

Leaving no one behind

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- pokračování úspěšného rozvojového projektu 8MDG ?



# Jaké další změny ŽP považujete za globální výzvy?

Top



2015 - 2030

## Sustainable development goals (SDG)

- pokračování úspěšného rozvojového projektu 8MDG ?
- stanoveno 17 oblastí se 169 cíly !!!





# CÍLE UDRŽITELNÉHO ROZVOJE





# SUSTAINABLE DEVELOPMENT GOALS

**1** NO POVERTY

**2** ZERO HUNGER

**3** GOOD HEALTH AND WELL-BEING

**4** QUALITY EDUCATION

**5** GENDER EQUALITY

**6** CLEAN WATER AND SANITATION

**7** AFFORDABLE AND CLEAN ENERGY

**8** DECENT WORK AND ECONOMIC GROWTH

**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE

**10** REDUCED INEQUALITIES

**11** SUSTAINABLE CITIES AND COMMUNITIES

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION

**13** CLIMATE ACTION

**14** LIFE BELOW WATER

**15** LIFE ON LAND

**16** PEACE, JUSTICE AND STRONG INSTITUTIONS

**17** PARTNERSHIPS FOR THE GOALS

  
SUSTAINABLE DEVELOPMENT GOALS

**2015 - 2030**

**Sustainable development goals (SDG)**

- Pokračování úspěšného projektu 8MDG
- Stanoveno 17 cílů se 169 podcíli !!!

**„mnoho priorit = žádná priorita“**

# Jak prioritizovat „nejlepší“ rozvojové cíle?





# Jak prioritizovat „nejlepší“ cíle?

## A New Way to Set Goals for Fighting World Poverty

Experts have long argued over the best way to reduce poverty and disease around the globe. A group of leading economists has been gathering periodically over the past several years to assess the wisest ways to spend limited funds to promote global development. Their conclusions and ranking methods offer both a new perspective and a challenge to some current orthodoxies about foreign aid. In their most recent assessment, in June, the group—convened by the [Copenhagen Consensus Center](#)—offered a preliminary assessment of the targets proposed by the UN's Open Working Group on Sustained Development Goals.

The Copenhagen Consensus Center group compared the cost of each goal to its likely benefits on a scale from phenomenal to poor or uncertain. Their question: For every dollar spent, how much good is done for the world's poor? Here are some of their rankings. ([Related article: Five Ways to Outgrow World Poverty](#))

Ratings key:

**PHENOMENAL** – Robust evidence for benefits more than 15 times higher than costs

**GOOD** – Robust evidence of benefits between 5 to 15 times higher than costs

**FAIR** – Robust evidence of benefits between 1 to 5 times higher than costs

**POOR** – The benefits are smaller than costs or target poorly specified (e.g. internally inconsistent, incentivizes wrong activity)

**UNCERTAIN** – There is not enough knowledge of the policy options that could reach the target OR the costs and benefits of the actions to reach the target are not well known

*Note: We excluded any goals that had ratings across several categories or any that the group didn't assess. See the [full report here](#).*

<< first < prev 1 **2** 3 4 next > last >>

Target	Proposed Goal ▲	Rating
By 2020, provide legal identity for all, including birth registrations	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Good
Forge unity in diversity through democratic practices and mechanisms at the local, national and international levels	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Poor
Promote freedom of media, association and speech	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Poor
By 2030, reduce levels of violence and related death rate by x%	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Uncertain
By 2030, end abuse, exploitation and violence against children	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Uncertain
By 2030, increase inclusive, participatory and representative decision-making at all levels, taking into consideration the interests of present and future generations	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Uncertain
By 2020, provide information and education on a culture of non-violence	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	Uncertain
By 2020, effectively regulate harvesting and end overfishing to restore by 2030 fish stocks to ecologically safe levels that can produce maximum sustainable yield	Attain conservation and sustainable use of marine resources, oceans and seas	Phenomenal
By 2020, eliminate subsidies which contribute to overcapacity and overfishing, and refrain from introducing new such subsidies, taking into account the need of developing countries, notably least developed countries and SIDS	Attain conservation and sustainable use of marine resources, oceans and seas	Phenomenal

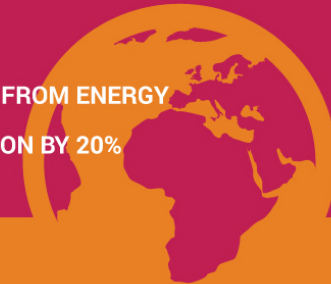
# Smarter Global Targets to 2030

## PEOPLE

- LOWER CHRONIC CHILD MALNUTRITION BY 40%
- HALVE MALARIA INFECTION
- REDUCE TUBERCULOSIS DEATHS BY 90%
- AVOID 1.1M HIV INFECTIONS THROUGH CIRCUMCISION
- CUT EARLY DEATH FROM CHRONIC DISEASE BY 1/3
- REDUCE NEWBORN MORTALITY BY 70%
- INCREASE IMMUNIZATION TO REDUCE CHILD DEATHS BY 25%
- MAKE FAMILY PLANNING AVAILABLE TO EVERYONE
- ELIMINATE VIOLENCE AGAINST WOMEN AND GIRLS

## PLANET

- PHASE OUT FOSSIL FUEL SUBSIDIES
- HALVE CORAL REEF LOSS
- TAX POLLUTION DAMAGE FROM ENERGY
- CUT INDOOR AIR POLLUTION BY 20%



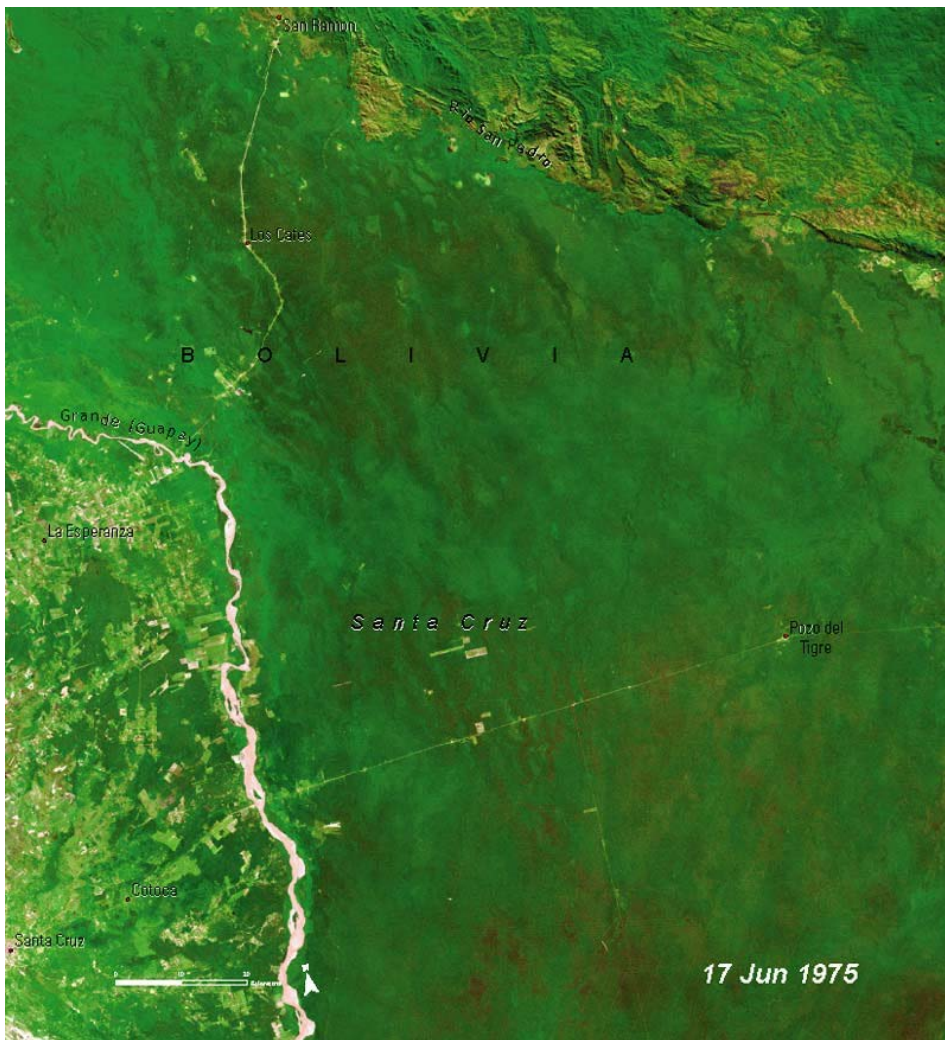
## PROSPERITY

- REDUCE TRADE RESTRICTIONS (FULL DOHA)
- IMPROVE GENDER EQUALITY IN OWNERSHIP, BUSINESS AND POLITICS
- BOOST AGRICULTURAL YIELD GROWTH BY 40%
- INCREASE GIRLS' EDUCATION BY TWO YEARS
- ACHIEVE UNIVERSAL PRIMARY EDUCATION IN SUB-SAHARAN AFRICA
- TRIPLE PRESCHOOL IN SUB-SAHARAN AFRICA

