

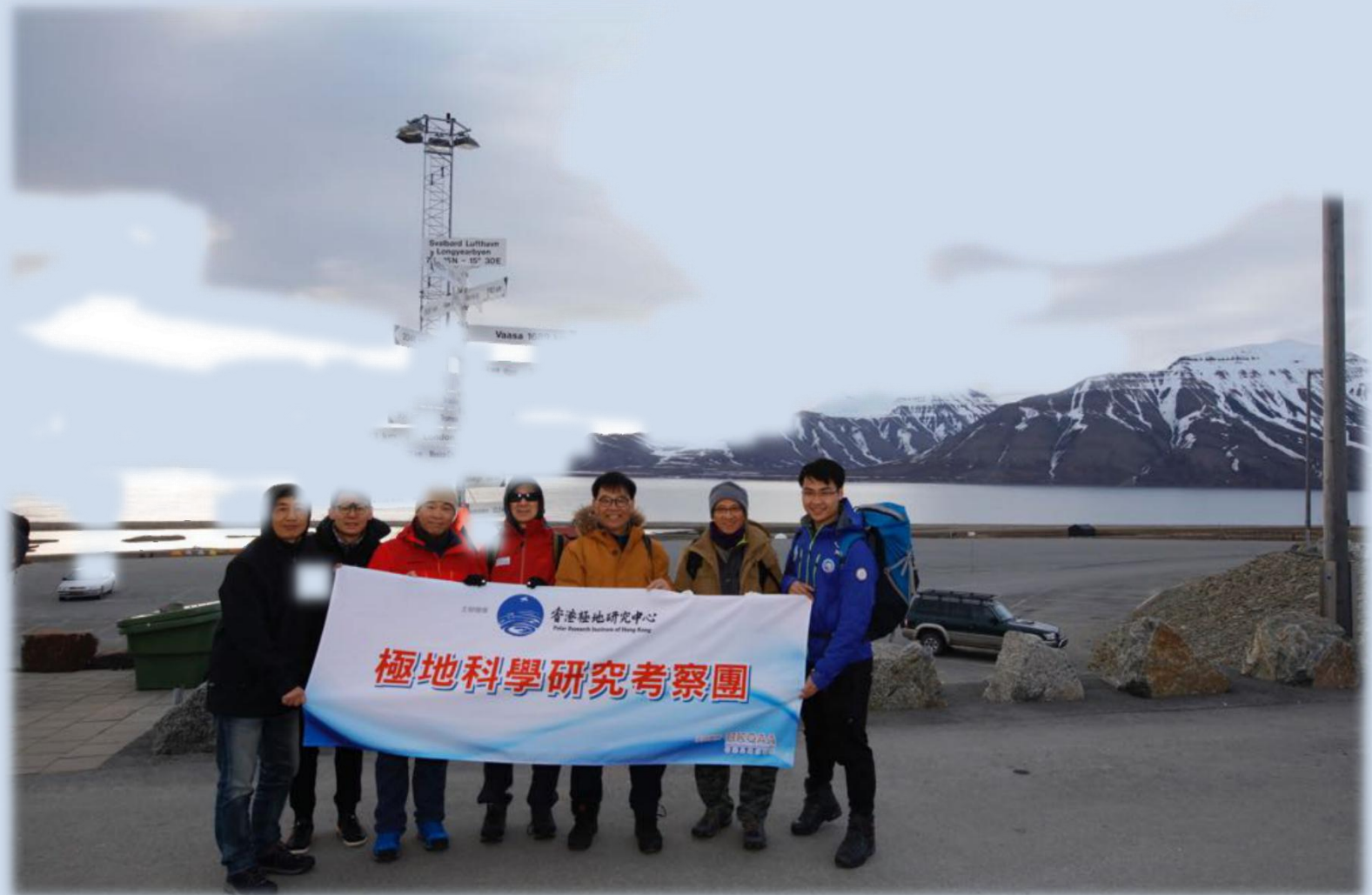
A polar bear is shown standing on a small, isolated ice floe in a body of water. The bear is white with some yellowish-brown staining on its back and legs. The ice floe is surrounded by larger, more solid ice chunks in the background. The water is a pale blue-grey color. The overall scene suggests a melting polar environment.

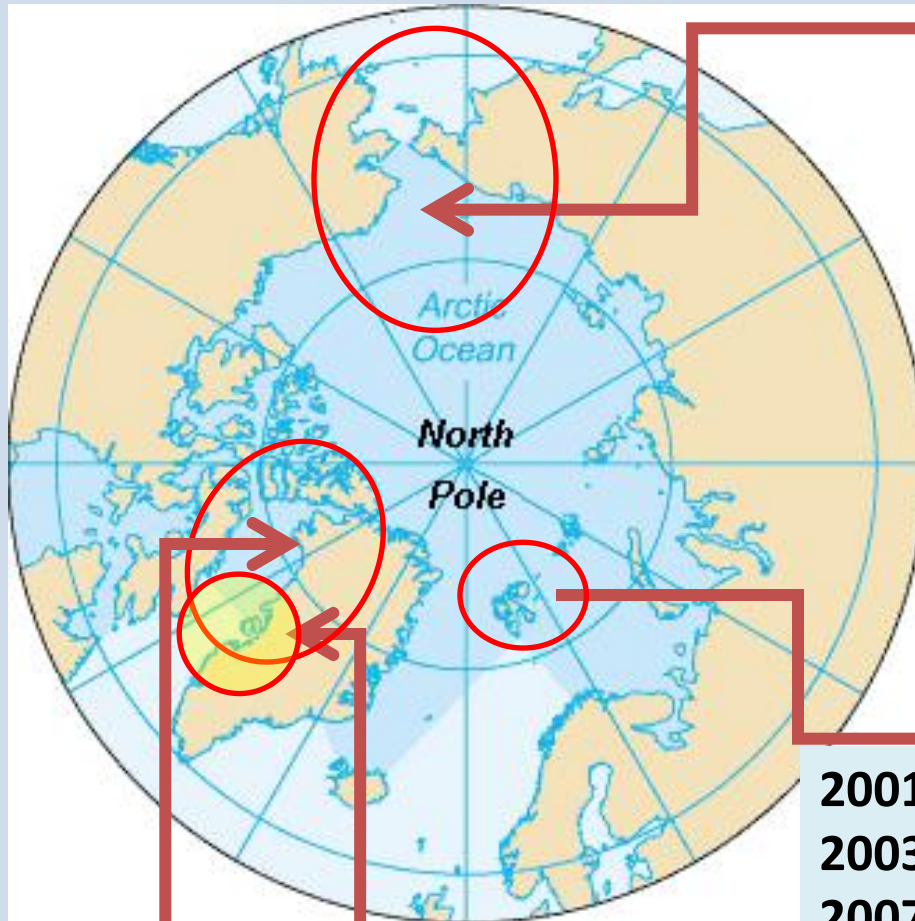
Polar Climate Change and Green Hong Kong - Challenges and Opportunities

何建宗教授

Prof. Ho Kin-chung; *BBS, JP*

My Fresh Experiences in the Higher Arctic





1998, 2006

My research in the Higher Arctic



1995, 1997

2016

2001,
2003,
2007,
2015,
2017
2018a
2018b
2019a
2019b



Where is Svalbard Isles ?







