

Iceland's Environmental History



Week 4 Big Picture Questions

- Can colonialism and conservation coexist?
 - Does colonialism = over consumption ?
- What is the relationship between population size and forced innovation/technology?

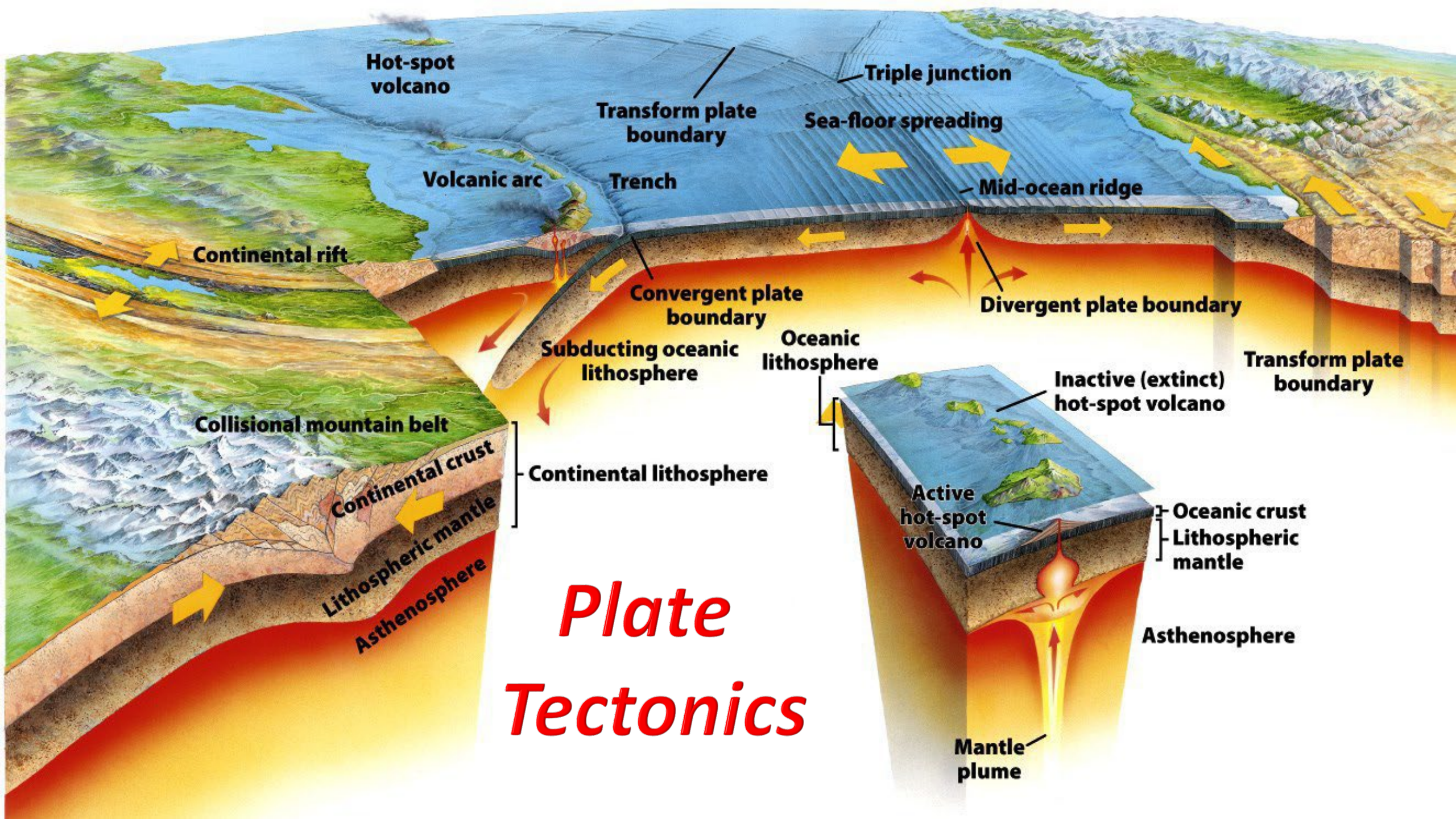


Plate Tectonics

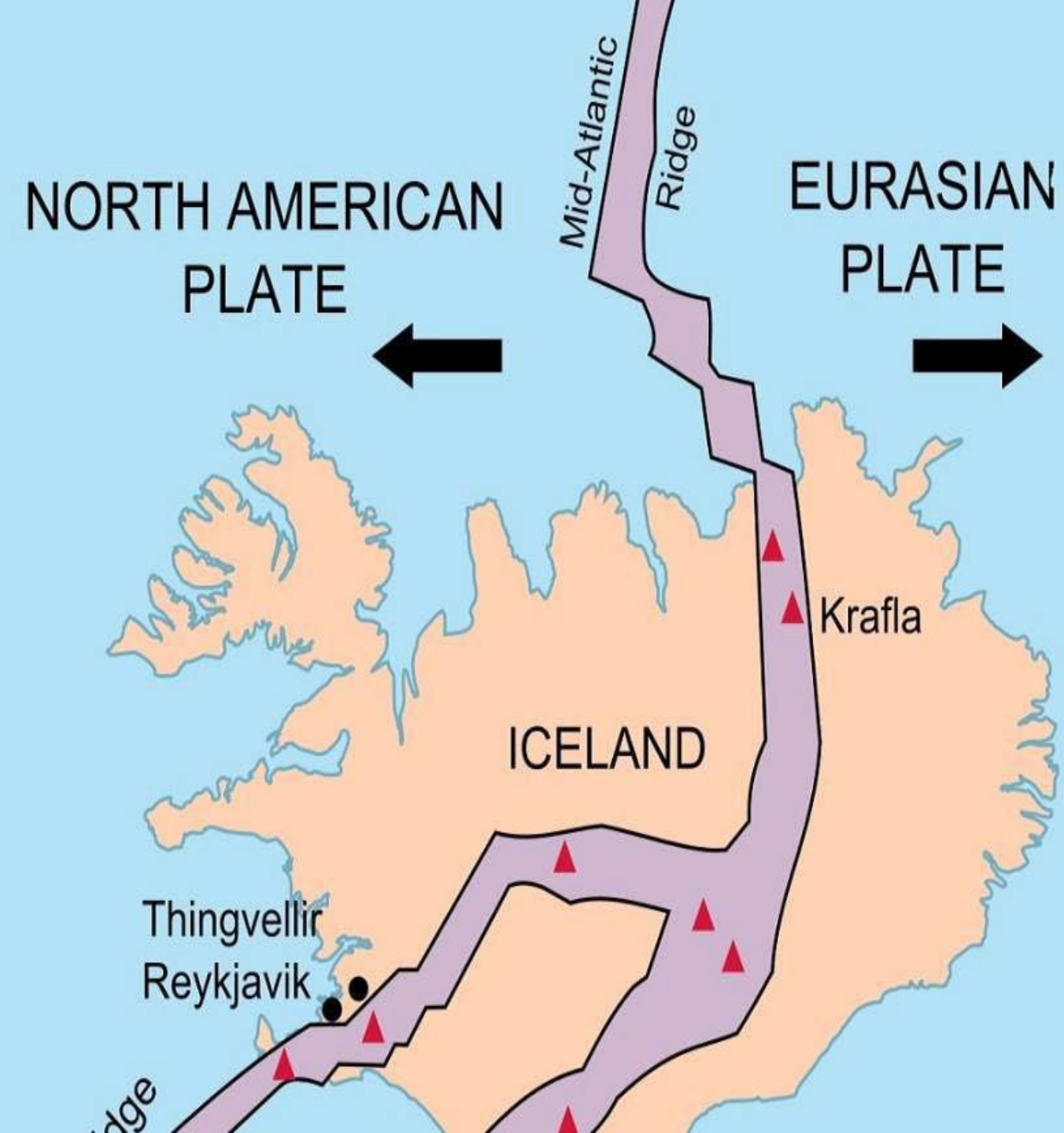
Big idea

The Earth's interior is in constant motion through the processes of convection, with important consequences for the surface.