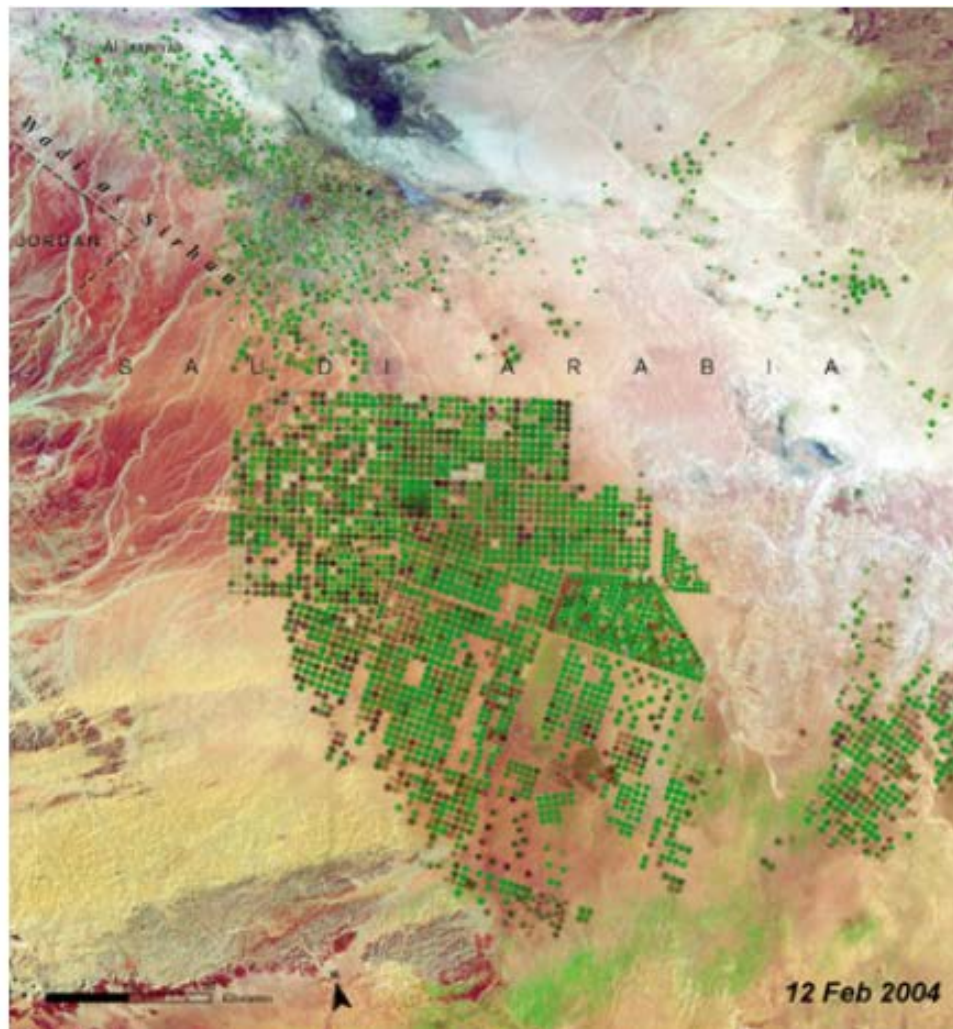
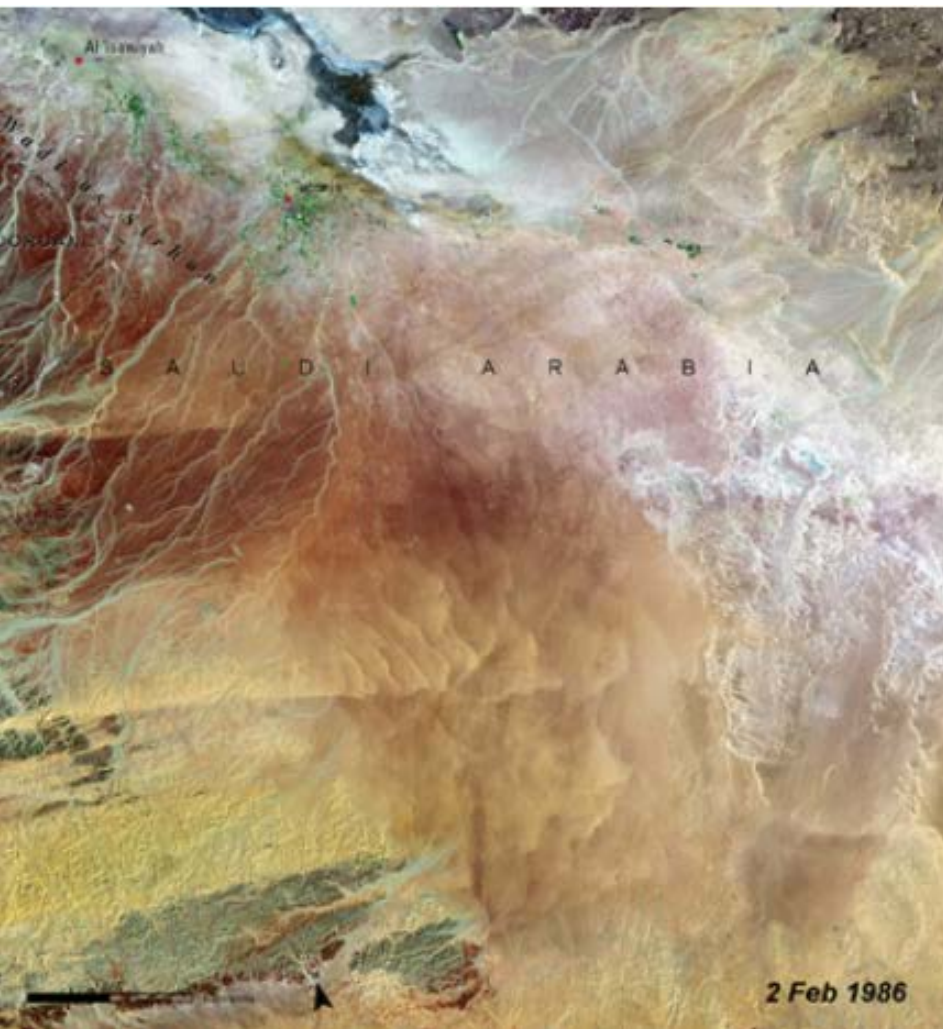
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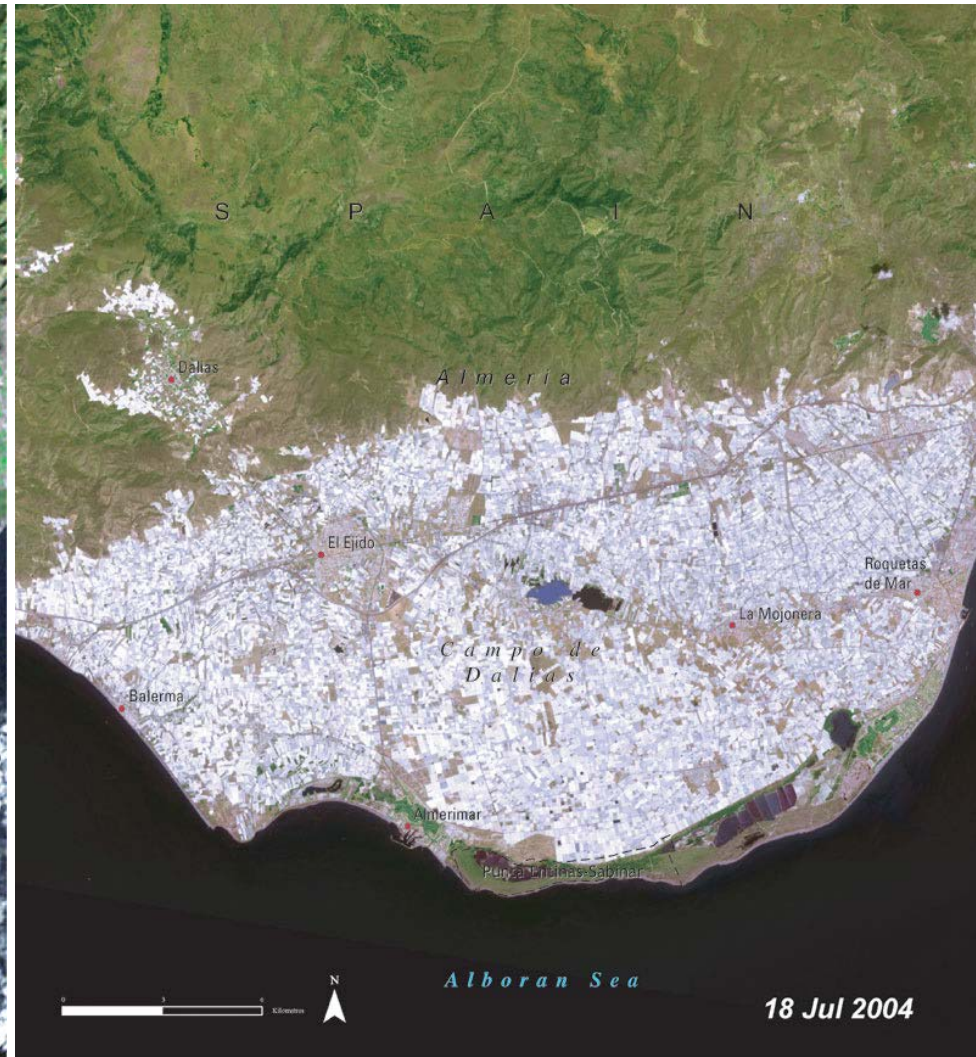
# Santa Cruz, Bolívia



# Al'Isawiyah, Saudi Arabia

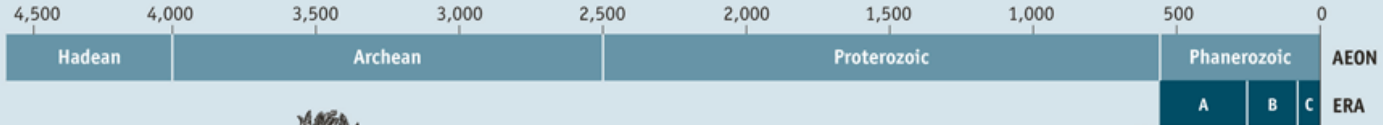


# Almeria, Spain



# Prahory - čtvrtohory...

MILLIONS OF YEARS AGO





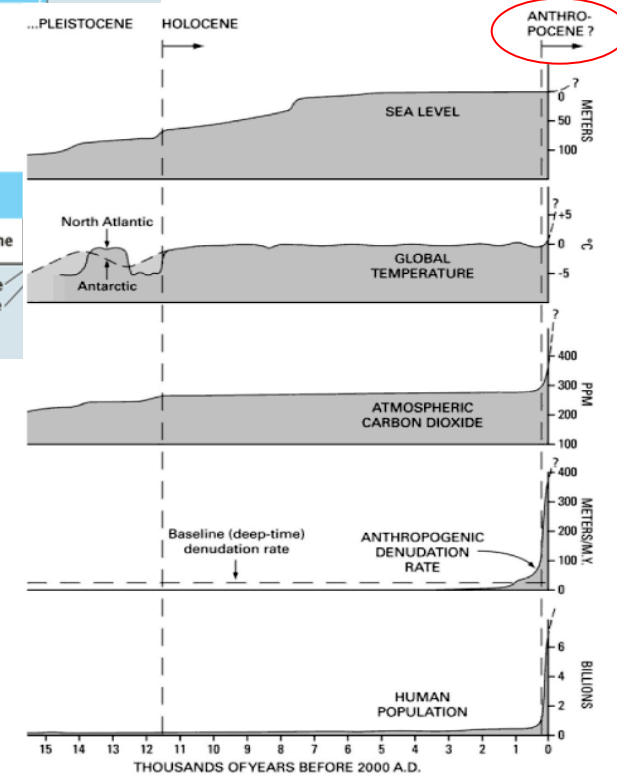
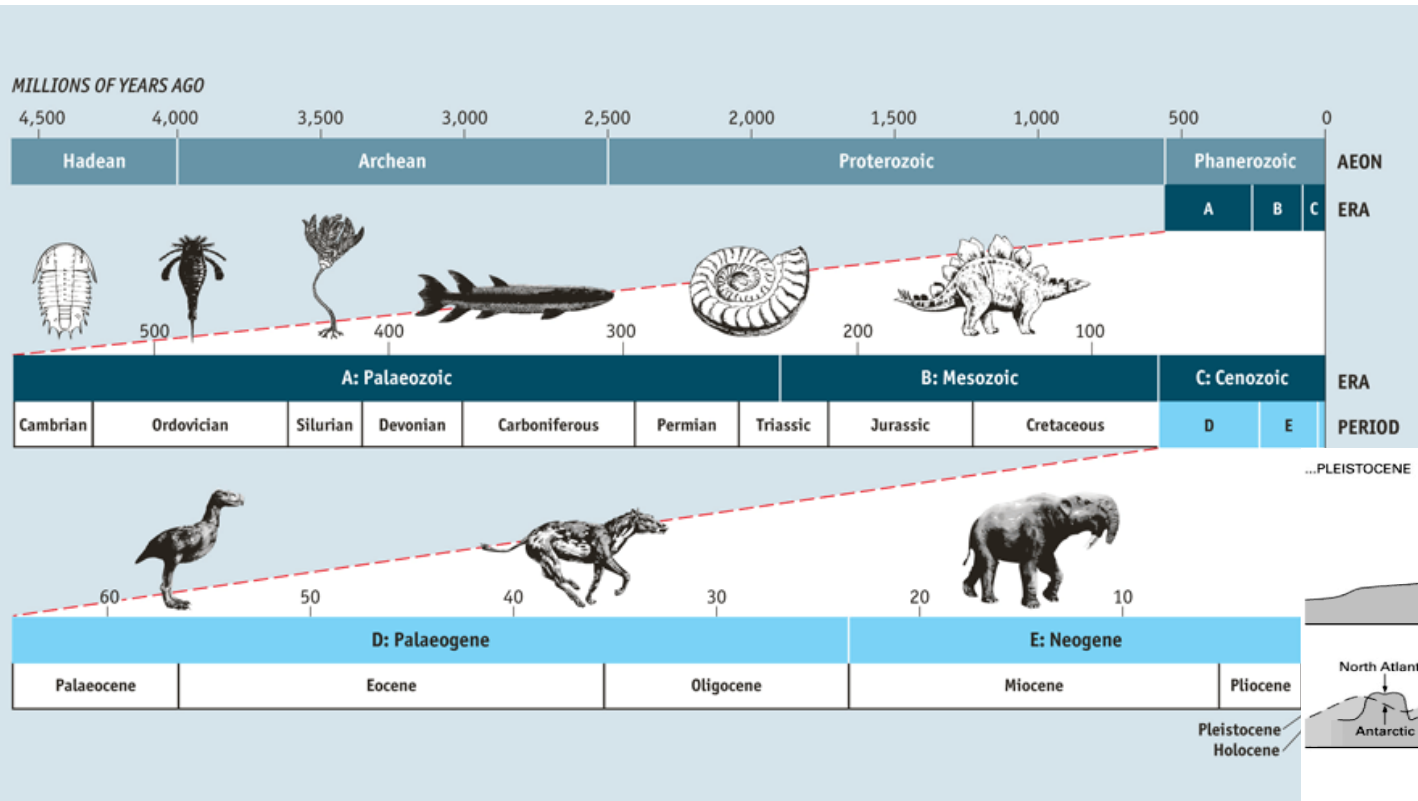






# Jak se nazývá geologické období, ve kterém ted' žijeme?

# Prahory - čtvrtohory...



## Geology of mankind

Paul J. Crutzen

For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behavior, forming a new geological epoch.

referring to the "anthropozoic era". And in 1926, V. I. Vernadsky acknowledged the increasing impact of mankind: "The direction in which the processes of evolution must proceed, namely towards increasing consciousness and thought, and forms having greater and greater influence on their surroundings." Teilhard de Chardin and

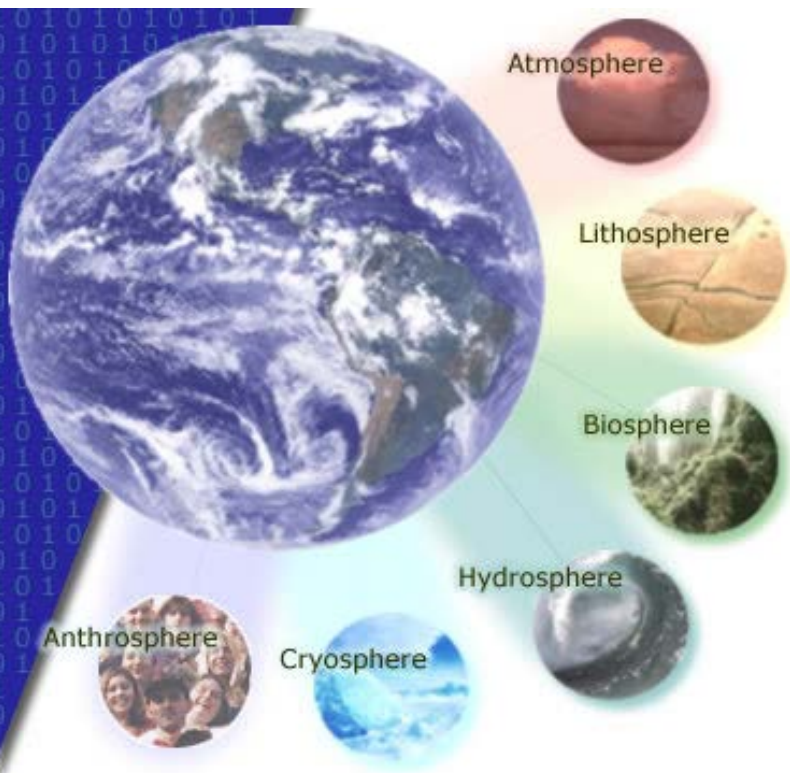
### The Anthropocene

The Anthropocene could be said to have started in the late eighteenth century, when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane.