Shrinking of Ice Sheets in the Polar Regions:

- The Greenland and Antarctic ice sheets have decreased in mass.
- Data from NASA's Gravity Recovery and Climate Experiment show Greenland lost an average of 286 billion tons of ice per year between 1993 and 2016.
-
- The rate of Antarctica ice mass loss has tripled in the last decade. As shown by data of NASA, Antarctica lost about 127 billion tons of ice per year from 1993 to 2016.



Glaciers Retreat:

- Glaciers are retreating almost everywhere around the world — including in the Arctic regions, Alps, Himalayas, Andes, Rockies, Alaska and Africa.





Source:

<https://www.treehugger.com/climate-change/and-after-photos-show-dramatic-retreat-glaciers.html>

Thinner and Smaller in Ice Cover for Mountains in the N. Hemisphere:

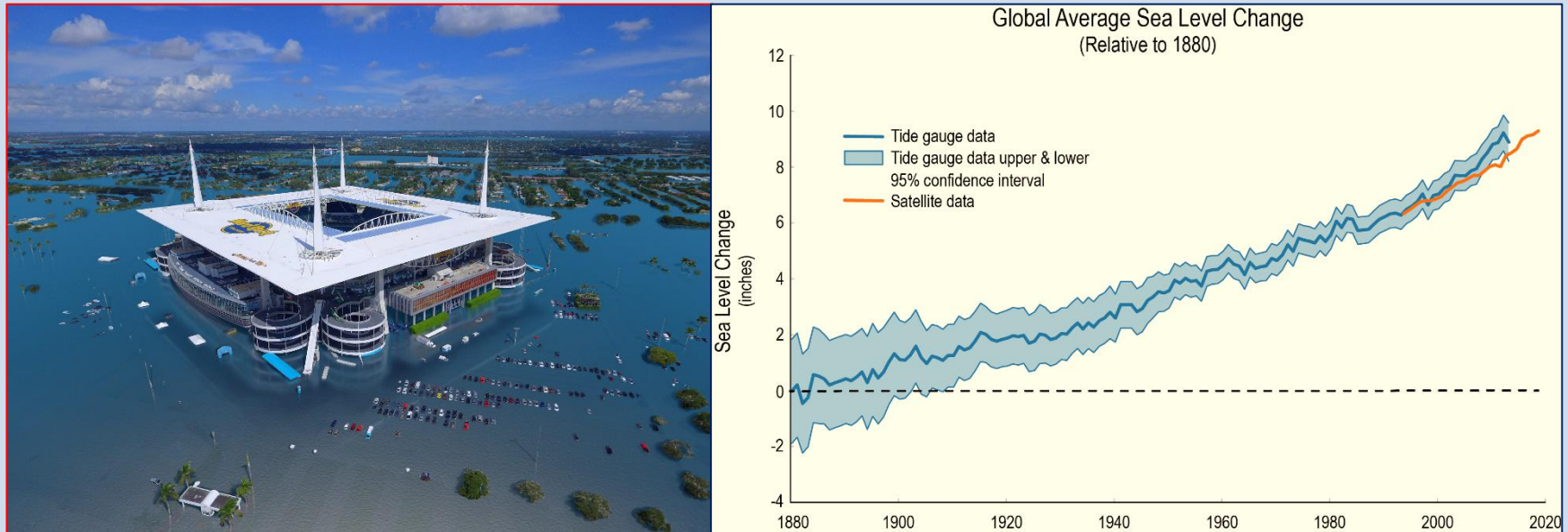
- Satellite observations reveal that the amount of spring snow cover in the Northern Hemisphere has decreased over the past five decades and that the snow is melting earlier.



Raising Sea Level:

- Global sea level rose about 8 inches in the last century. The rate in the last two decades, however, is nearly double that of the last century and is accelerating slightly every year.

<https://sealevel.climatecentral.org/>



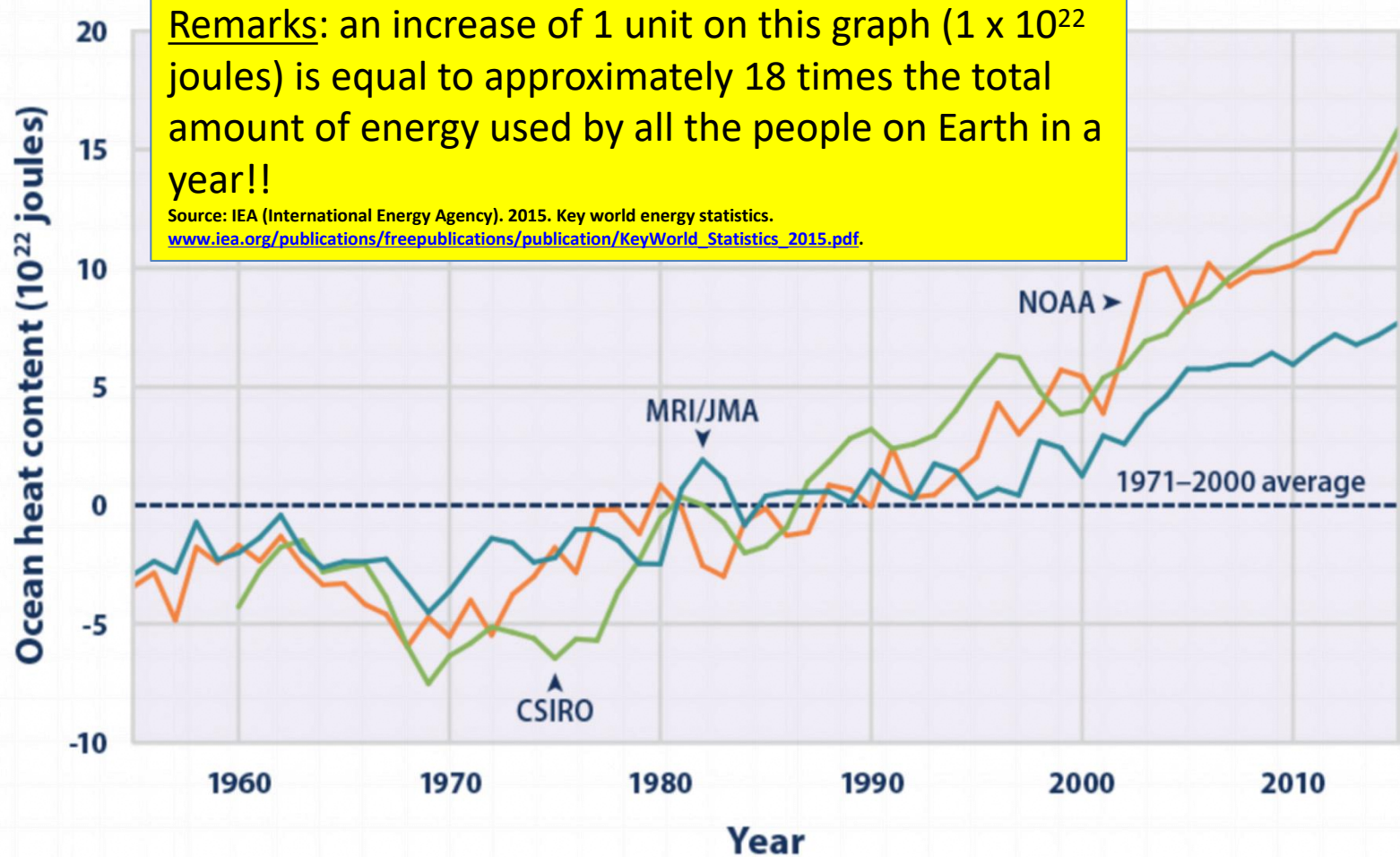
Declining Arctic and Antarctic Sea Ices:

Both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades.