Sea Floor Spreading







Þingvellir/Thingvellir

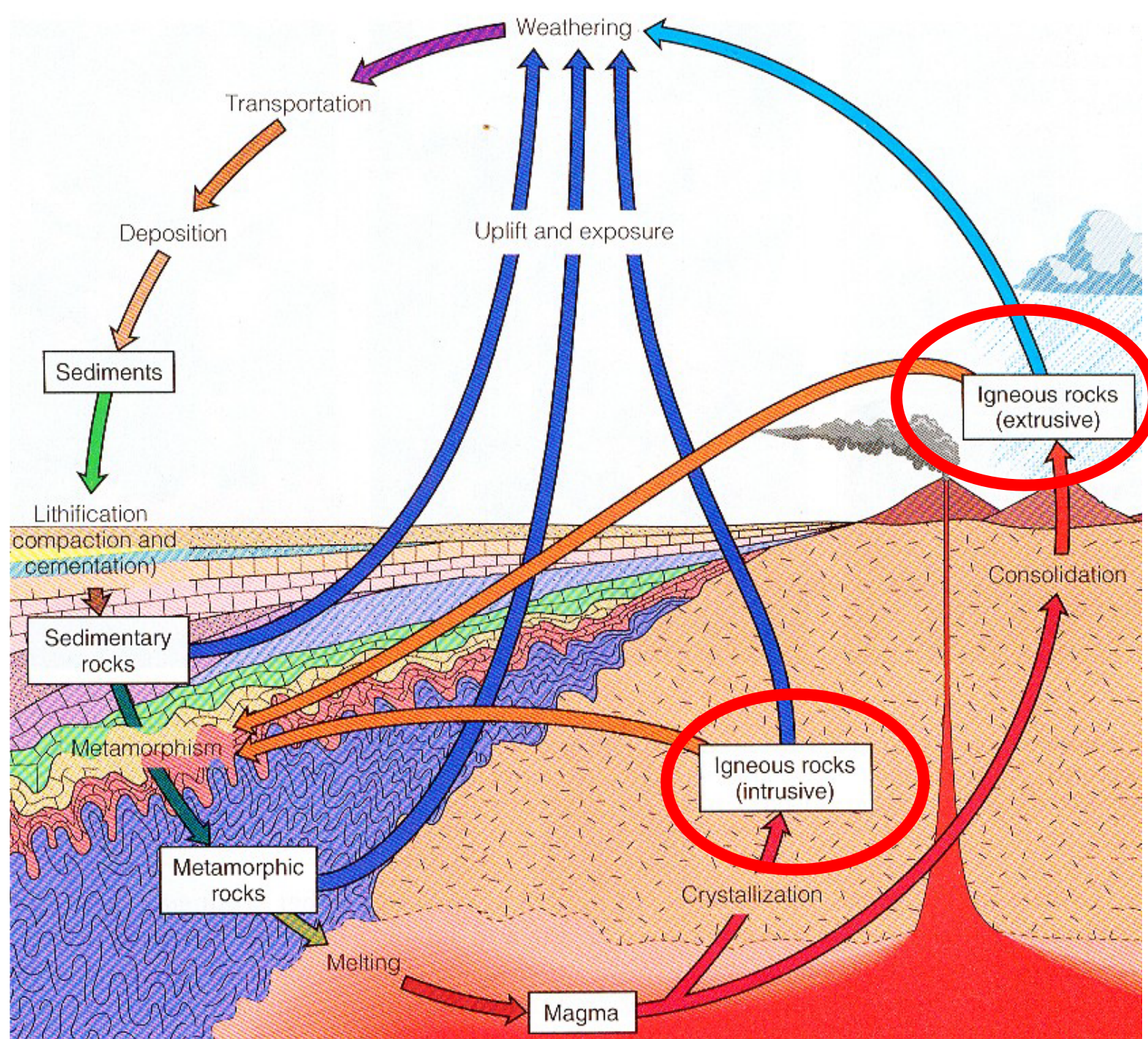


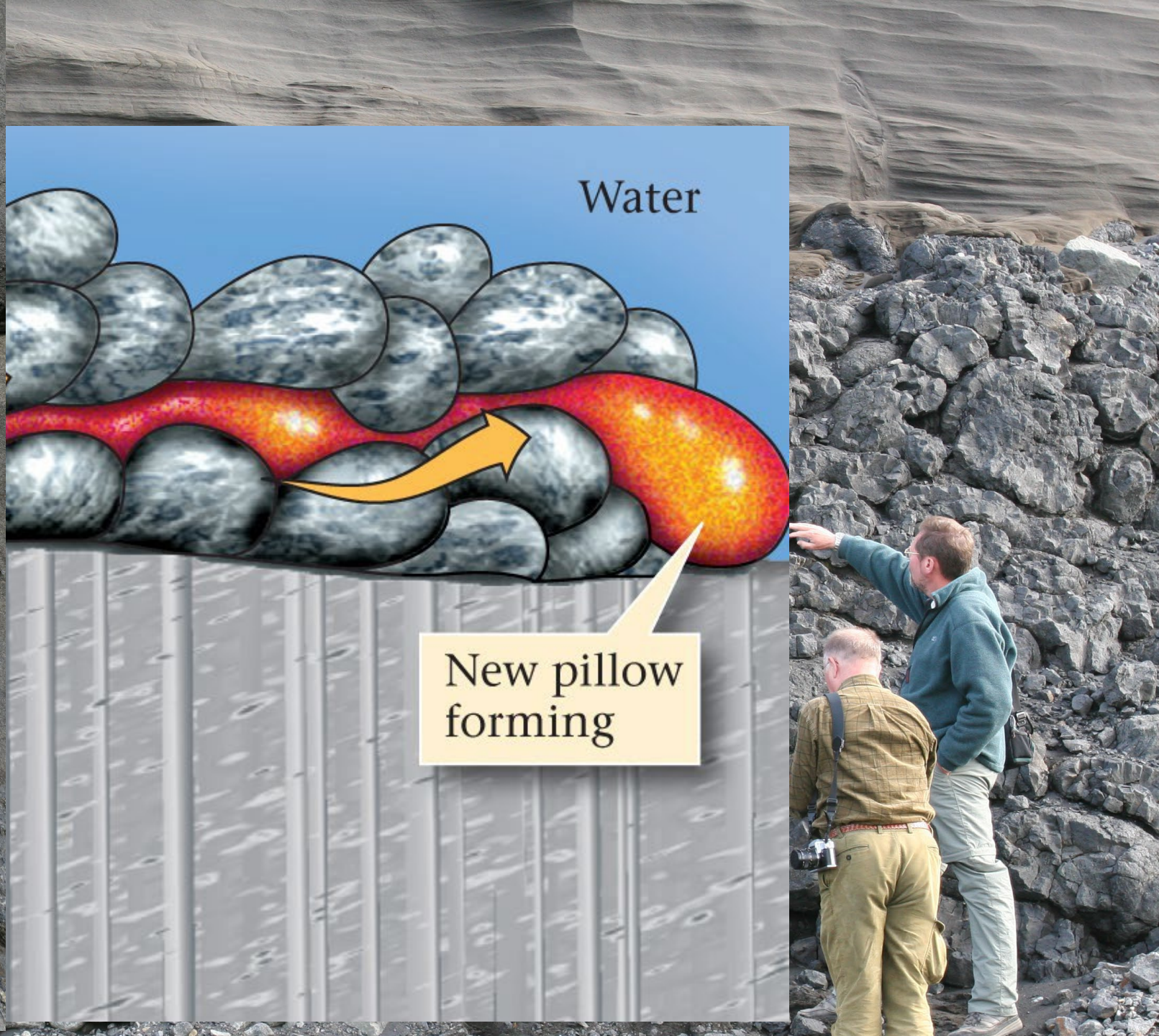


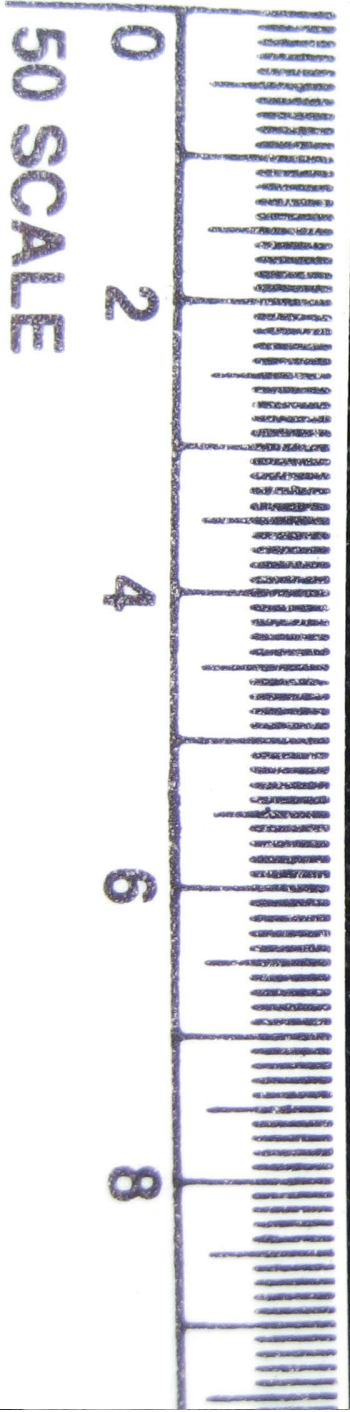
Igneous Rock

Magma Vs. Lava

