fishing in the CAO.

"The delegations saw the wisdom in waiting [to start commercial fishing] until there was enough science and management in place," says Ambassador David Balton of the U.S. Department of State in Washington, D.C., who has chaired the negotiations since 2015. The deal will stand for 16 years and be automatically renewed every 5 years, unless a country objects or until science-based fisheries quota and rules are put in place.

In addition to closing the area to fishing, the delegations have agreed to a joint program of scientific research and monitoring to identify species, their abundance, existing predator-prey relationships, and the pressures they face, including climate change.

For now, accessing the CAO to do research requires significant icebreaking capacity, says Peter Harrison, an Arctic policy and fisheries expert at Queen's University in Kingston, Canada, and former deputy minister of Canada's Department of Fisheries and Oceans. Whereas the United States and Canada have struggled to maintain and grow their icebreaking fleet, other signatories, including China, have that capacity.

Harrison argues for the creation of a new multinational science organization focused on the CAO. It would determine the science priorities, share and analyze the data collected, and provide advice on the state of the CAO fish stocks. "If you say commercial fishing will not take place until the there is sufficient science, going forward, the science will play a very significant role," he says.

Perguntas

6. Segundo o texto, que acordo foi feito entre as nove nações e a União Européia? Qual o objetivo deste acordo?

7. Qual a magnitude da área abrangida pelo acordo?

8. Por que o acesso a esta região vem ficando mais fácil?

9. Segundo o texto, quem pesca nestas áreas de mar aberto age ilegalmente?

10. Que tipo de catástrofe pretende-se evitar com este acordo?