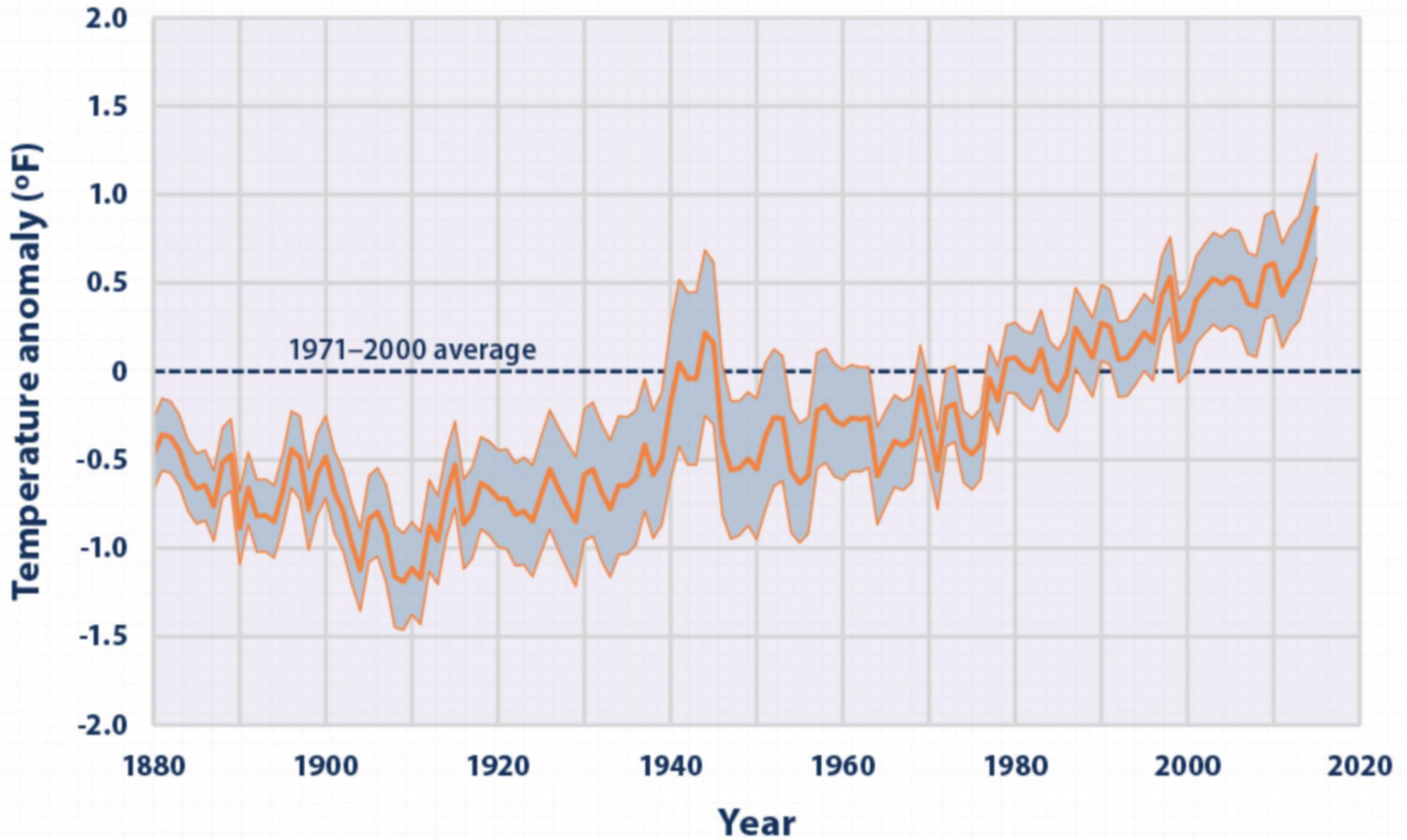


Hungry polar bears

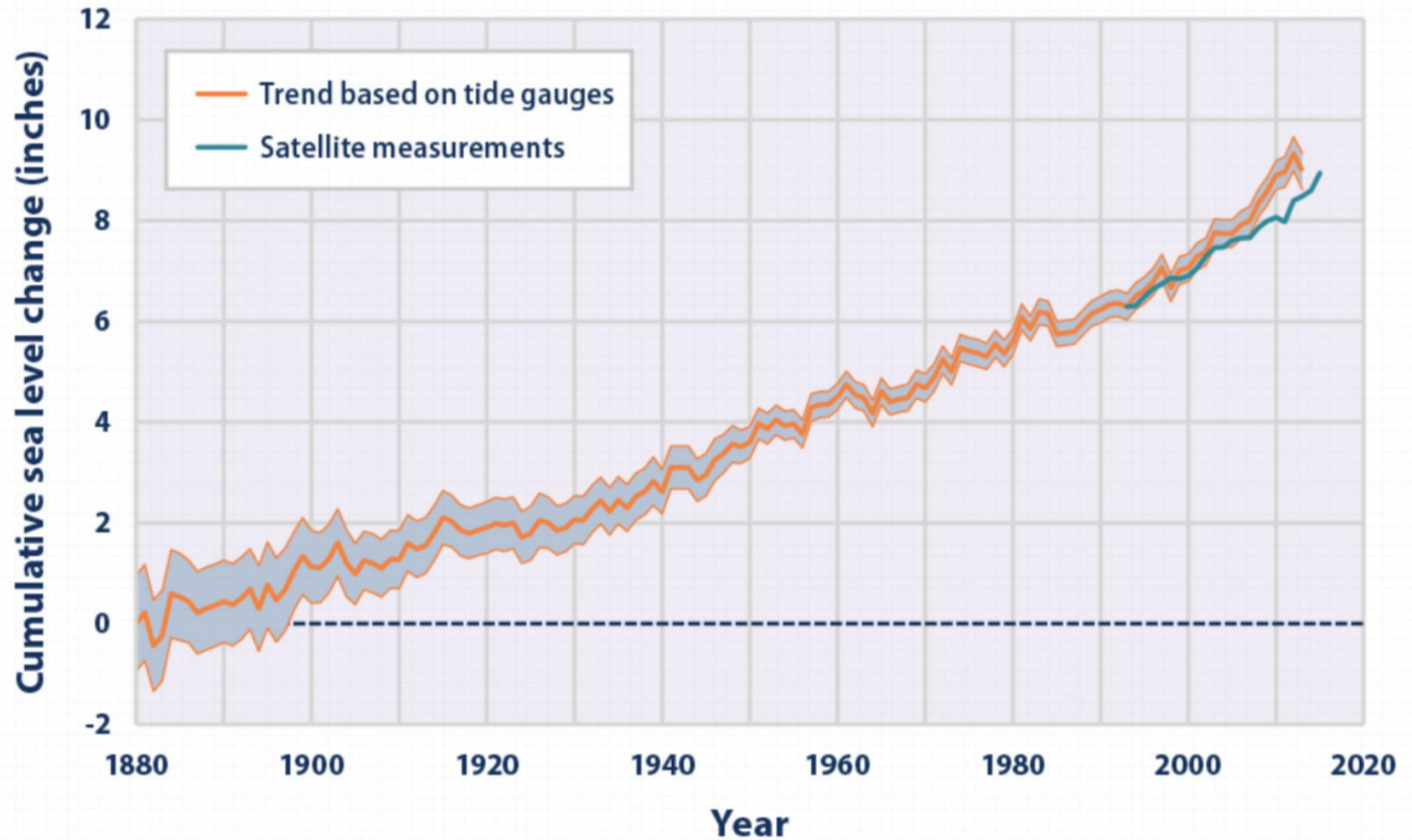




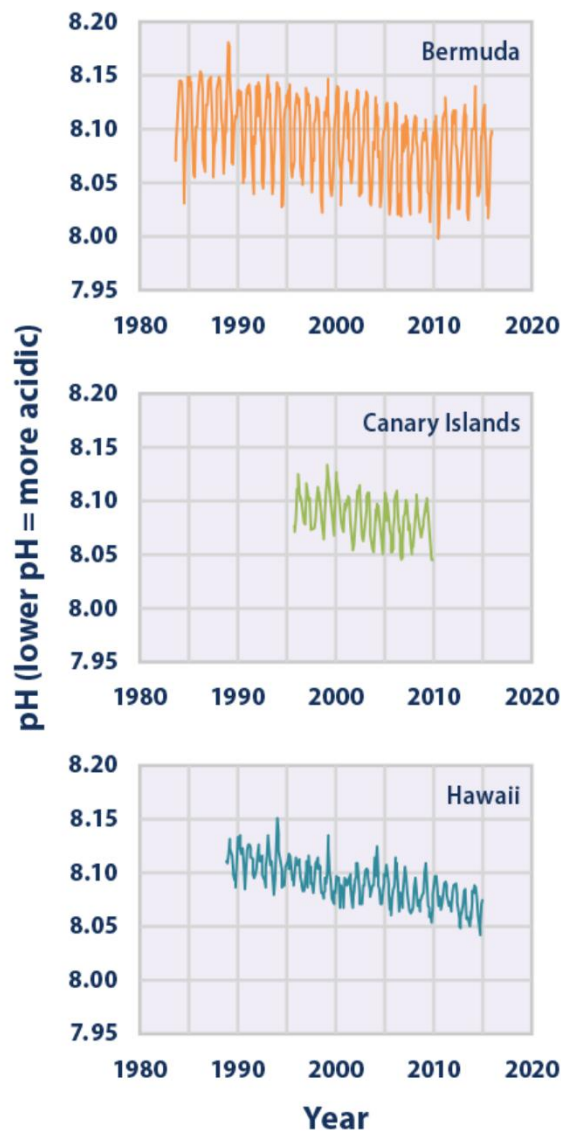
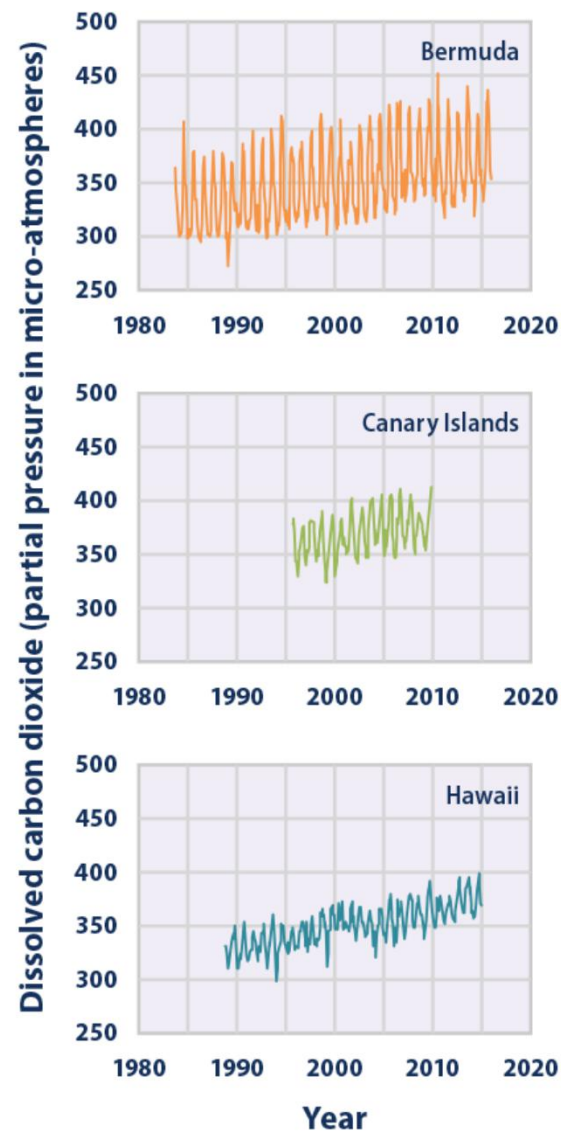
**The Ocean Heat Content, 1955–2015;
As compared against the 1971–2000 average**



**Average Global Sea Surface Temperature, 1880–2015
As compared against the 1971–2000 average**



Global Average Absolute Sea Level Change, 1880–2015