# Antropocén



- geologický termín zpopularizovaný P. Crutzenem
- od průmyslové revoluce / WW2 (1/2 18. stol. či 1/2 20. st.?)
- období, kdy člověk začal představovat dominantní sílu měnící stav „Zemského systému“



Zemský systém – integrované biofyzikálně-socio-ekonomické procesy a interakce mezi hydro-, kryo-, bio-, geo- a antroposférou v prostorovém (od lokálních po globální) a časovém měřítku, jež určují environmentální stav planety v rámci její pozice ve vesmíru.

**Co může být považováno za "otisk"  
aktuálně probíhajícího Antropocénu? Co  
uvidí budoucí archeolog až za 1,000,000 let  
bude zkoumat dnešek?**

**Top**

## Is Earth in a new geological phase thanks to us?

- › 10 November 2014 by [Jan Zalasiewicz](#)
- › Magazine issue 2994. [Subscribe and save](#)
- › For similar stories, visit the [Comment and Analysis](#) Topic Guide

*It may be time for science to recognise Earth's new era – one shaped by humans. So argues a geologist involved in defining new phases in geological time*

WHAT is the legacy that short-lived humanity will leave to an almost eternal Earth? The casual observer might point to tourist sights such as the once mighty city of Angkor, now lying ruined amid the Cambodian jungle, or what survives of the great monuments of ancient Egypt.

They are wonderful, of course, but there is another way to address that question. A little-known working group, part of the International Commission on Stratigraphy, recently met to consider if the human imprint on Earth is now so great, and likely to be detectable for so long, that it deserves to be regarded as a geological epoch in its own right. That would be our real legacy.

Such discussion is not new. George Perkins Marsh, North America's first conservationist, wrote of humans changing the face of the Earth. In 1873 the Italian geologist Antonio Stoppani coined the term *Anthropozoic* – the era in which humans change the course of geological history. Most geologists declared the idea nonsense. The constructions of civilisation may look impressive, they said, but must surely be trivial when set against the collisions of continents and the growth and disappearance of the oceans. When humans disappear, the world will resume its course, and few of our monuments will be left.

But over the past few decades it has become clear that human activities can have geologically far-reaching effects. Science writer Andrew Revkin suggested we were living in what he called the *Anthrocene*; John Curnutt of the US Geological Survey, awed at the transplanting of species across the globe, proposed the *Homogenocene*; marine biologist Daniel Pauly saw the oceans' future as one of slime and jellyfish as a result of overfishing and pollution, and invented the *Myxocene*.

But it was one of the world's most respected scientists, the Nobel-prizewinning atmospheric chemist Paul Crutzen, who proved most influential. He argued that the Holocene, the geological epoch of post-glacial stability in which civilisation arose, had ended and been replaced by the *Anthropocene*, an epoch shaped by humans.

The idea took off. The term was used as if it were a formal epoch. It isn't – but

# Marks of the Anthropocene: 7 signs we have made our own epoch



By [Sam Wong](#)

Even if [humanity is long gone](#) in tens of millions of years, there will still be a clear sign of us and the way we lived left preserved in our planet's geological record.

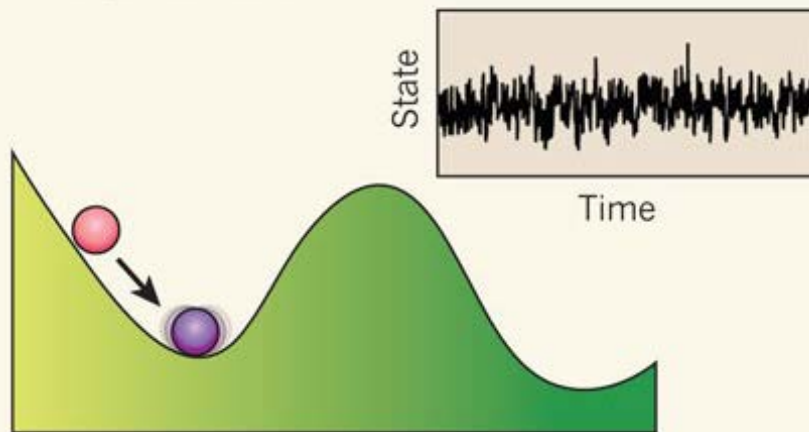
There is now overwhelming evidence that our impact on Earth constitutes its own distinct geological epoch, dating from the middle of the 20th century. Here are the seven signs that will clearly identify the *Anthropocene epoch* for future geologists.

## 1. Nuclear weapons

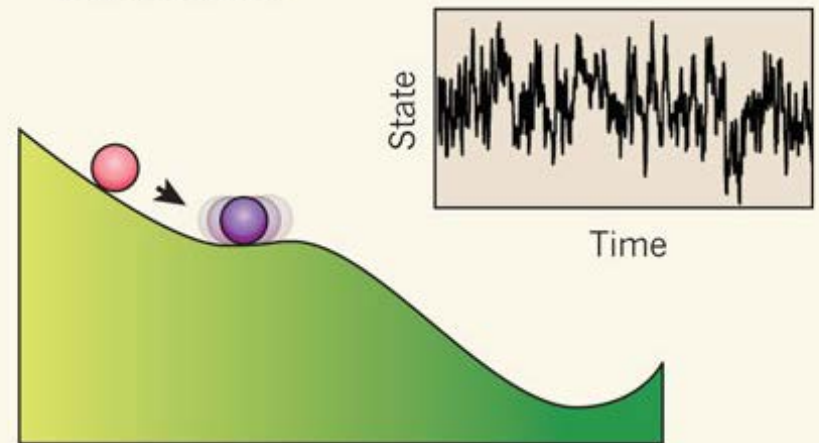
Our war efforts have left their mark on geology. When the first nuclear weapon was detonated on 16 July 1945 in New Mexico, it deposited radionuclides – atoms with excess nuclear energy – across a wide area. Since 1952, more explosive thermonuclear weapons have been tested, leaving a global signature of isotopes such as carbon-14 and plutonium-239.

# Proč nás to má zajímat?

**a** Low risk of transition  
High resilience



**b** High risk of transition  
Low resilience



## FEATURE

## A safe operating space for humanity

Identifying and quantifying planetary boundaries that must not be transgressed could help prevent human activities from causing unacceptable environmental change, argue **Johan Rockström** and colleagues.

Although Earth has undergone many periods of significant environmental change, the planet's environment has been unusually stable for the past 10,000 years<sup>1-3</sup>. This period of stability — known to geologists as the Holocene — has seen human civilizations arise, develop and thrive. Such stability may now be under threat. Since the Industrial Revolution, a new era has arisen, the Anthropocene<sup>4</sup>, in which human actions have become the main driver of global environmental change<sup>5</sup>. This could see human activities push the Earth system outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic for large parts of the world.

During the Holocene, environmental change occurred naturally and Earth's regulatory capacity maintained the conditions that enabled human development. Regular temperatures, freshwater availability and biogeochemical flows all stayed within a relatively narrow range. Now, largely because of a rapidly growing reliance on fossil fuels and



## SUMMARY

- New approach proposed for defining preconditions for human development
- Crossing certain biophysical thresholds could have disastrous consequences for humanity
- Three of nine interlinked planetary boundaries have already been overstepped

industrialized forms of agriculture, human activities have reached a level that could damage the systems that keep Earth in the desirable Holocene state. The result could be irreversible and, in some cases, abrupt environmental change, leading to a state less conducive to human development<sup>6</sup>. Without pressure from humans, the Holocene is expected to continue for at least several thousands of years<sup>7</sup>.

## Planetary boundaries

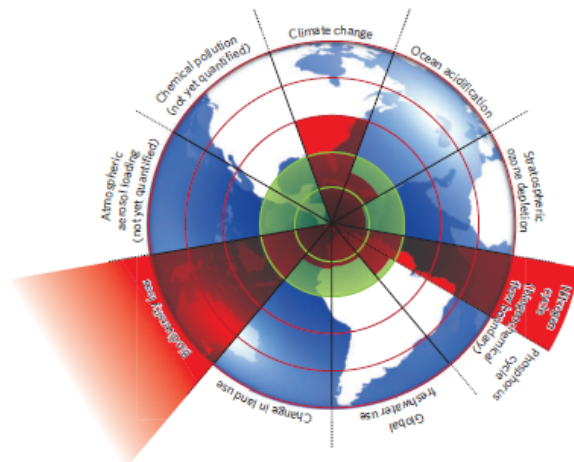
To meet the challenge of maintaining the Holocene state, we propose a framework based on 'planetary boundaries'. These

boundaries define the safe operating space for humanity with respect to the Earth system and are associated with the planet's biophysical subsystems or processes. Although Earth's complex systems sometimes respond smoothly to changing pressures, it seems that this will prove to be the exception rather than the rule. Many subsystems of Earth react in a nonlinear, often abrupt, way, and are particularly sensitive around threshold levels of certain key variables. If these thresholds are crossed, then important subsystems, such as a monsoon system, could shift into a new state, often with deleterious or potentially even disastrous consequences for humans<sup>8,9</sup>.

Most of these thresholds can be defined by a critical value for one or more control variables, such as carbon dioxide concentration. Not all processes or subsystems on Earth have well-defined thresholds, although human actions that undermine the resilience of such processes or subsystems — for example, land and water degradation — can increase the risk that thresholds will also be crossed in other processes, such as the climate system.

We have tried to identify the Earth-system processes and associated thresholds which, if crossed, could generate unacceptable environmental change. We have found nine such processes for which we believe it is necessary to define planetary boundaries: climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorus cycles; stratospheric ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading (see Fig. 1 and Table).

In general, planetary boundaries are values for control variables that are either at a 'safe' distance from thresholds — for processes with evidence of threshold behaviour — or at dangerous levels — for processes without



**Figure 1 | Beyond the boundary.** The inner green shading represents the proposed safe operating space for nine planetary systems. The red wedges represent an estimate of the current position for each variable. The boundaries in three systems (rate of biodiversity loss, climate change and human interference with the nitrogen cycle), have already been exceeded.



## A safe operating space for humanity (Rockström et al., 2009)

1a) In which geological period, and when human civilization arise and thrive?

1b) Why the development of our civilization was possible in this period?

1c) What can jeopardize a continuity of our development in the future?

Although Earth has undergone many periods of significant environmental change, the planet's environment has been unusually stable for the past 10,000 years<sup>1-3</sup>. This period of stability — known to geologists as the Holocene — has seen human civilizations arise, develop and thrive. Such stability may now be under threat. Since the Industrial Revolution, a new era has arisen, the Anthropocene<sup>4</sup>, in which human actions have become the main driver of global environmental change<sup>5</sup>. This could see human activities push the Earth system outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic for large parts of the world.

During the Holocene, environmental change occurred naturally and Earth's regulatory capacity maintained the conditions that enabled human development. Regular temperatures, freshwater availability and biogeochemical flows all stayed within a relatively narrow range. Now, largely because of a rapidly growing reliance on fossil fuels and

industrialized forms of agriculture, human activities have reached a level that could damage the systems that keep Earth in the desirable Holocene state. The result could be irreversible and, in some cases, abrupt environmental change, leading to a state less conducive to human development<sup>6</sup>. Without pressure from humans, the Holocene is expected to continue for at least several thousands of years<sup>7</sup>.