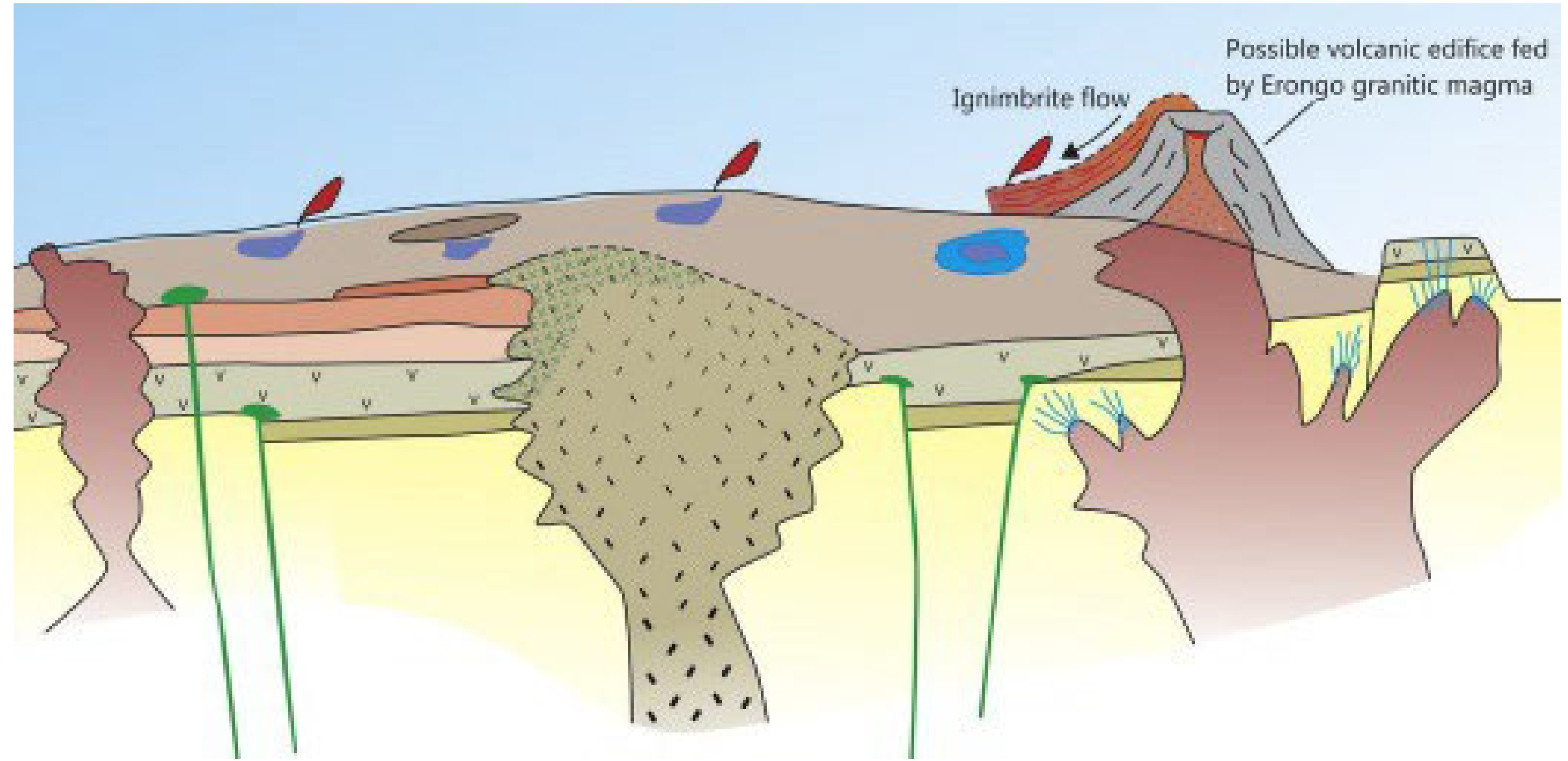
Intrusive Vs Extrusive







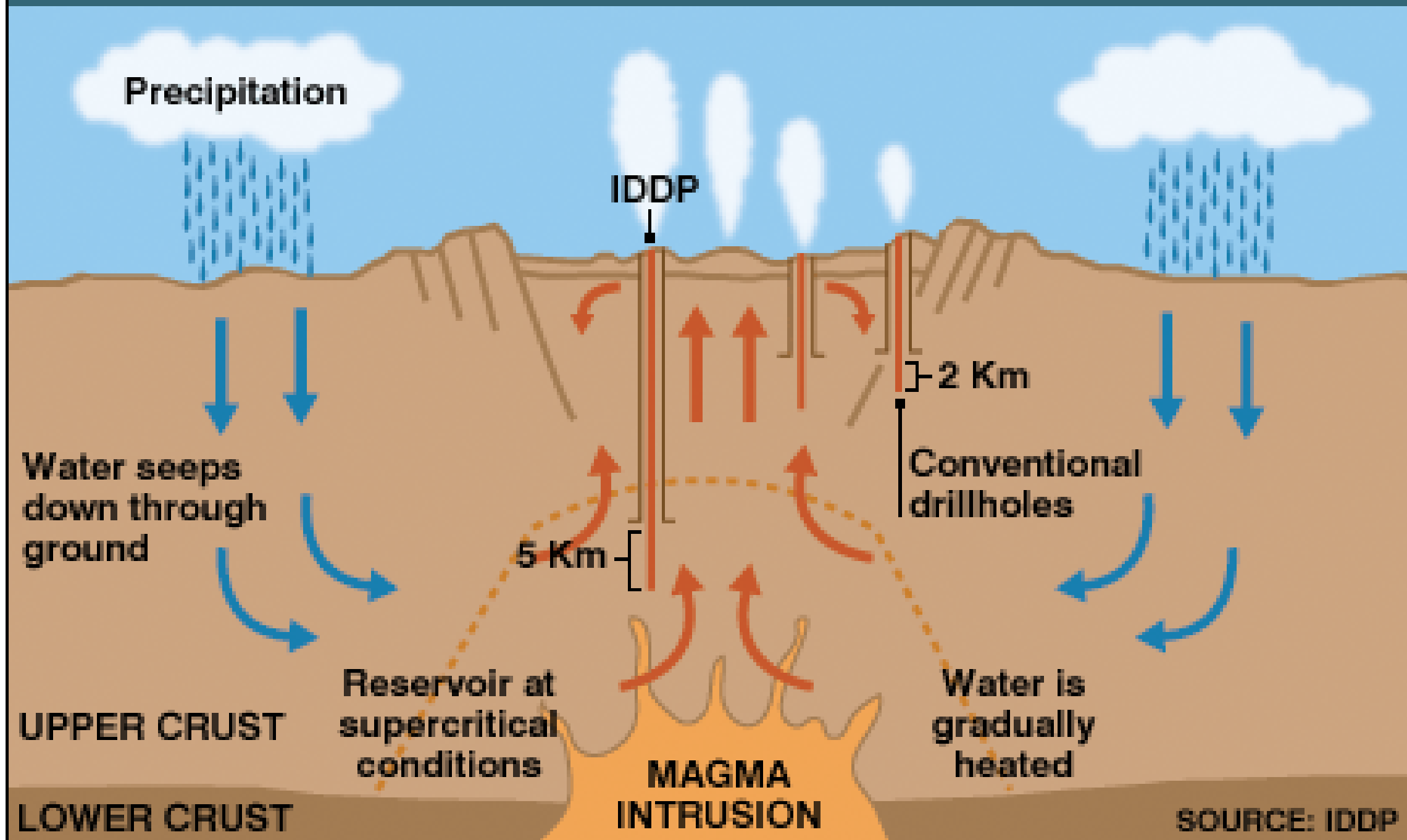
Hydrothermal Pools







ICELAND DEEP DRILLING PROJECT

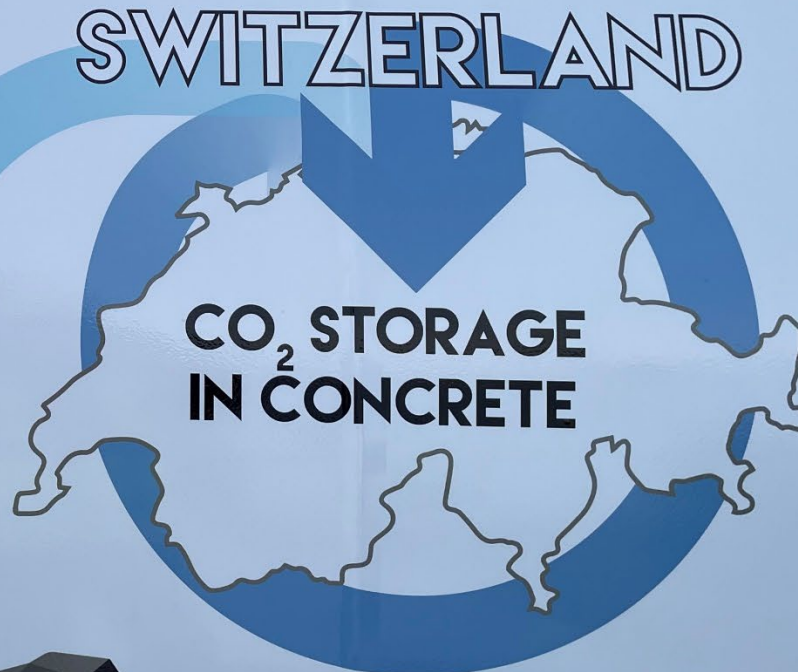


EXPLORING CO₂ MANAGEMENT SOLUTIONS

ICELAND



SWITZERLAND



DEMO UP  CARMA

The logo for CARMA, featuring a stylized 'C' made of blue and black geometric shapes.





Iceland's Human History

DATE CHART

BC 5000 4000 3000 2000 1000 0 AD 1000

4300



BCE

30 BCE

SUMERIANS



HITTITES



ASSYRIANS



ISRAELITES



ACHAEMENIDS



MINOANS



MYCENAEANS



GREEKS



ETRUSCANS



ROMANS

EASTERN
EMPIRE

WESTERN
EMPIRE

625 BCE

476 CE

Egyptians
3000

Iceland 871 CE
USA 1776 CE

Romans
1000

Relative Time - Perceptions - Huge consequences

Civilizations that are not able to think, plan and act for both the short and long term will fail...