Impact 3: Acidity of Ocean Water

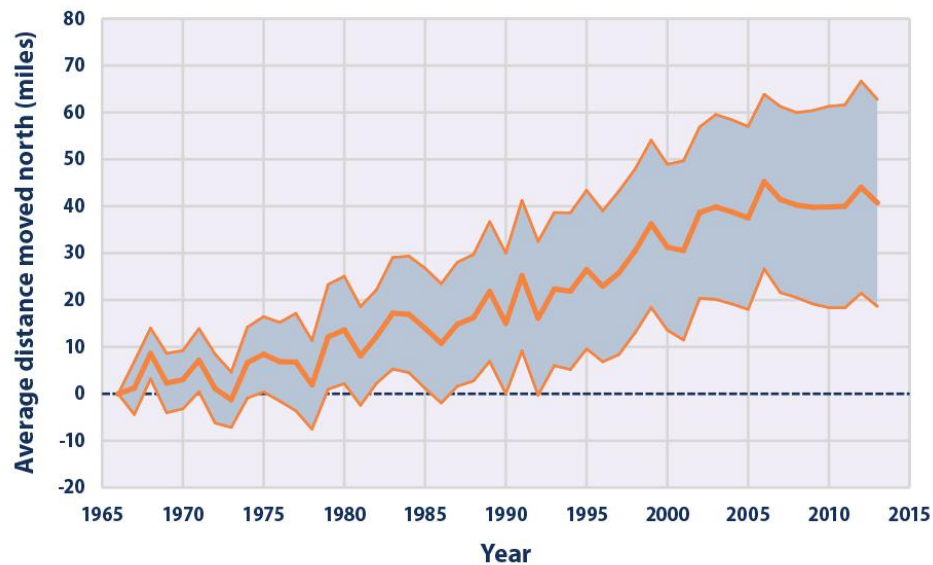
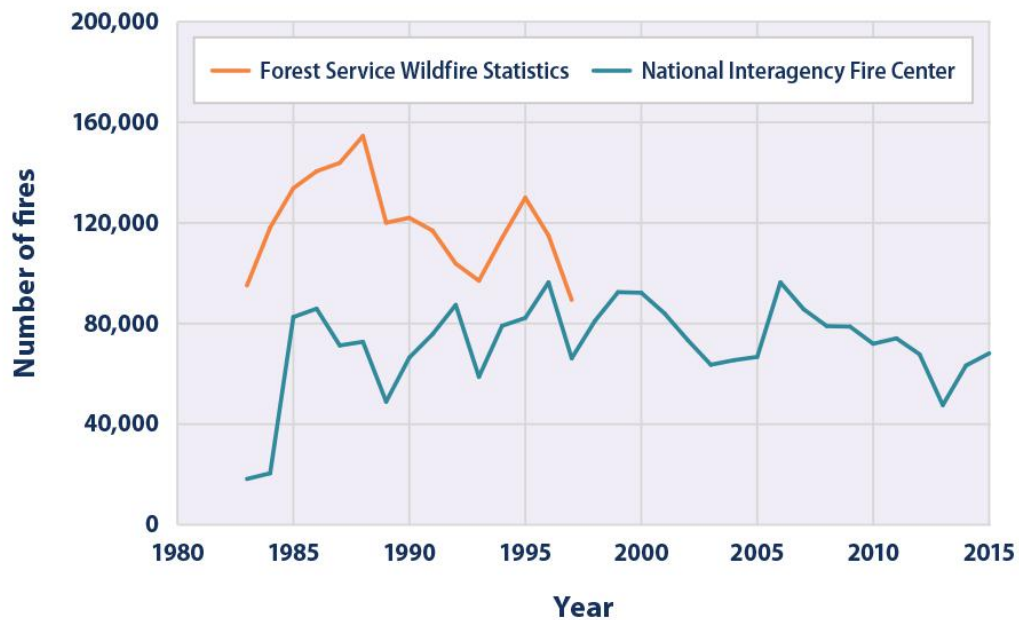
Data sources: Bates, N.R. 2016 update to data originally published in: Bates, N.R., M.H. Best, K. Neely, R. Garley, A.G. Dickson, and R.J. Johnson. 2012. Indicators of anthropogenic carbon dioxide uptake and ocean acidification in the North Atlantic Ocean. *Biogeosciences* 9:2509–2522.