## A safe operating space for humanity (Rockström et al., 2009)

### 2a) What are the “Planetary boundaries” about?

#### **Planetary boundaries**

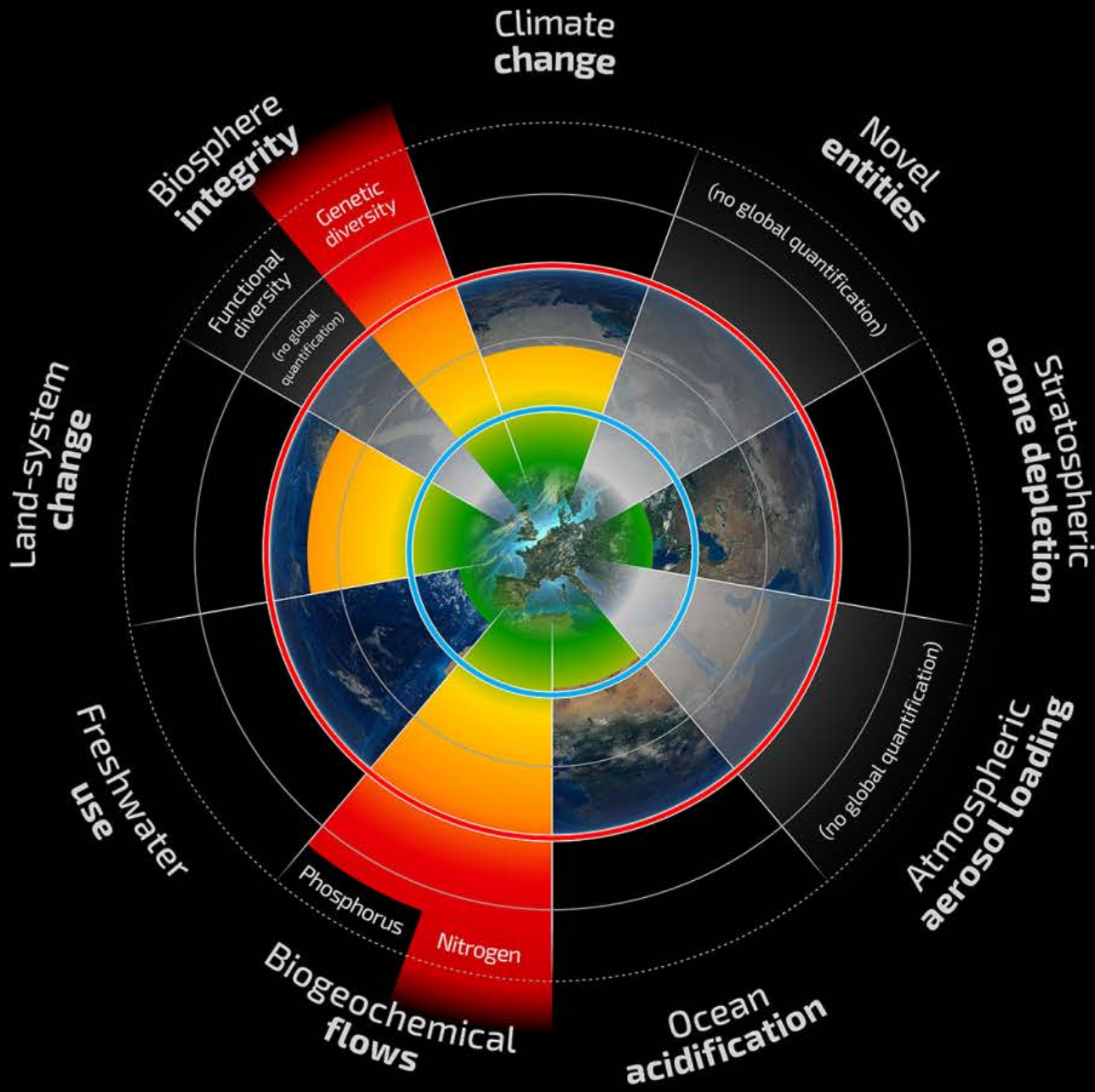
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### 2b) Which Earth-system processes were identified (9)?

We have tried to identify the Earth-system processes and associated thresholds which, if crossed, could generate unacceptable environmental change. We have found nine such processes for which we believe it is necessary to define planetary boundaries: climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorus cycles; stratospheric ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading (see Fig. 1 and Table).

# Planetary Boundaries

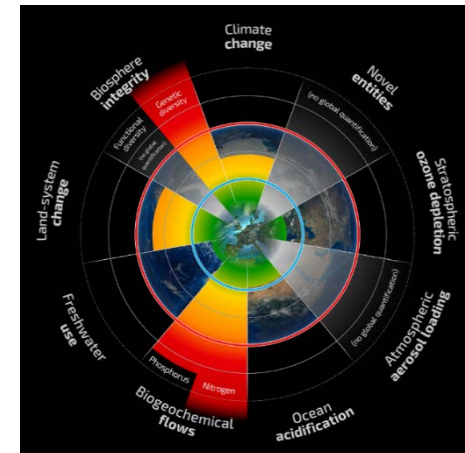
A safe operating space for humanity



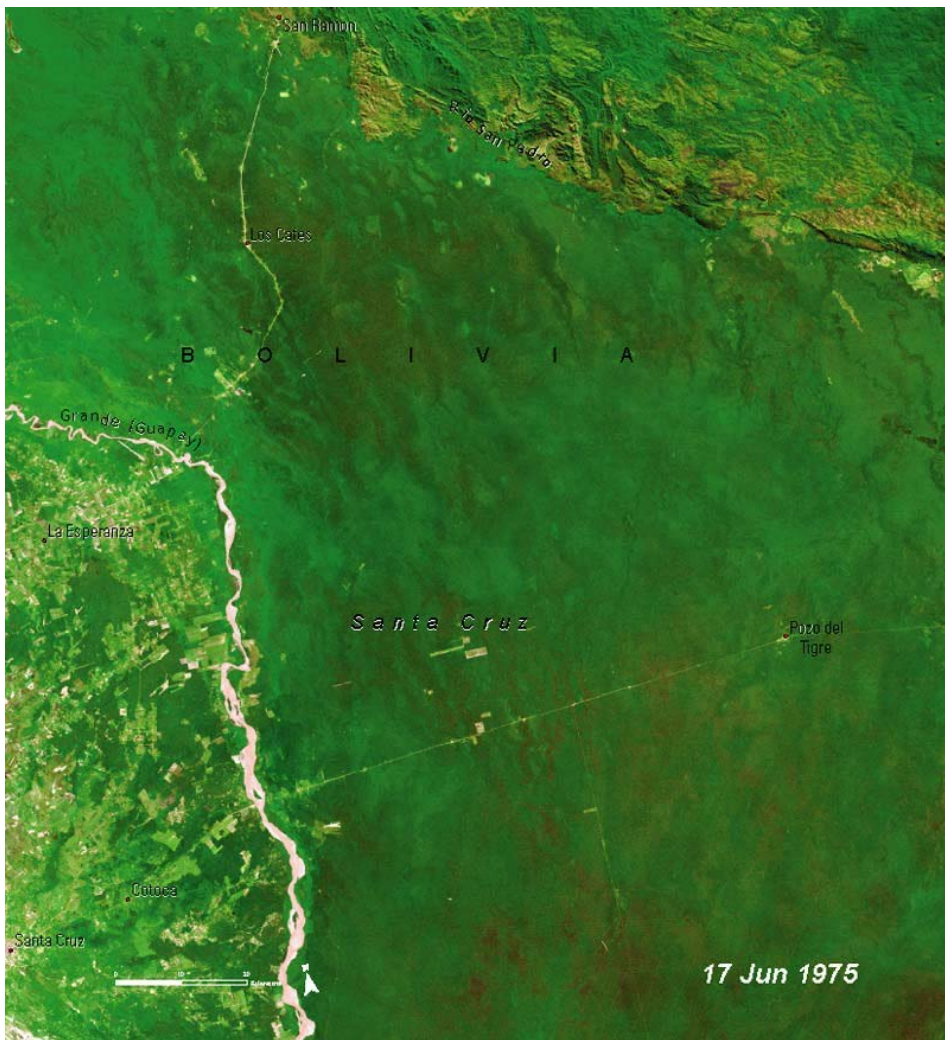
- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

# I. Změna využívání krajiny

Earth-system process	Control variable(s)	Planetary boundary (zone of uncertainty)	Current value of control variable
Land-system change (R2009: same)	<i>Global:</i> Area of forested land as % of original forest cover	<i>Global:</i> 75% (75–54%) Values are a weighted average of the three individual biome boundaries and their uncertainty zones	62%
	<i>Biome:</i> Area of forested land as % of potential forest	<i>Biome:</i> Tropical: 85% (85–60%) Temperate: 50% (50–30%) Boreal: 85% (85–60%)	



# Santa Cruz, Bolivia



# Změna využívání krajiny

- **zemědělství** (především)
- posledních 50 změna na zemědělskou půdu - 0,8% ročně
- hlavní síla řídící ztrátu **ekosystémových funkcí a služeb** (např. produkce potravin a cyklus vody), ztrátu biodiverzity a podkopává lidský blahobyt a dlouhodobou udržitelnost
- při překročení únosné míry využívání v určitém regionu může dojít k náhlé změně charakteru krajiny

# Parts of Amazon close to tipping point

› 13:52 05 March 2009 by [Catherine Brahic](#)

› For similar stories, visit the [Endangered Species](#) Topic Guide

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The Mato Grosso, the most scarred region of the Amazon rainforest, is teetering on a deforestation "tipping point", and may soon be on a one-way route to becoming a dry and relatively barren savannah.

[Mônica Carneiro Alves Senna](#) and colleagues at the Federal University of Viçosa, Brazil, used computer models to simulate how the Amazon would recover from various amounts of deforestation. Their simulations ranged from a complete wipe-out of the entire forest to a situation where just one fifth of the forest would be removed.

# Parts of Amazon close to tipping point

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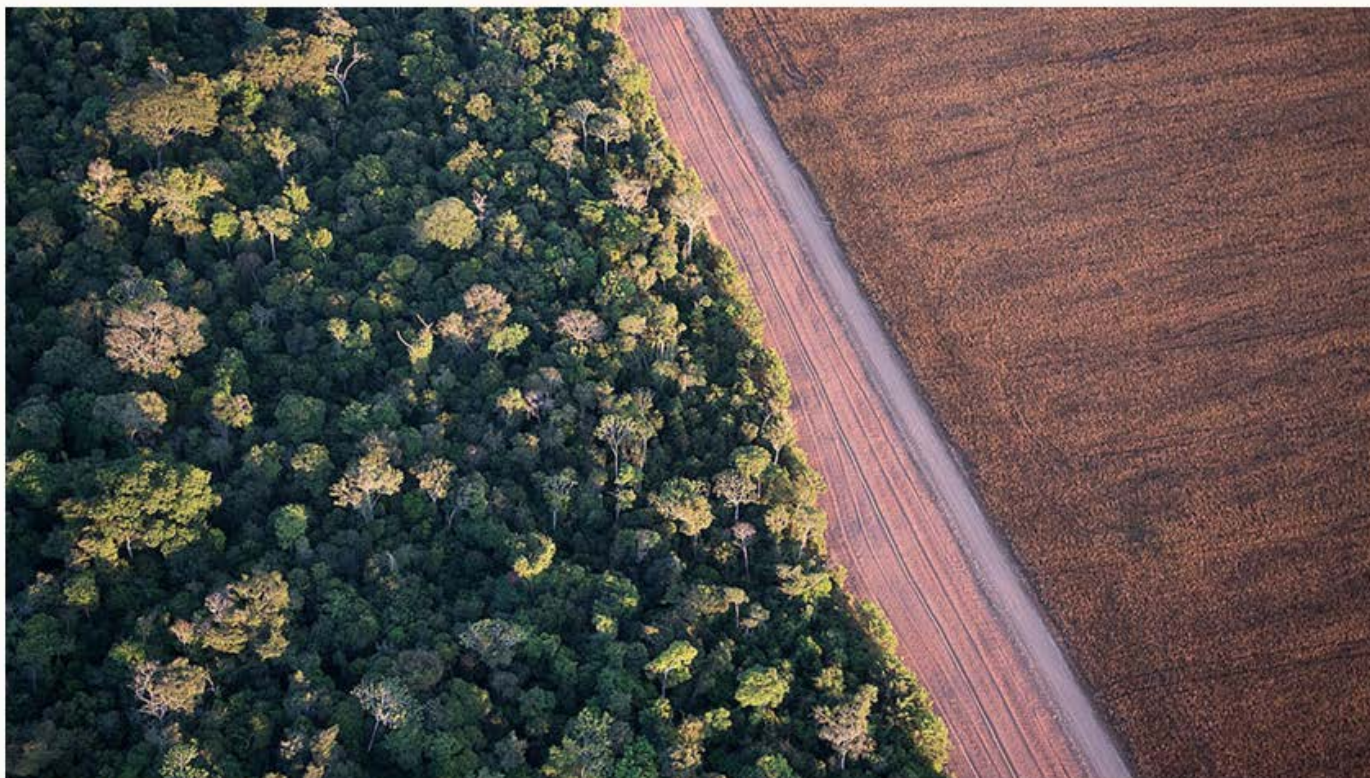
The Mato Gros  
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Mônica Carnei  
Viçosa, Brazil  
recover from wa  
complete wipe  
forest would be

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The boundary between Tanguro Farm and the Amazon rainforest in Mato Grosso, Brazil. COURTESY OF CHRIS LINDER

## Amazon Watch: What Happens When the Forest Disappears?

*At a remote site where the world's largest rainforest abuts land cleared for big agriculture, Brazilian and American scientists are keeping watch for a critical tipping point - the time when the Amazon ceases to be a carbon sink and turns into a source of carbon emissions.*

