



Reasons to choose a
First Bank Mortgage



63°

Broken
Clouds
MORE WEATHER



HOME > OPINION

Comment

Follow This Article

Three Poles: The Arctic, Antarctic and Himalayas connection

Posted: June 2, 2013 - 12:09am

By DR. FALK HUETTMANN & DR. ASHOK ROY

The views expressed herein are the authors' own and not those of the University of Alaska.

"The real voyage of discovery does not consist in seeking new landscapes, but in having new eyes."

— Marcel Proust

The Arctic, the Antarctic, and the Hindu Kush-Himalayas/Tibetan Plateau form a vortex of remote terrains consisting of rock, snow, glaciers, low temperatures, and ice. The icy

deserts and vast wilderness of this trio of poles are similar in that they have a profound impact on the earth's climate as they act as cooling chambers; are home to several unique species such as the Arctic polar bear, the Himalayan snow leopard, and the Antarctic emperor penguin; face similar ecological challenges; shelter the planet's primary water and ice resources impacting oceans, coastlines, and water-tables; and are fragile, specialized ecosystems. While the Arctic is an ocean basin surrounded by continents, the Antarctic is a continent surrounded by ocean, and the Himalayas comprise the highest and youngest mountain belt. Above 15,000 feet altitude, the conditions in the subnival Himalayas resemble the Arctic and Antarctic polar regions. Microbial biomass levels in the dry areas of the Himalayas are as low as those of the Dry Valleys of the Antarctic, and they both contain the same one of the dominant algal clades. Although at first glance the regions differ the time has come to view the three poles holistically as they also demonstrate remarkable similarities of microbial life in their arid soils.

Oil and gas explorations across Alaska, Russia, Greenland, and Norway involve similar challenges, business concepts, and often the same companies—Royal Dutch Shell, BP, Exxon Mobil, Schlumberger. The geopolitical relevance of the Arctic is overwhelmingly economic in nature with around 22 percent of the earth's remaining supplies of oil and gas. The Antarctic is a valuable region for research, and the Himalayas regions have significant political and military relevance. Moreover, the workforce skill sets required in cold, remote, and field science environments are similar for all three poles. For example, many workers move between work at Toolik Lake in the Arctic and the Antarctic depending on the season; scientists working in the Svalbard archipelago in the Arctic are regularly hired in New Zealand or Australia to work in the Antarctic. Another example of the interconnectedness of the poles is the impact of the Asian brown cloud on Alaska's air quality.

Additionally, the three poles are connected and important for many long-route migratory birds: The Arctic tern flies 12,000 miles from its Arctic breeding grounds to the Antarctic and back again each year; raptor migration takes place between the paleo-Arctic and the Himalayas.

Commercial shipping and resource extraction also bind the Arctic and the Antarctic. In both of these poles advances in fishing technology have facilitated the exploitation of fishing in deeper waters than before with such species as the Antarctic toothfish, Antarctic cod, salmon, and



Click Here to View This Weeks Listings of Homes in Juneau

Latest Updates

Most Viewed

Most Commented

- Lt Gov. certifies pot application
- Verizon turns on Alaska 4G LTE network
- Juneau flood map changes underway
- Hot dry weather prompts fire warning from USFS
- LEGO League battles at the Baranof

ALASKAJOBNET.COM

Wouldn't you like a job where you can build something, including a better future? With Monster's new filtering tools, you can quickly hone in on the job that's right for you. So visit place_partner_url_here, and you might find yourself in the middle of the best of both worlds.

JUNEAU EMPIRE / MONSTER

ADVERTISEMENT

whitefish. Interestingly, the Antarctic Treaty prohibits, at present, terrestrial extraction in the Antarctic. However, in the years ahead, much discussion is expected regarding the use and “mining” of Antarctica’s terrestrial resources. Due to the economic rise of China and India—who share the third pole—there is increasing trade with the Arctic and interest in the sea routes in the Arctic. One spinoff is the increase in cargo routes and air traffic through Anchorage connecting the United States with Asia.

From a wider perspective, new pipelines and LNG projects in Asia connect to markets and resources in the poles. The trans-Siberian railway connects, for example, eastern Siberia to China and Mongolia. As crude oil markets are international, Kazakhstan, with its huge oil reserves, is developing pipelines to meet demands in China. Due to the high mountain area where Nepal (with no petroleum resources) is located, they must have their oil imported from India. It is worth noting that the Tibetan Plateau alone at the third pole contains 36,800 glaciers and has the largest mass of cryospheric components outside the Arctic and the Antarctic.

Additionally, another common thread that runs through the three poles is eco-tourism as a result of their biodiversity of flora and fauna, and vast geographic mass of snow-capped mountains and glaciers. The third pole, with its glacial melt, supports ten major river basins, including the Ganges, Indus, Brahmaputra, Mekong, Yangtze, Yellow River, and others. Only the North Pole region can impress equally with its polar bears, huge auk colonies, bowhead whales known to live more than 180 years, caribou conducting one of the largest animal migrations on Earth, and the world’s biggest national park in northeast Greenland.

Besides economic and cultural threads, complex geopolitical threads also intertwine the three poles. Some of the world’s conflict pressure points reside in the third pole (Tibet, the Maoist insurgency in Nepal, and political/military power equilibrium kept in balance by nations like India, China, Russia and the U.S.).