González-Dávila, M. 2012 update to data originally published in: González-Dávila, M., J.M. Santana-Casiano, M.J. Rueda, and O. Llinás. 2010. The water column distribution of carbonate system variables at the ESTOC site from 1995 to 2004. *Biogeosciences* 7:3067–3081.

Dore, J. 2015 update to data originally published in: Dore, J.E., R. Lukas, D.W. Sadler, M.J. Church, and D.M. Karl. 2009. Physical and biogeochemical modulation of ocean acidification in the central North Pacific. *Proc. Natl. Acad. Sci. USA* 106:12235–12240.

(<https://www.epa.gov/climate-indicators/climate-change-indicators-ocean-acidity>)

Ocean Carbon Dioxide Levels and Acidity, 1983–2015

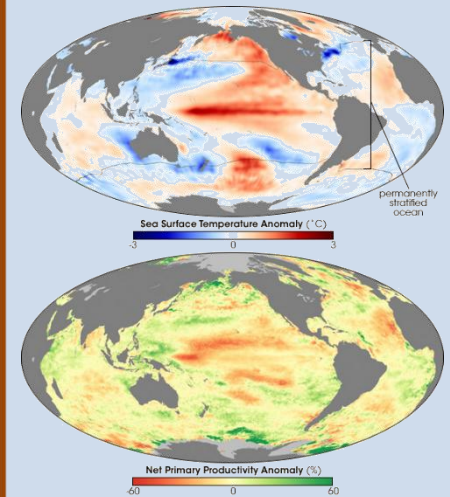
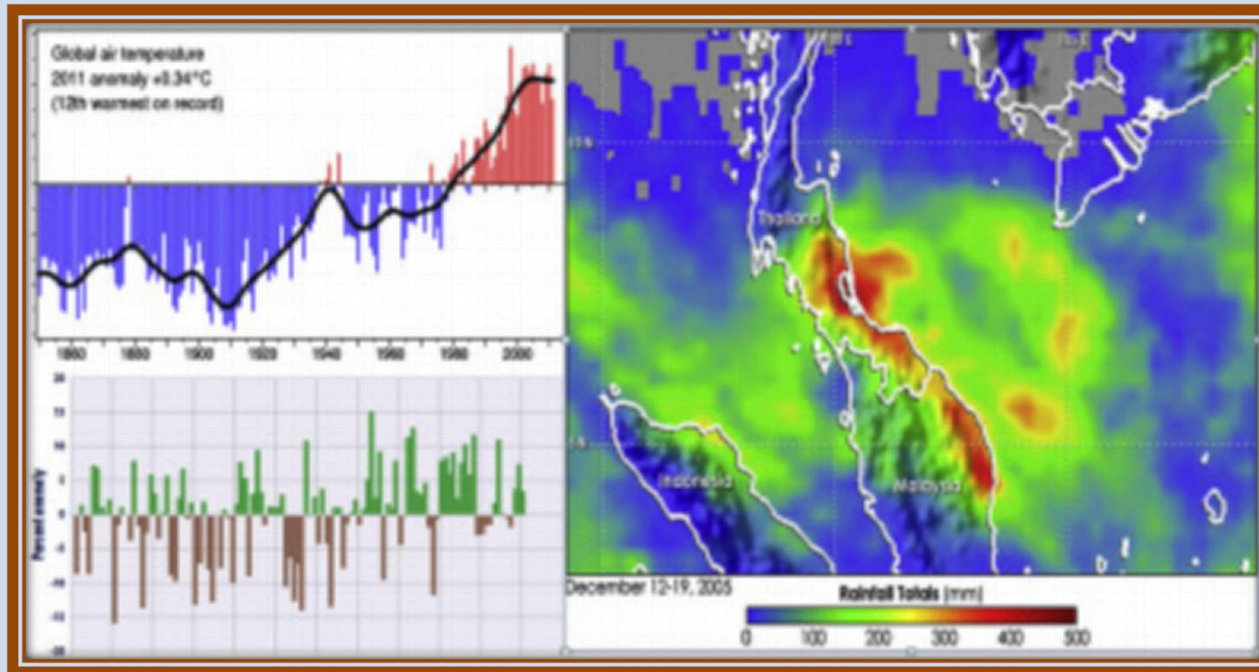


Increase in Wildfires



Widening of Bird Wintering Ranges





Severe Impact to the weather of the SE Asia:

Shifting of monsoon season in the SE Asia region,
 which is impacting on the variability of rainfall and the onset of monsoons
 It is predicted that onset of monsoon would be delayed for 15 days in the coming decades.