BY FRED PEARCE · OCTOBER 17, 2019



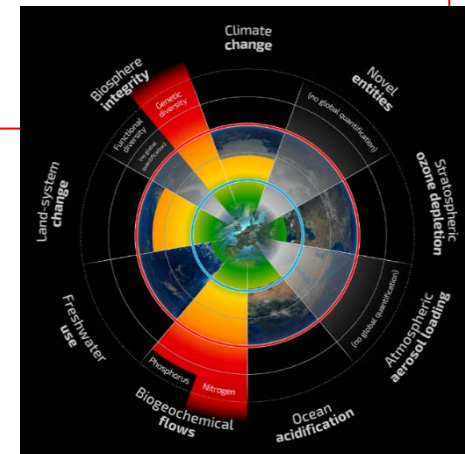
# II. Globální spotřeba vody

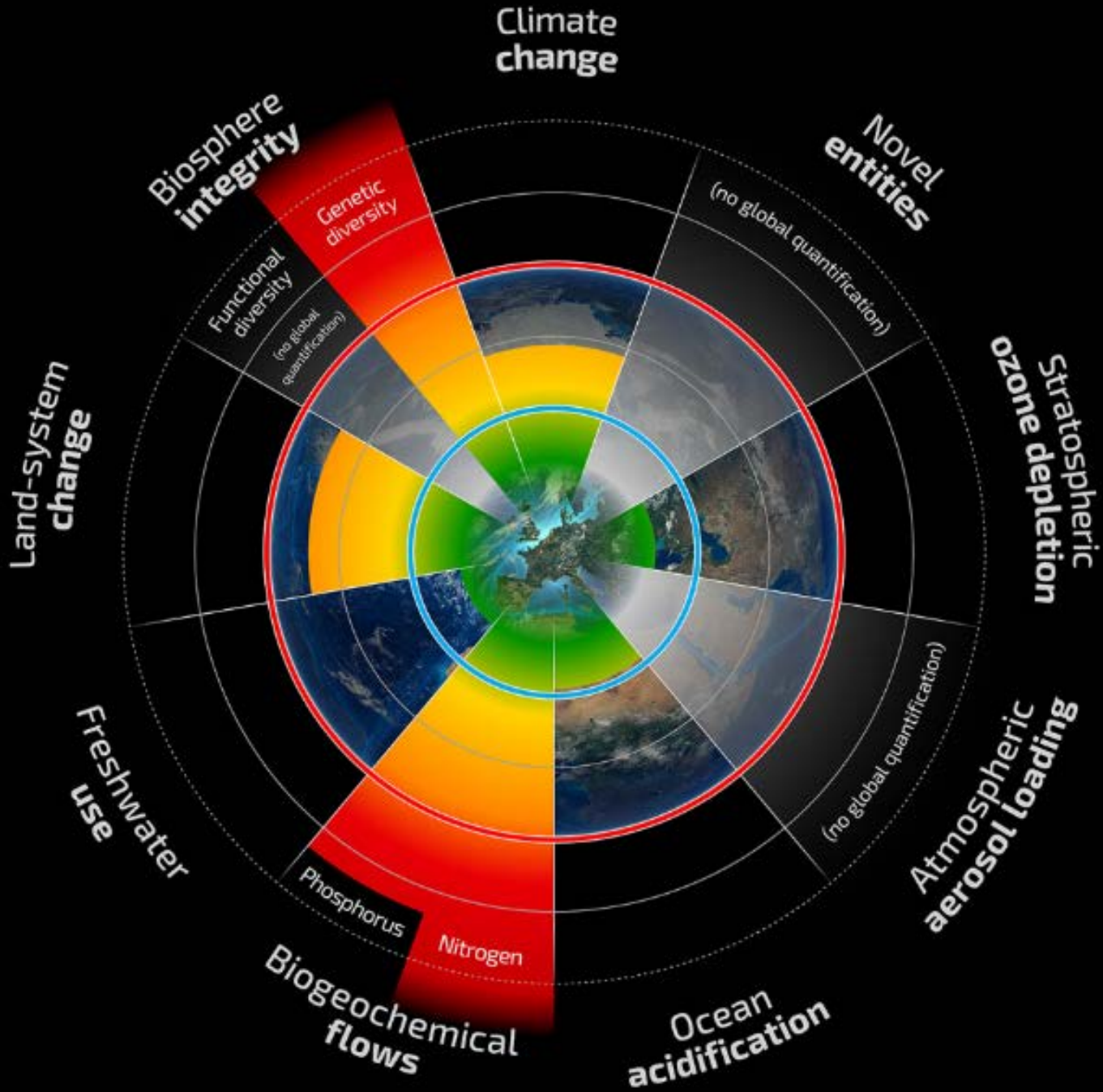
Earth-system process	Control variable(s)	Planetary boundary (zone of uncertainty)	Current value of control variable
Freshwater use (R2009: Global freshwater use)	<p><i>Global:</i> Maximum amount of consumptive blue water use (<math>\text{km}^3\text{yr}^{-1}</math>)</p> <p><i>Basin:</i> Blue water withdrawal as % of mean monthly river flow</p>	<p><i>Global:</i> <math>4000 \text{ km}^3 \text{ yr}^{-1}</math> (<math>4000\text{--}6000 \text{ km}^3 \text{ yr}^{-1}</math>)</p> <p><i>Basin:</i> Maximum monthly withdrawal as a percentage of mean monthly river flow. For low-flow months: 25% (25–55%); for intermediate-flow months: 30% (30–60%); for high-flow months: 55% (55–85%)</p>	$\sim 2600 \text{ km}^3 \text{ yr}^{-1}$

**Boundary:** No more than  $4000 \text{ km}^3$  of fresh water consumed per year

**Current level:**  $2600 \text{ km}^3$  per year

**Diagnosis:** Boundary will be approached by mid-century





# Nedostatek sladké vody

- člověk je dominantní silou měnící globálně tok vody v řekách
- přibližně 25 % vody z povodí vůbec nedoteče do oceánů
- vážné důsledky pro stav biodiverzity, produkci potravin, zdravotní rizika, snižování pružnosti ter. a aqua. ekosystémů

## 8 Mighty Rivers Run Dry From Overuse

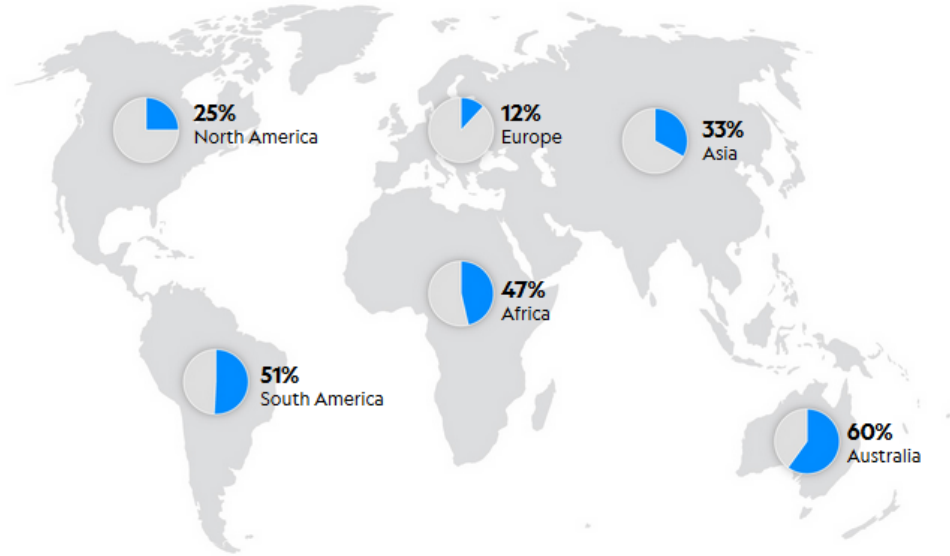
[Main](#) [About the Freshwater Initiative](#) [Restoring Rivers](#) [Reducing Water Use](#) [News](#) [Videos](#)



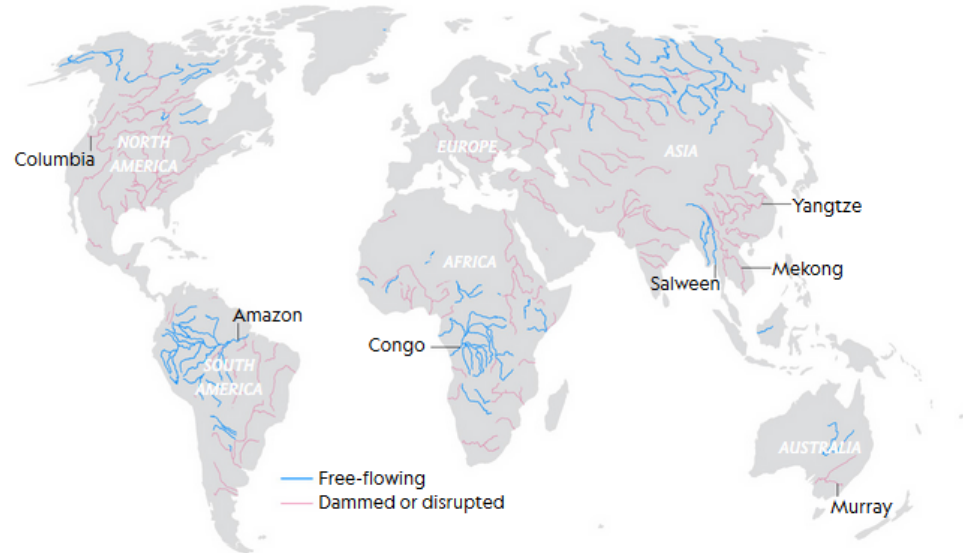
# The world's remaining free-flowing rivers

Only 37 percent of world's largest rivers are free of dams or other disruptions. Free-flowing rivers are found primarily in the Amazon and Congo Basins, and in the Arctic.

Percentage of very large rivers (longer than 1,000 km) that remain free-flowing, by continent



Distribution of very large rivers



# Aralské Jezero - Kazachstán, Uzbekistán

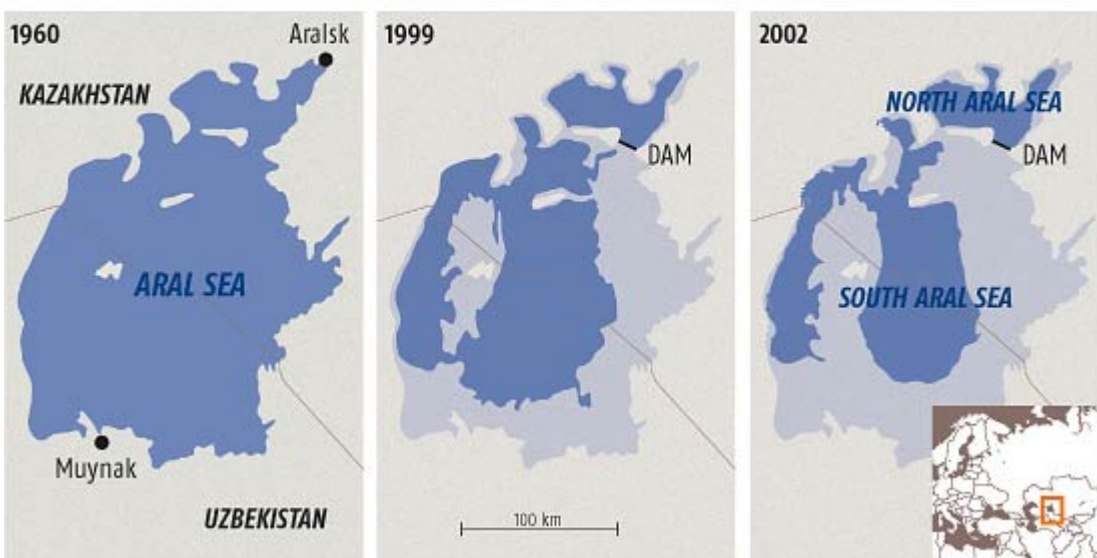


# Aralské Jezero

## - Kazachstán, Uzbekistán

### THE SHRINKING SEA

The changed shape of the Aral Sea since 1960



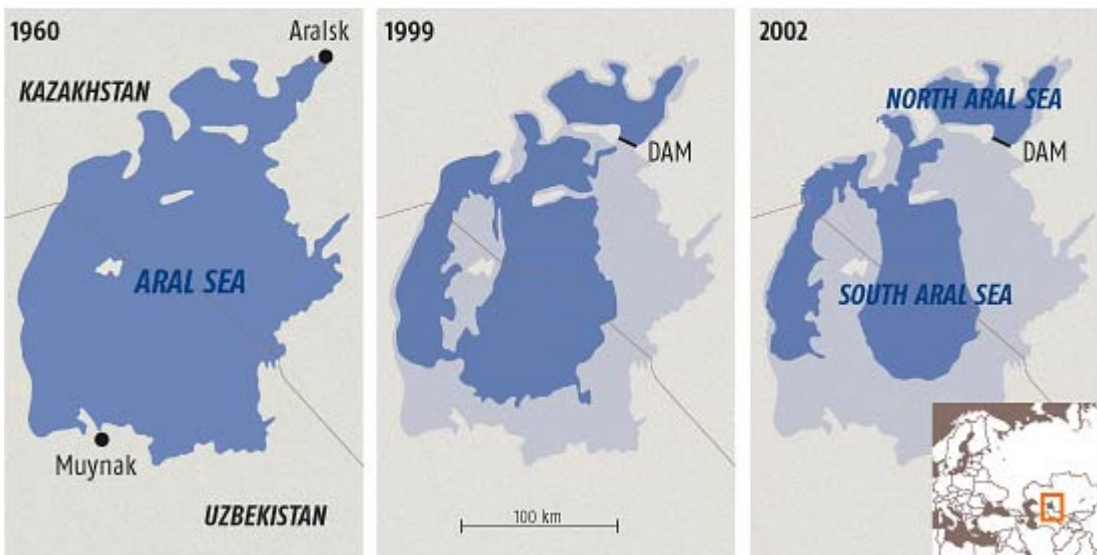
- 2005 postavena přehrada mezi S a J částí
- co následovalo?