One more commonality among the three poles is that many glaciers are now in retreat as a result of global warming with profound and lasting impacts on the hydrological regimes of the river basins as well as reduced flows. All three poles face significant threats from climate change. The American Meteorological Society forecasts a 90 percent probability that global temperatures will rise by thirteen degrees Fahrenheit in this century, with even greater increases at the poles. This will almost certainly trigger rising sea levels, extreme weather patterns, water shortages, and even conflicts. Already, drinking water is exported from Nepal (at the third pole) to South Korea, and over-populated (India, China) and often volatile nations (Bangladesh, Afghanistan, Myanmar) rely on freshwater supply from the third pole.

Recent studies have confirmed that climate change is happening in the cryosphere (the Arctic, Himalayas, and Antarctic) faster and with more visible impact than anywhere else on earth. At the three poles, permafrost, ice, and glacial ice are melting, releasing greenhouse gases and making it increasingly difficult for many species to adapt for survival, such as walrus, Arctic fox, emperor penguin, and snow leopard to name a few.

Apart from the commonality of natural resource exploitation among the three poles, is the common struggle with urbanization (Lhasa and Kathmandu in the third pole already have millions of inhabitants each). In contrast to the Arctic and Antarctic polar regions, the Himalayas have significant human population as well as several microclimatic zones within the different altitudinal ranges.

The cultural dimensions, including hundreds of minorities, such as the Lachenpas, with their languages and dialects and three of world’s largest religions—Hinduism, Buddhism, Zen — of the third pole are more profound than that of the circumpolar north. However, new roads and hubs for ships and planes are being built and developed in Iceland and Kamchatka in the circumpolar north; and Antarctica now has regular flight services and airports with the discussion continuing to include the building of hotels. According to the United Nations Environment Programme/Global Resource Information Database-Arendal outlook, economic growth and industrial development are forecasted for the North Pole in the next fifty years and even include the sea floor.

The challenges (biomass heating and cooking, agricultural burning) and similarities (cross-fertilization of technologies to decrease carbon emissions from stoves used for heating in the Arctic and cooking in the Himalayas) between the Arctic and the Himalayas are strikingly similar despite their geographic differences.

Thus far, the sweeping scale and scope of commonalities among the three poles have not been addressed in Alaska or, for that matter, more globally. We are at a crossroads on the path to a more holistic understanding of our common challenges and potential. It is our fervent hope that this article will help launch that conversation at a public policy level, on a more immediate basis, yielding new insights into the cold, dry limits to life on earth. William Blake wrote that a tree moves some men to tears, but for others is merely “a green thing that stands in the way.” Similarly, for



Recent Comments

- Aetna to exit California's
- Health Premiums Skyrocket
- Lat
- WTF?
- Caution - same logic could be used to move the capital -

Spotted

« Back Featured Photos - 9 total (Expand) Next »



Saturday Pleinrein

many there are two poles; but for some there are three poles which are so lovely, so inviting, and have so much in common in terms of their extreme physical ecosystems. The time has come to move this discussion on the spatial, temporal, and biological connections among the three poles from poetry to prose.

• Dr. Ashok Roy is vice president for finance & administration/chief financial officer for the University of Alaska system and associate professor of business administration at UAF. Dr. Falk Huettmann is associate professor at the Institute of Arctic Biology & Wildlife at UAF. The opinions expressed are their own.

Comment     

[Follow This Article](#)

Comments (2)

[Add comment](#)

ADVISORY: Users are solely responsible for opinions they post here and for following agreed-upon rules of civility. Posts and comments do not reflect the views of this site. Posts and comments are automatically checked for inappropriate language, but readers might find some comments offensive or inaccurate. If you believe a comment violates our rules, click the "Flag as offensive" link below the comment.

 **Latitude58** 06/02/13 - 07:03 am 1 3

The connection...

...between the three is the ice. All of the other parallels the authors are trying to draw could be made between just about any part of the world.

Thirteen degrees Fahrenheit. That's a number that I can understand. What are the implications for my grandchildren?

14725
POINTS

 06/03/13 - 11:03 am 0 1

13 degrees globally? I highly doubt this.

Nevertheles Dr. Roy and Dr. Heuttmann's article, while addressed to the general readership, is a veiled attempt for publication outside the realm of academia to reach the masses of 'chicken-little' subscribers longing for a fresh source to kick-start their green efforts.

[Back to Top](#)

Sponsored Results

New Rule in ALASKA:
(JUN 2013): If You Pay For Car Insurance You Better Read This...
ConsumerFinanceDaily

Alaska's Inside Passage
Vacation guide for Ketchikan, first city of Southeast Alaskal
visit - ketchikan.com

Mortgage Rates Hit 2.50%
If you owe under \$729k you may qualify for 2.90% APR Govt Refi Plans.
SeeRefinanceRates

Site Web Search by **YAHOO!** Businesses

CONTACT US

Switchboard: 907-586-3740
Circulation and Delivery: 907-586-3740
Newsroom Fax: 907-586-3028
Business Fax: 907-586-9097
Accounts Receivable: 907-523-2270
[View the Staff Directory](#)

ADVERTISING

[Advertising Rates](#)
[Contact a Sales Representative](#)
[Place a Classified Ad](#)
[Find Juneau jobs](#)
[Buy/Sell Automobile](#)
[Buy/Sell Real Estate](#)

SUBSCRIBER SERVICES

[Subscribe to the Juneau Empire](#)
[Sign up to our newsletter](#)
[Set Up a Temporary Vacation Stop](#)
[Ask a Billing Question](#)
[Change Delivery Address](#)
[Report a Delivery Problem](#)

SOCIAL NETWORKING

[Follow us on Twitter](#)
[Join our Facebook page](#)