Water Quality, Microalgae and Red Tide Issues:
水质、微藻及红潮研究



不明疫症肆虐 福克蘭數千企鵝疫症死

福克蘭群島最著名的巴布亞企鵝(Gentoo Penguin, 俗稱紳士企鵝)最近受到不明疫症威脅,數以千計死亡,另有無數企鵝的身體出現局部癱瘓。

在阿根廷對開、鄰近南極圈的英屬福克蘭群島,當地衛生部近日每天都接到報告,指有紳士企鵝的屍體被沖上灘頭,又或牠們奄奄一息不能游泳或行動。

類似癱瘓還見諸麥哲倫企鵝(Magellanic Penguin),但科學家和獸醫尚未診斷出病因,情況且在持續惡化中。

福克蘭群島是世界上紳士企鵝最多聚居的地方,達11.5萬隻,佔全球總數的四成。然而正由於太密集居住於一處細小地方上,故牠們亦極易受到疫潮威脅。

紳士企鵝是世上游得最快的鳥類,其如待應般的趣致模樣,一直甚得人心,英國政府在聽聞紳士企鵝在英軍戰機大聲低飛刷過時翻倒後,還特別於去年花2.5

萬鎊在牠們的保健計劃上。對於突然有這麼多企鵝死亡和癱瘓,專家懷疑可能是當地出現紅潮,有毒海洋浮游生物的數目突然急增,毒害水域內的游魚,然後再令依靠捕食魚類為生的紳士企鵝受到感染。負責找出病源對症下藥的「福克蘭保育」發言人指出,海岸監察員曾報告海面出現「紅潮」。

疑紅潮肇禍

發言人說:「那些浮游微細植物叫做雙鞭類藻類(dinoflagellates),在特定情況下會大量繁殖至危險水平。最近,紅潮曾令沿巴塔哥尼亞海岸的若干

海貝漁場關閉。我們已請研究員拿海水樣本化驗,以確定紅潮是否禍源。」

衛報

北極冰層或本世紀消失

美國太空總署一項新研究顯示,因地球氣溫持續上升,長年漂浮在北極圈的廣大冰層,正以比原先想像更快的速度融解,甚至可能在本世紀內完全消失。

每10年融解9%

總署衛星監測發現,北極圈

冰層目前以每10年9%的速度融解,如這速度再維持幾十年,北極圈冰層可能會因地球氣溫上升以及冰層、海洋與大氣層之間的互動作用,加速融解過程,於本世紀結束前完全融化。這雖然不會影響海平面,但是可能在夏季對海運線、浮游生物、洋流系統和全球氣溫造成重大衝擊。

成重大衝擊。

全球高山冰層亦融解

據資料,今年頭11個月全球平均氣溫為攝氏14.65度,顯示今年可能是有氣象紀錄以來第二暖的一年,僅次於1998年的平均攝氏14.69度。

科學家也發現,在全球暖化

下,包括洛磯山、安底斯山、阿爾卑斯和喜馬拉雅山在內的世界主要山脈頂端的冰層都在融解。

因半數冰河已經消失,美國的冰河國家公園也許要被改名。專家預測公園內剩餘的冰河將會在未來三十年內消失。

中央社

紅潮毒殺南極企鵝



環保部

南極企鵝去年在福克蘭群島死亡事件,由水環學者揭發「紅潮」,造成公眾大驚。紅潮並非疫症,而是由藻類毒素引起。紅潮毒素在食物鏈中累積,企鵝吃了有毒的浮游生物後,毒素在體內累積,最終導致死亡。



紅潮奪命 福克蘭群島上萬隻企鵝集體死亡,香港大學生物學系教授李國威(右)與研究員在現場調查。



有海洋浮游生物,企鵝吞食中後,現存體內毒素。對「紅潮」應有警惕,對於紅潮應有警惕,紅潮並非疫症,而是由藻類毒素引起。紅潮毒素在食物鏈中累積,企鵝吃了有毒的浮游生物後,毒素在體內累積,最終導致死亡。

港聞

港學者揭企鵝集體死亡之謎

屬於福克蘭群島的南極企鵝品種

【記者黎曉晴報導】福克蘭群島是南極以外最多企鵝聚居的地方,去年出現大批企鵝死亡事件,引起公眾大驚。香港大學生物學系教授李國威(右)與研究員在現場調查。

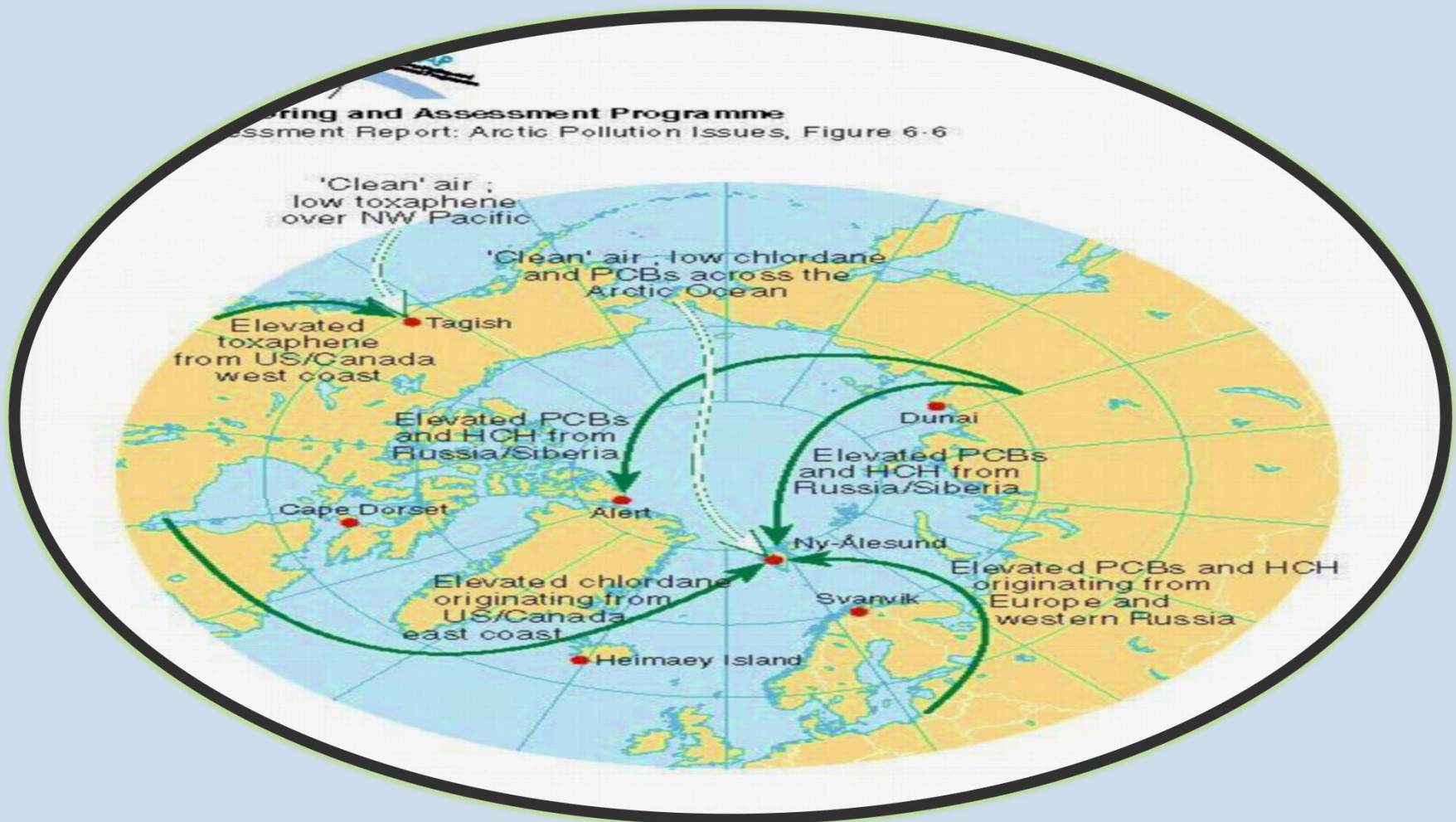
紅潮奪命 福克蘭群島上萬隻企鵝集體死亡,香港大學生物學系教授李國威(右)與研究員在現場調查。



EHT-12.00 KV WD= 13 mm Mag= 2.12 K X
1um Photo No.=18 Detector= SE1

This slide shows the wind circulation near Svalbard Isles. In fact, numerous scientific reports (e.g. Arctic Monitoring and Assessment Programme, 2001) have shown that the Norwegian arctic has been polluted by European industries.