# Aralské Jezero

## - Kazachstán, Uzbekistán

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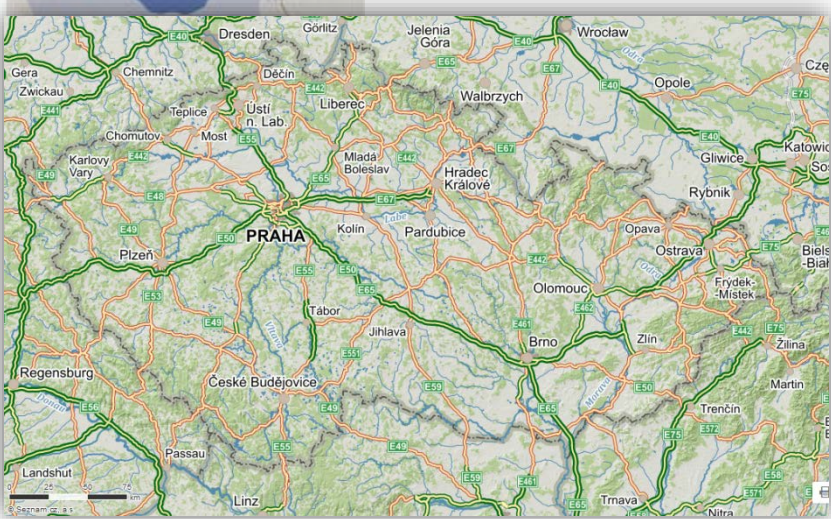
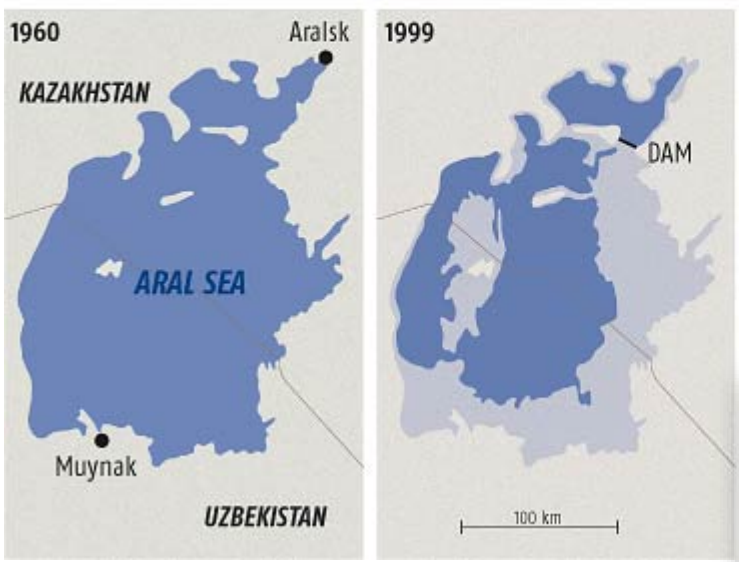


- 2005 postavena přehrada mezi S a J částí
- co následovalo?

# Aralské Jezero

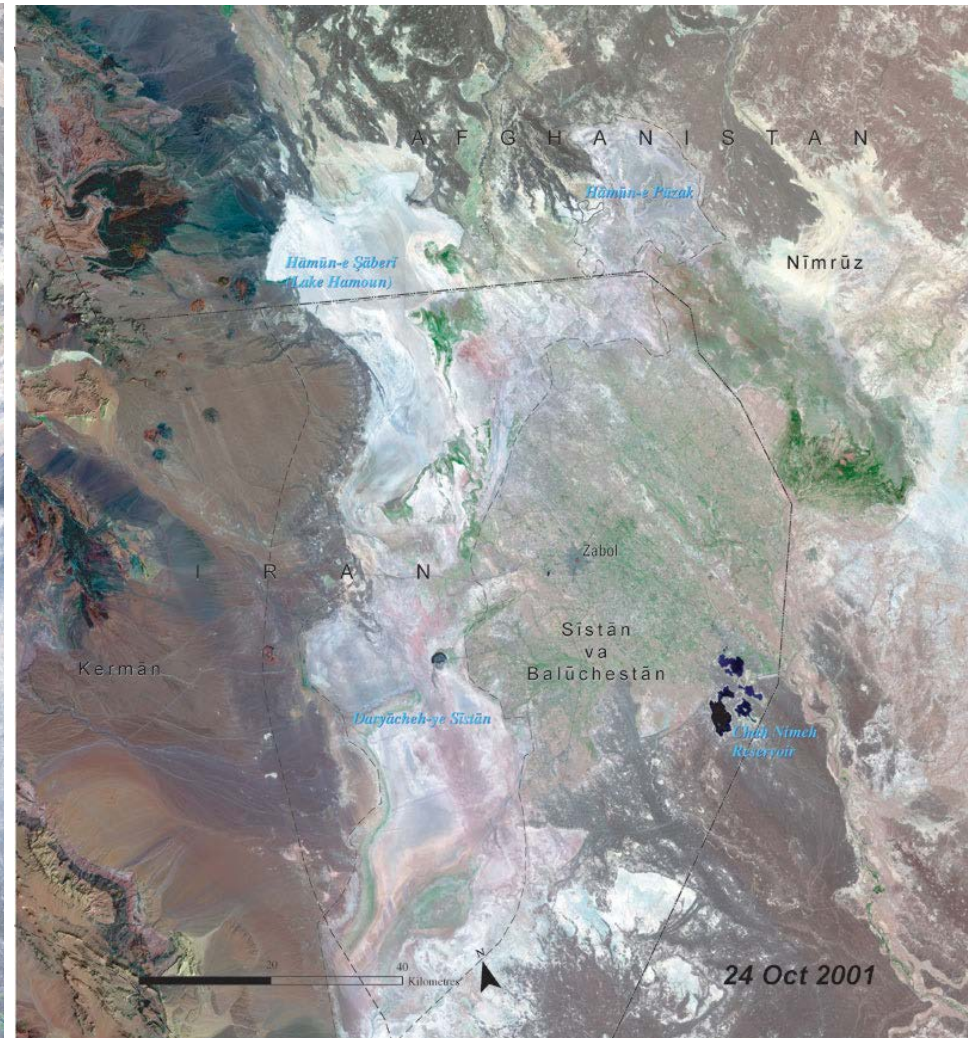
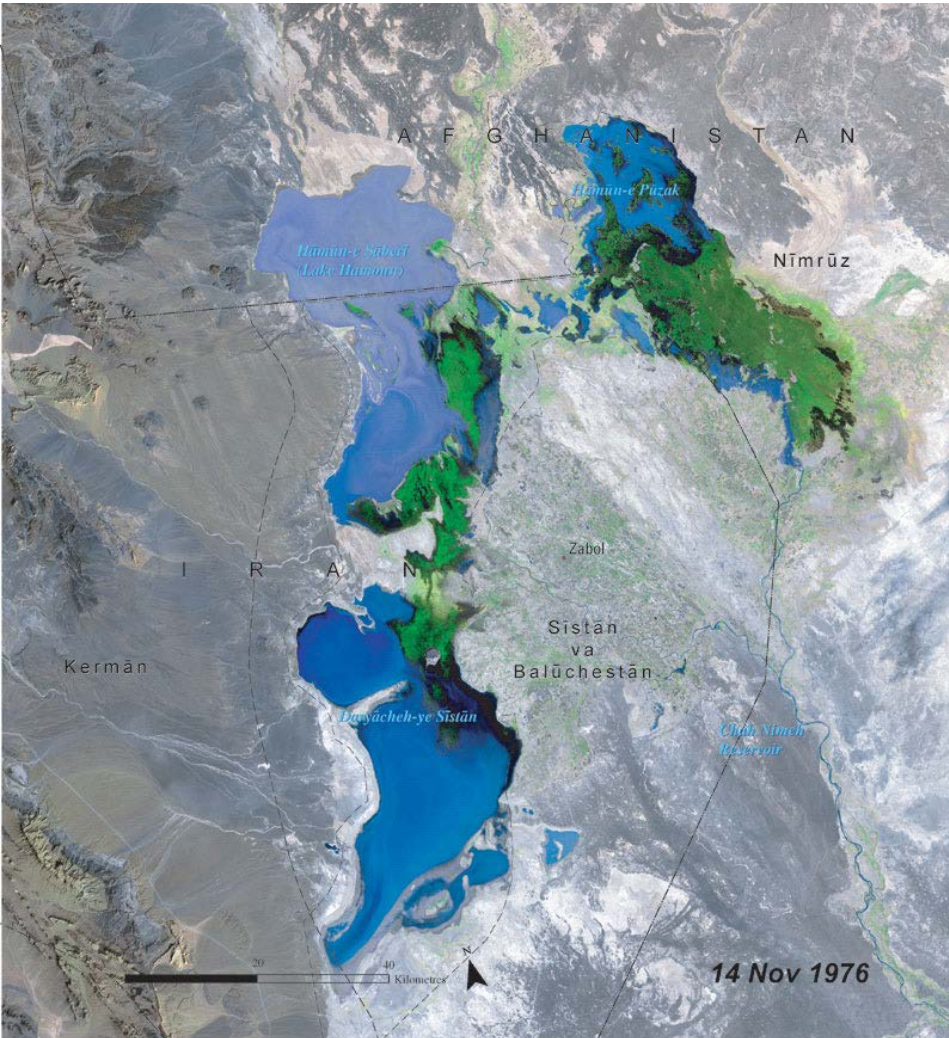
## THE SHRINKING SEA

The changed shape of the Aral Sea since 1960

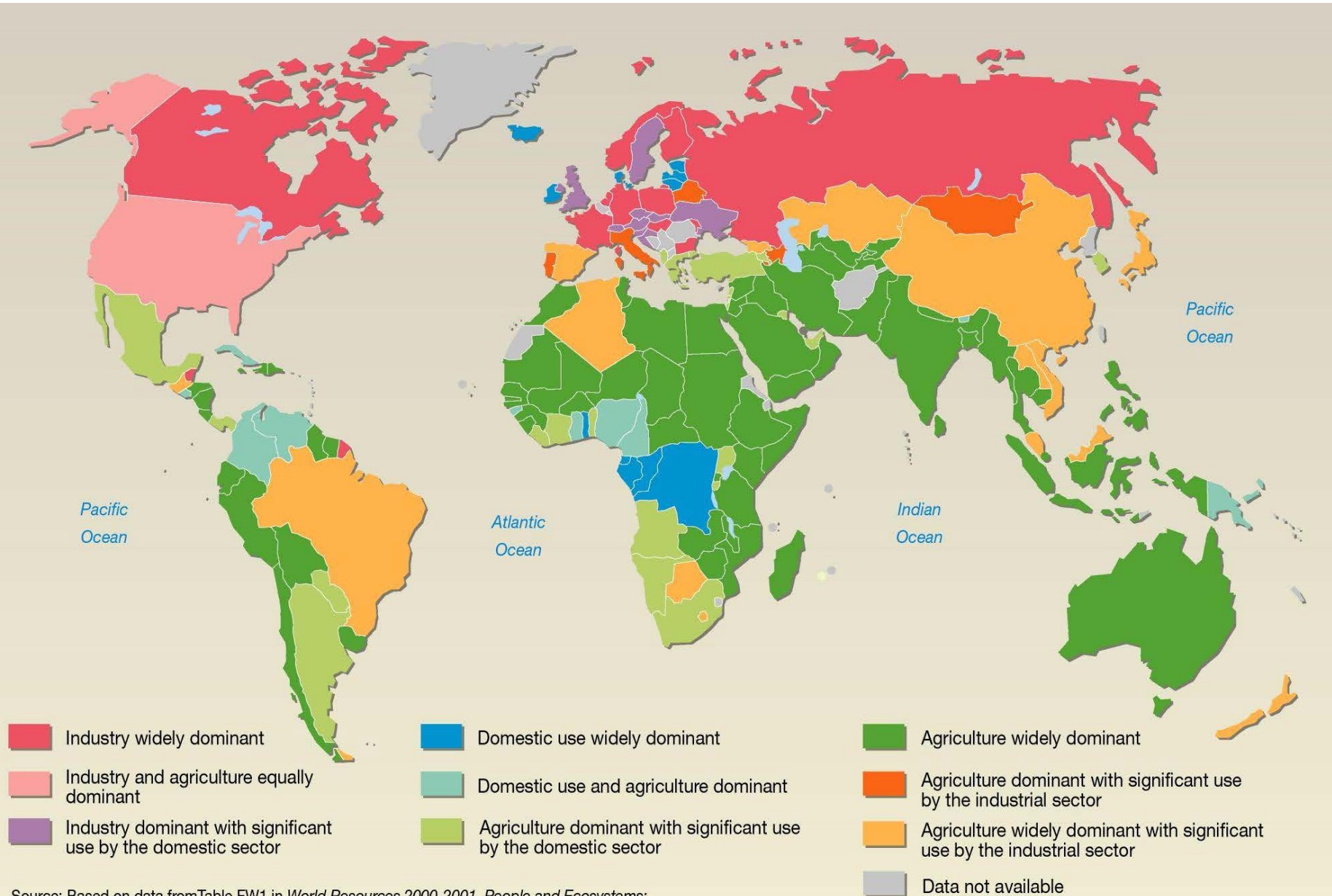




# Lake Hamoun – Irán, Afghaniistán



# Odvětví spotřeby vody



Source: Based on data from Table FW1 in *World Resources 2000-2001, People and Ecosystems: The Fraying Web of Life*, World Resources Institute (WRI), Washington DC, 2000.