大气污染来自北半球的工业大国



THE STRAITS TIMES
ROUNDTABLE
HOMELESSNESS: WHOSE PROBLEM IS IT?



Greenland confirms first case of coronavirus



In a file photo taken on June 15, 2018, snow-covered mountains rise above the harbour and town of Tasiilaq, in Greenland. PHOTO: REUTERS

PUBLISHED MAR 17, 2020, 12:03 AM SGT



MEDICAL INSPIRE

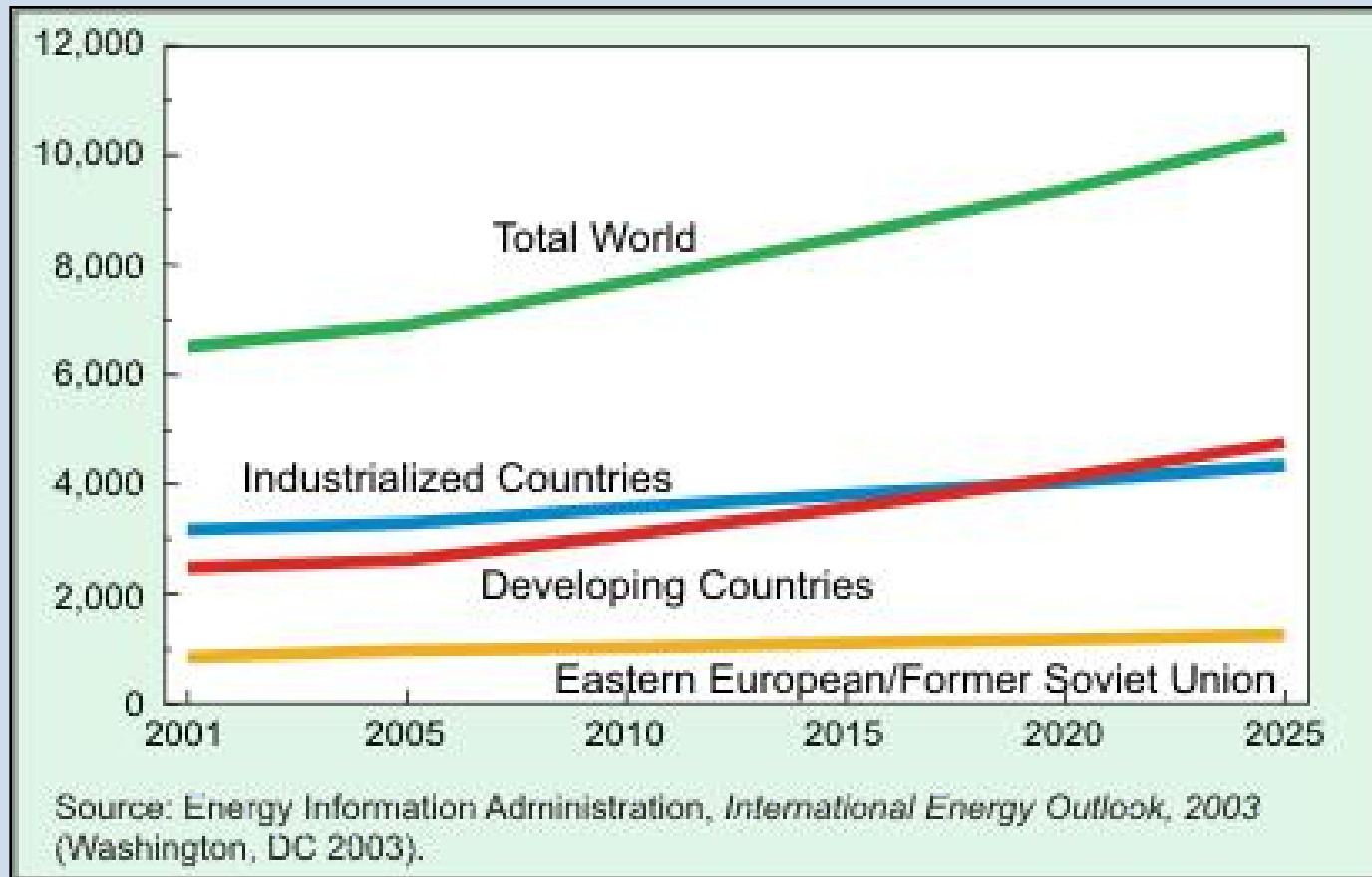
北極失守 格陵蘭首現確診

北極圈的格陵蘭島政府周一（16日）宣布，境內出現首宗確診個案，患者居於首都努克。

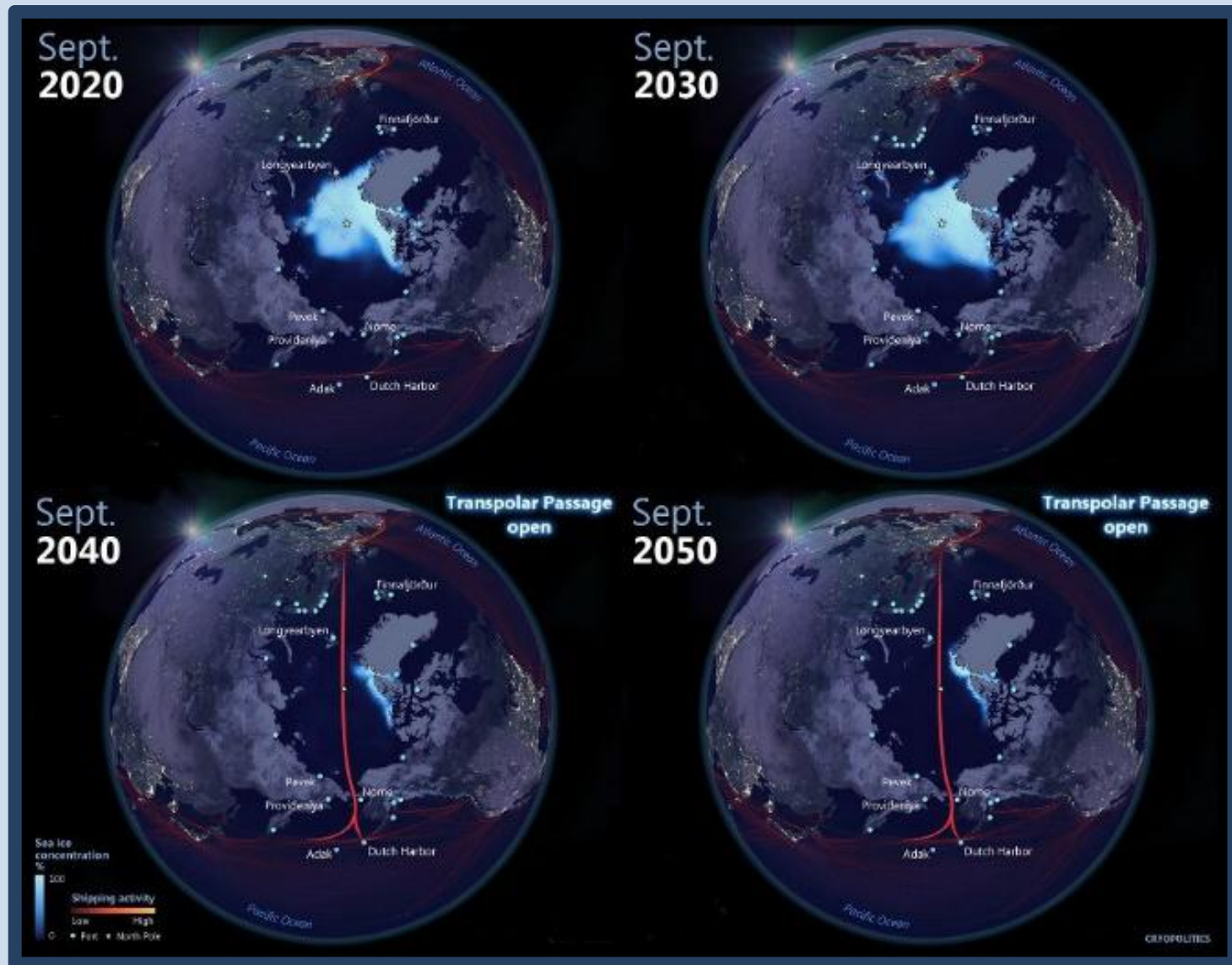
www.medicalinspire.com

f medicalinspire

2001-2025年 世界二氧化碳排放量（以百萬噸「碳當量」計）的趨勢
Trend of global green house gases increased from 2001 to 2025

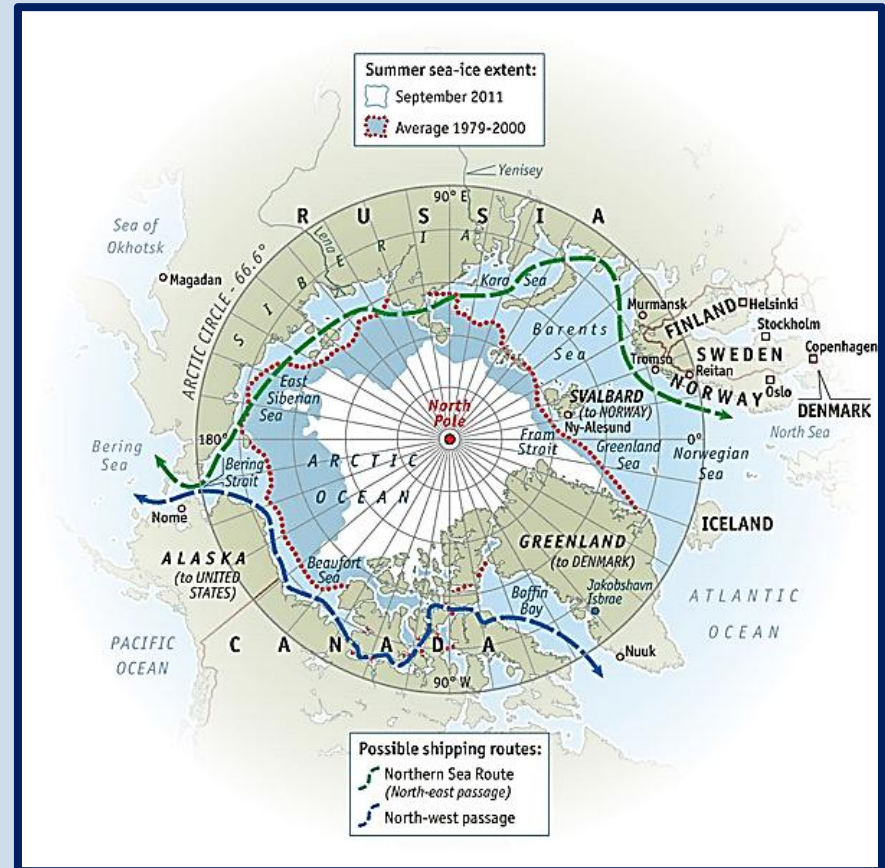


Predicted Ice **Melting** from Now – 2050 :



Challenge is opportunity
Challenge for opportunities:

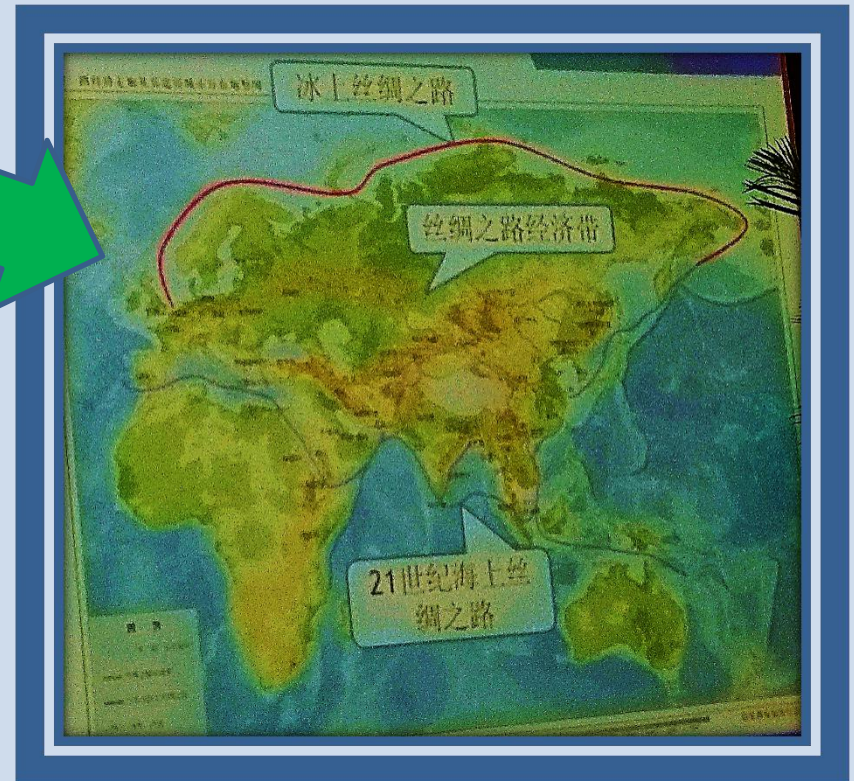
The Change of Future Shipping Route esp. in the N. Hemisphere :



Round the world in ? Days in 2050 ????



The new 'Belt and Road' initiatives



If climate change is an undeniable Truth, What should we do?

My views:

1. Prevention
2. Control and Management
3. Mitigation
4. Adaptation
5. Resilience
6. Scientific research (to support)
7. Monitoring, early warning and forecast
8. From harmful to beneficial (mindset and paradigm change) !

All finance related !

Way of solution: Green Finance Certificate

解决前景：认证计划



2018.1.
**Green Finance
Certification Scheme**

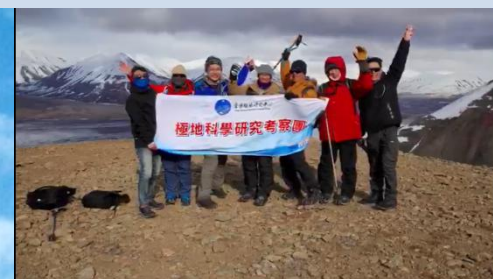
2017.12 green bond
2018.2. green loan
2019.9. incl. funds



做個忠心的
地球管家 !!



Be a Faithful Steward of the Earth !



需要有一個屬於香港人自己擁有(的科研站)