# Oblasti a příčiny nedostatku vody

Areas around the globe suffering from depleted water resources

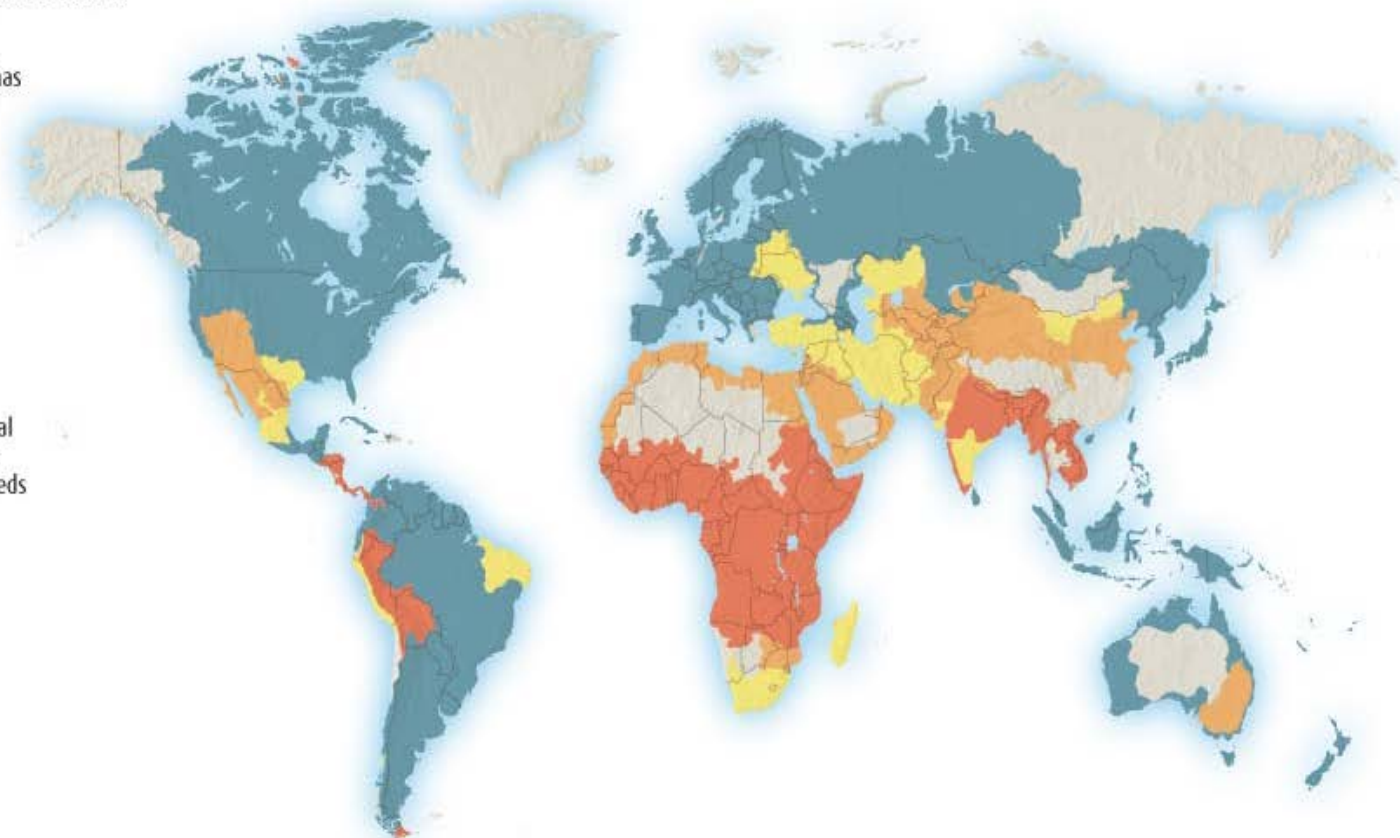
**Physical water scarcity**  
Water resource development is approaching or has exceeded sustainable limits. More than 75% of river flow is extracted for agriculture

**Approaching physical water scarcity**  
More than 60% of river flow is extracted. These areas will experience physical water scarcity in the near future

**Economic water scarcity**  
Limited access to water even though natural local supplies are available to meet human demands. Less than 25% of water extracted for human needs

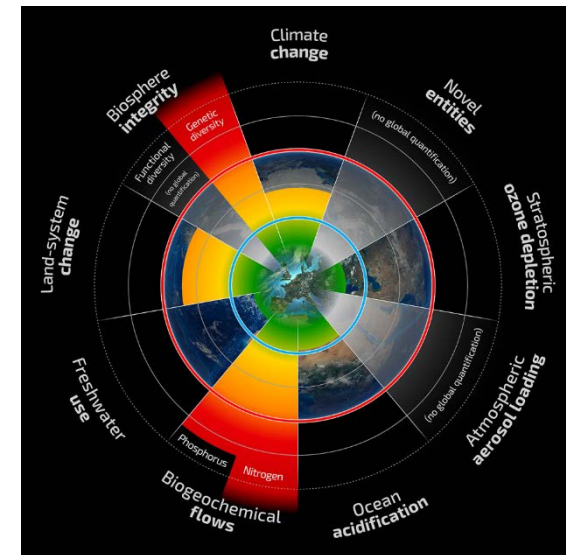
**Little or no water scarcity**  
Abundant water resources relative to use, with less than 25% of water extracted for human purposes

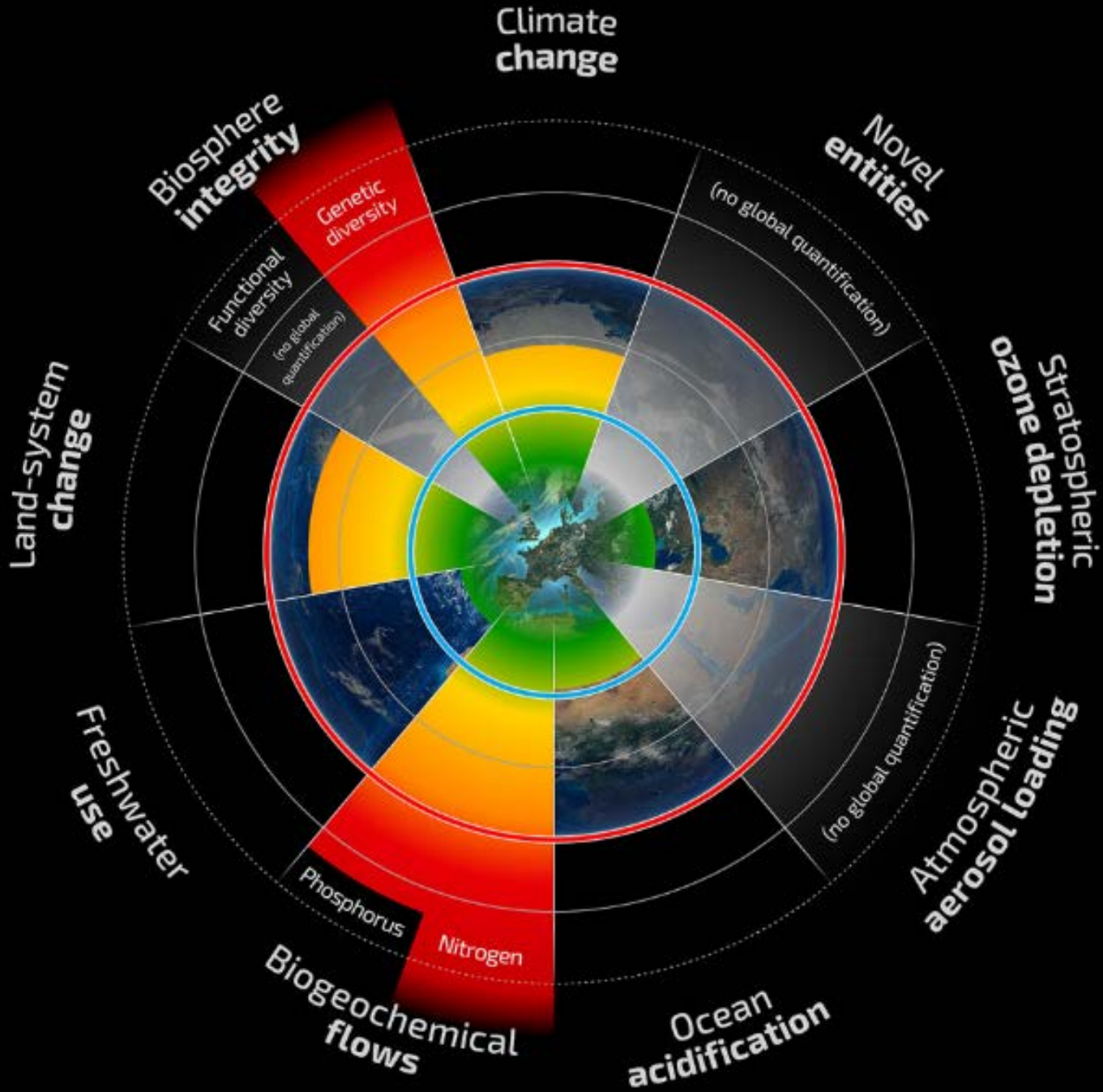
**Not estimated**



# III. Integrita biosféry – **genetická x funkční**

Earth-system process	Control variable(s)	Planetary boundary (zone of uncertainty)	Current value of control variable
Change in biosphere integrity (R2009: Rate of biodiversity loss)	<i>Genetic diversity:</i> Extinction rate	< 10 E/MSY (10–100 E/MSY) but with an aspirational goal of ca. 1 E/MSY (the background rate of extinction loss). E/MSY = extinctions per million species-years	100–1000 E/MSY
	<i>Functional diversity:</i> Biodiversity Intactness Index (BII)	Maintain BII at 90% (90–30%) or above, assessed geographically by biomes/large regional areas (e.g. southern Africa), major marine ecosystems (e.g., coral reefs) or by large functional groups	84%, applied to southern Africa only
	Note: These are interim control variables until more appropriate ones are developed		



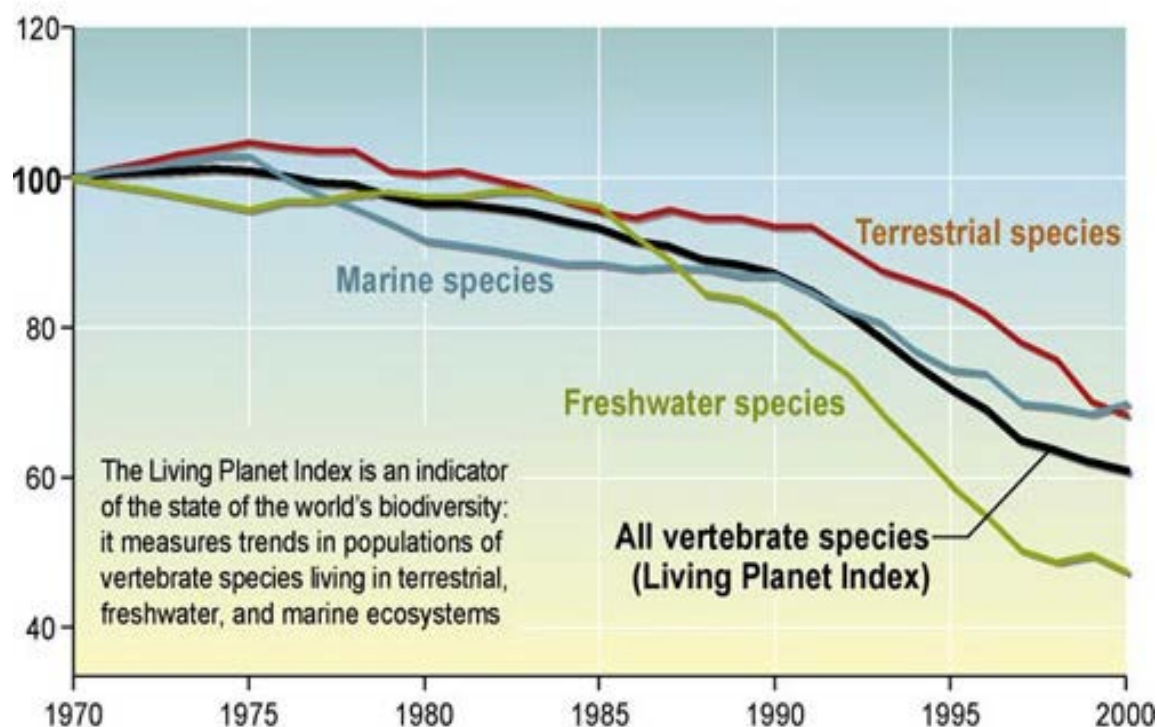


# Ztráta biodiverzity

- dnes probíhá 6. velké vymírání druhů v historii Země
- poprvé důsledkem lidské činnosti
- ohroženo vyhynutím 13 % druhů ptáků, 23 % savců a 25 % jehličnanů, 41 % obojživelníků, 54 % cykasů

- **Hmyz?**

Population Index = 100 in 1970



# Ztráta biodiverzity ?

Společnost • Civilizace

## ZE ŽIVOTA UMÍRAJÍCÍHO HMYZU

Stav přírody se prý zlepšuje. Proč se z ní pak ale ztrácejí její „nezajímaví“ a zdánlivě nedůležité obyvatelé?



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FEATURE 25 July 2018

## Is life on Earth really at risk? The truth about the extinction crisis

Earth's biodiversity isn't just beautiful, it ensures human survival. But to protect nature's bounty we first need to know exactly how we're harming it



La Scarlatte

# Ztráta biodiverzity ?

- pro hmyz chybí kvalitní data
- **úbytek** některých druhů (př. motýli, vážky, střevlíci...)
- jiné druhy **nepostižení**, především škůdci (př. mšice)
- některé druhy **přibývají**
- Homogenizace druhů = genet. biodiv. klesá
- Funkční biodiverzita však zachována

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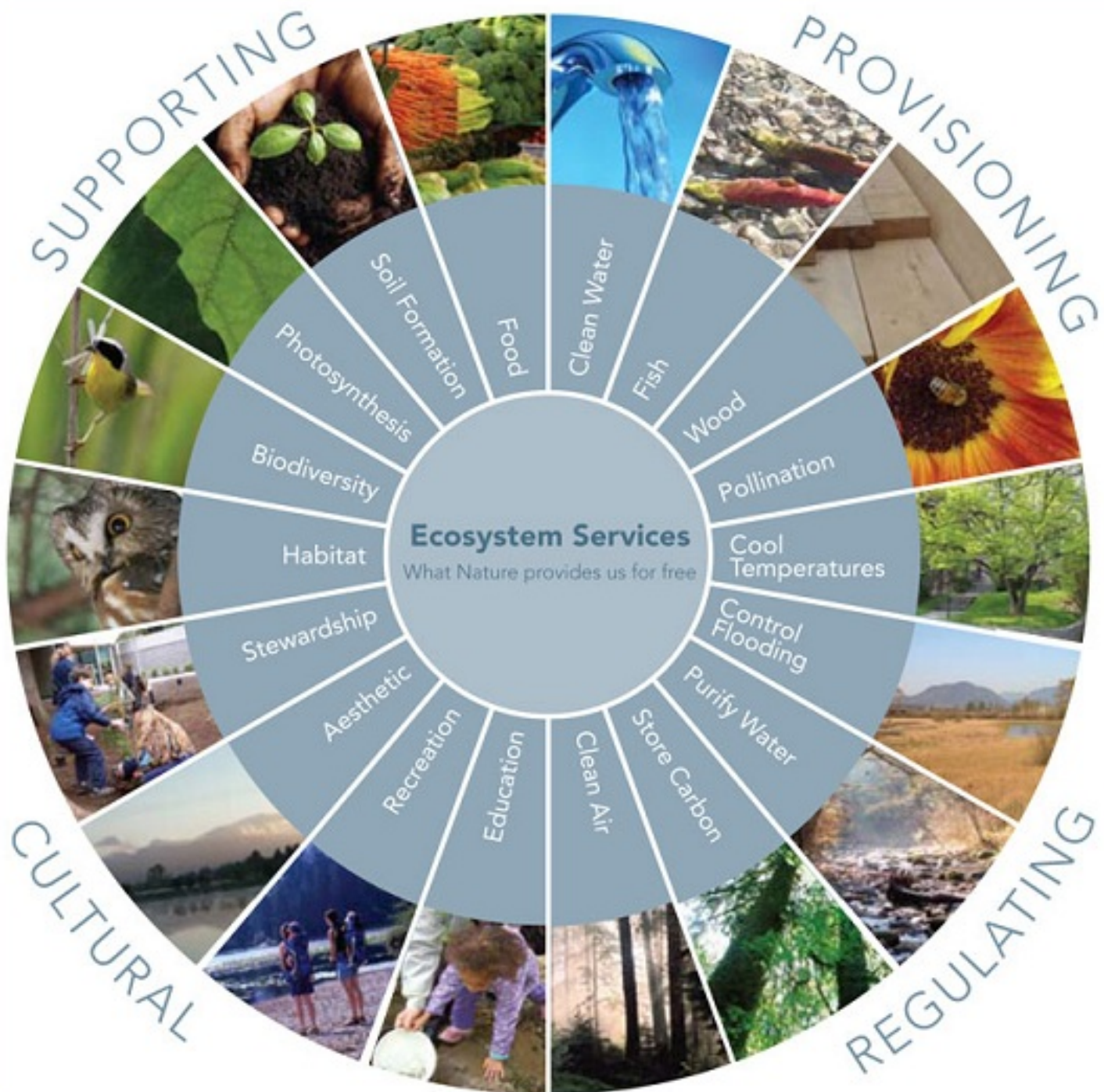
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# Jaký je význam funkční biodiverzity?

# Funkční biodiverzita



# Význam biodiverzity

## Funkční biodiverzita

- zajištění a udržení ekosystémových funkcí a služeb
- udržení odolnosti a pružnosti ekosystémů – obzvlášť důležité v rychle se měnícím prostředí (klíma, pH, atd.)



# Jaký je význam genetické biodiverzity?

# Nobel Prize winner Tu Youyou combed ancient Chinese texts for malaria cure



By **Katie Hunt** and **Shen Lu**, CNN

🕒 Updated 1126 GMT (1926 HKT) October 6, 2015



This photo taken in the 1950s shows Tu Youyou, right, a young pharmacologist with the China Academy of Chinese Medical Sciences in Beijing.

## Story highlights

Scientist Tu Youyou combed ancient Chinese texts for a malaria cure

Her research has earned her the highest accolade in medicine -- the Nobel Prize

**(CNN)** — In the turmoil of China's Cultural Revolution, scientist Tu Youyou joined a covert mission to find a cure for malaria.

"Project 523," was set up in 1967 by Chairman Mao Zedong, who wanted to help Communist troops fighting

### News & buzz



Russian forces fire on US-backed Syrian rebels



Julia Louis-Dreyfus makes Emmy history

مدينة دبي الطبية  
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# 3 scientists share Nobel Prize for medicine for work on parasitic diseases



By **Holly Yan** and **Jethro Mullen**, CNN

🕒 Updated 1712 GMT (0112 HKT) October 5, 2015



Nobel Prize in medicine awarded 00:10

## Story highlights

William Campbell and Satoshi Omura are honored for their work fighting elephantiasis and river blindness

**(CNN)** — The Nobel Prize for medicine has been jointly awarded this year to three scientists for their work on parasitic diseases.

Half of the award goes to Ireland's William Campbell and

# Význam biodiverzity

## Funkční biodiverzita

- zajištění a udržení ekosystémových funkcí a služeb
- udržení odolnosti a pružnosti ekosystémů – obzvláště důležité v rychle se měnícím prostředí (klíma, pH, atd.)

## Druhová biodiverzita

- každý biologický druh = unikátní strategie přežití
- zásobárna know-how pro farmaceutický, chemický, technický, stavební ... průmysl (50% léků rostlin. původu)
- zdroj estetického zážitku
- hodnota života sama o sobě

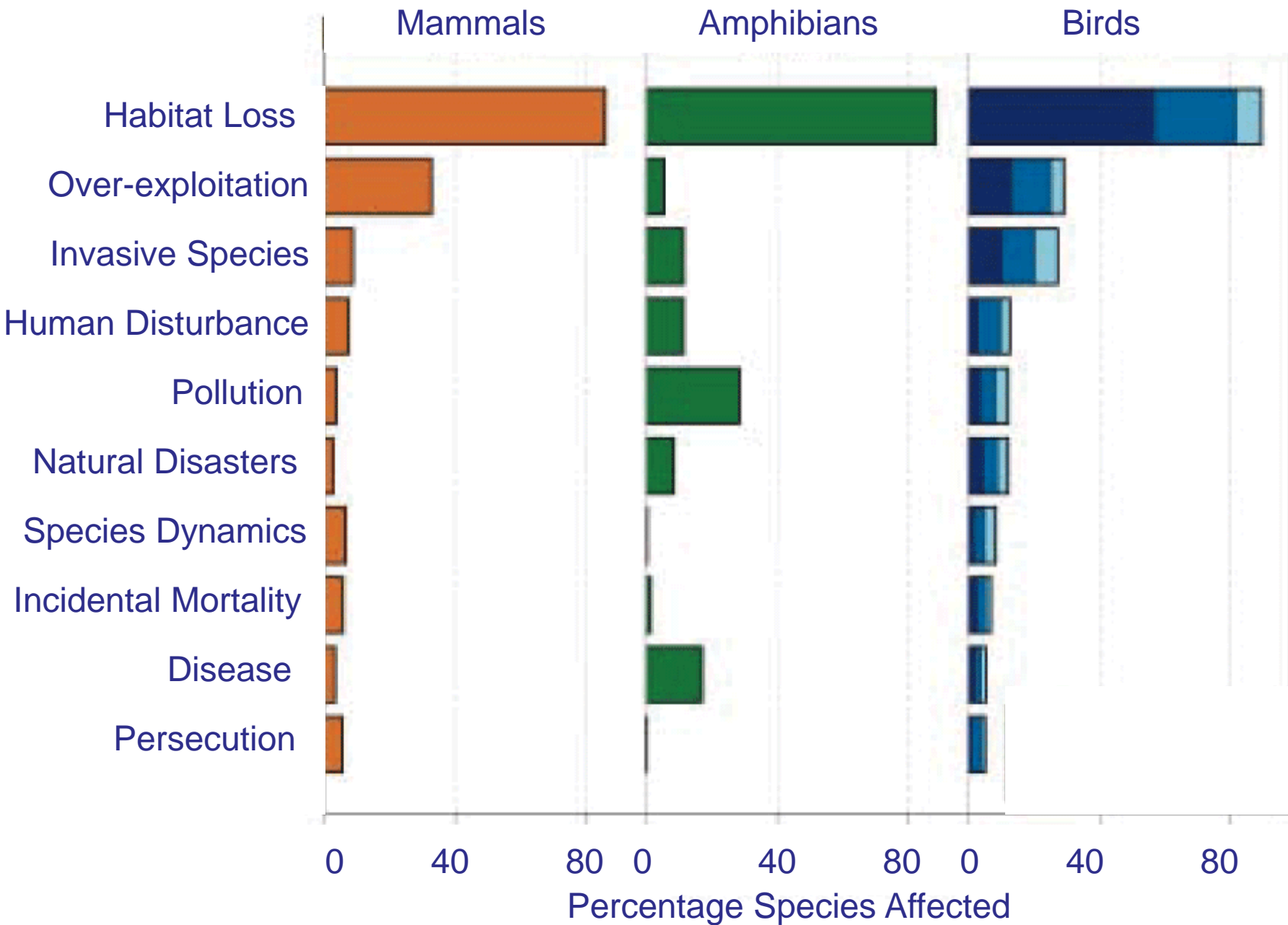


# Jaké jsou příčiny úbytku biodiverzity?

Top



# Příčiny ztráty biodiverzity = cesta k řešení



# Problém evolučních pastí

- vytvoření takového prostředí, ve kterém instinktivní chování živočichů (i celých populací) vede k záhubě (v krajním případě)

„ *Do you prefer the thing that's worse for you?*“



## Junk food

Albatrosses and other seabirds are drawn to bottle tops, cigarette lighters, golf balls and other plastic rubbish floating on the ocean. Mistaking them for food, the birds swallow them, often to regurgitate to their chicks. Many subsequently die, full but starving.

(Image: Rebecca Hosking/FLPA)



## Mirages

Many aquatic insects need to lay their eggs in water and so have evolved vision sensitive to the polarised light that signals a water surface. Unfortunately, glass buildings, cars, road surfaces and solar panels often polarise light in the same way, leading billions of insects to lay their precious eggs on barren ground.

(Image: Achim Mittler, Frankfurt am Main/Flickr/Getty)



## Beetle beer goggles

Some brown beer bottles have an uncanny similarity to the colour, sheen and texture of female giant jewel beetles. Males have been known to try to copulate with them in a futile embrace.

(Image: AlamyCelebrity/Alamy)



## Turn, turtle!

Newly hatched turtles instinctively head for the horizon. Unfortunately, street lights often bamboozle them into heading away from the sea, towards busy tourist resorts where they are crushed to death.

(Image: Jeff Greenberg/Alamy)



**Napište jednu informaci, která vás dnes  
nejvíce zaujala či překvapila.**