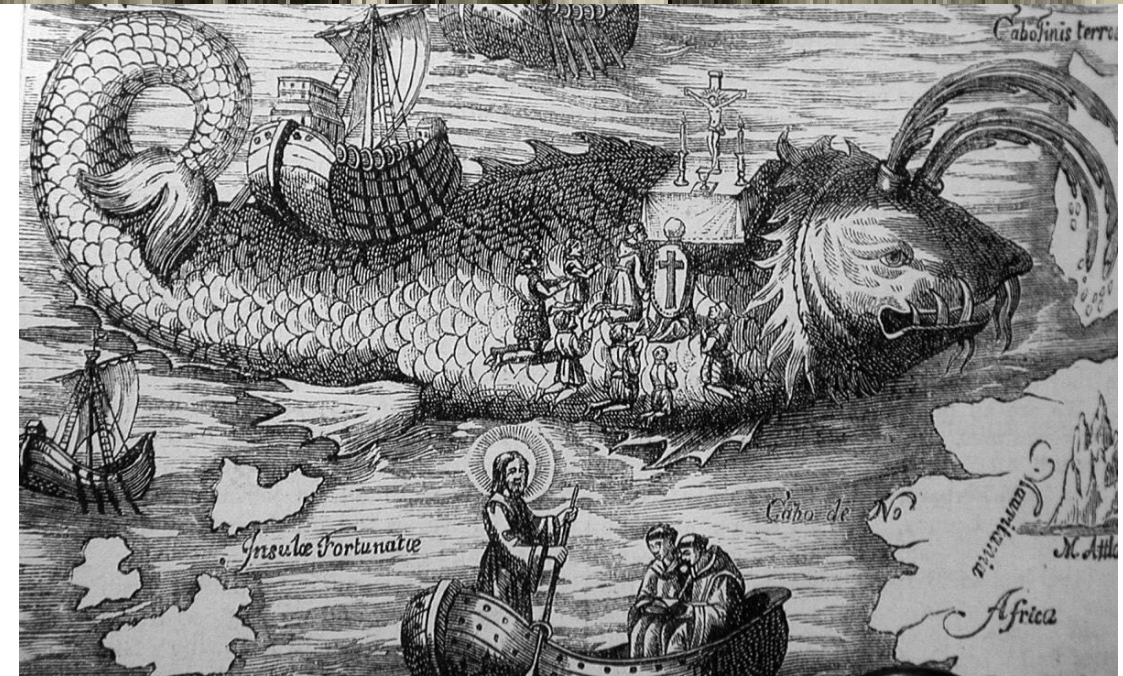
Irish Monks

600-700 C.E.

- Curachs (wood frame/sewn hides)



- Papai / Papar
- Hermits/Eremite, one who retires from society, primarily for religious reasons, and lives in solitude.



Norse Settlers

- 'Snowland'
- Seasonal/summer farms



Ingólfr Arnarson

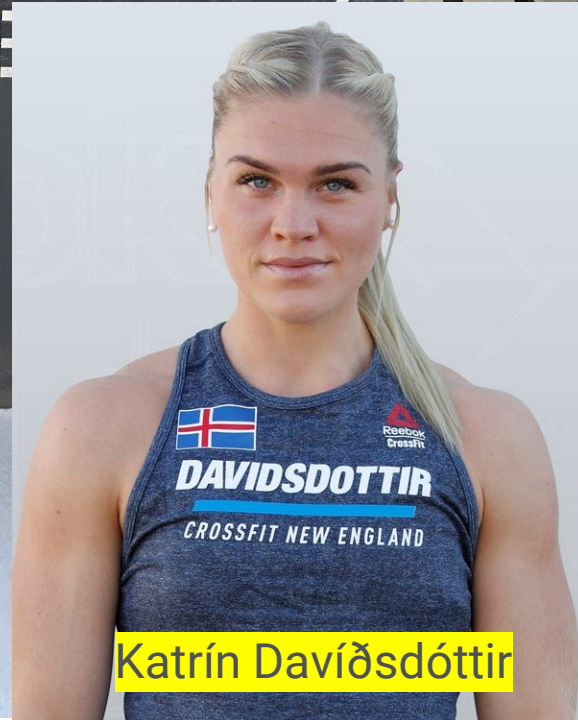
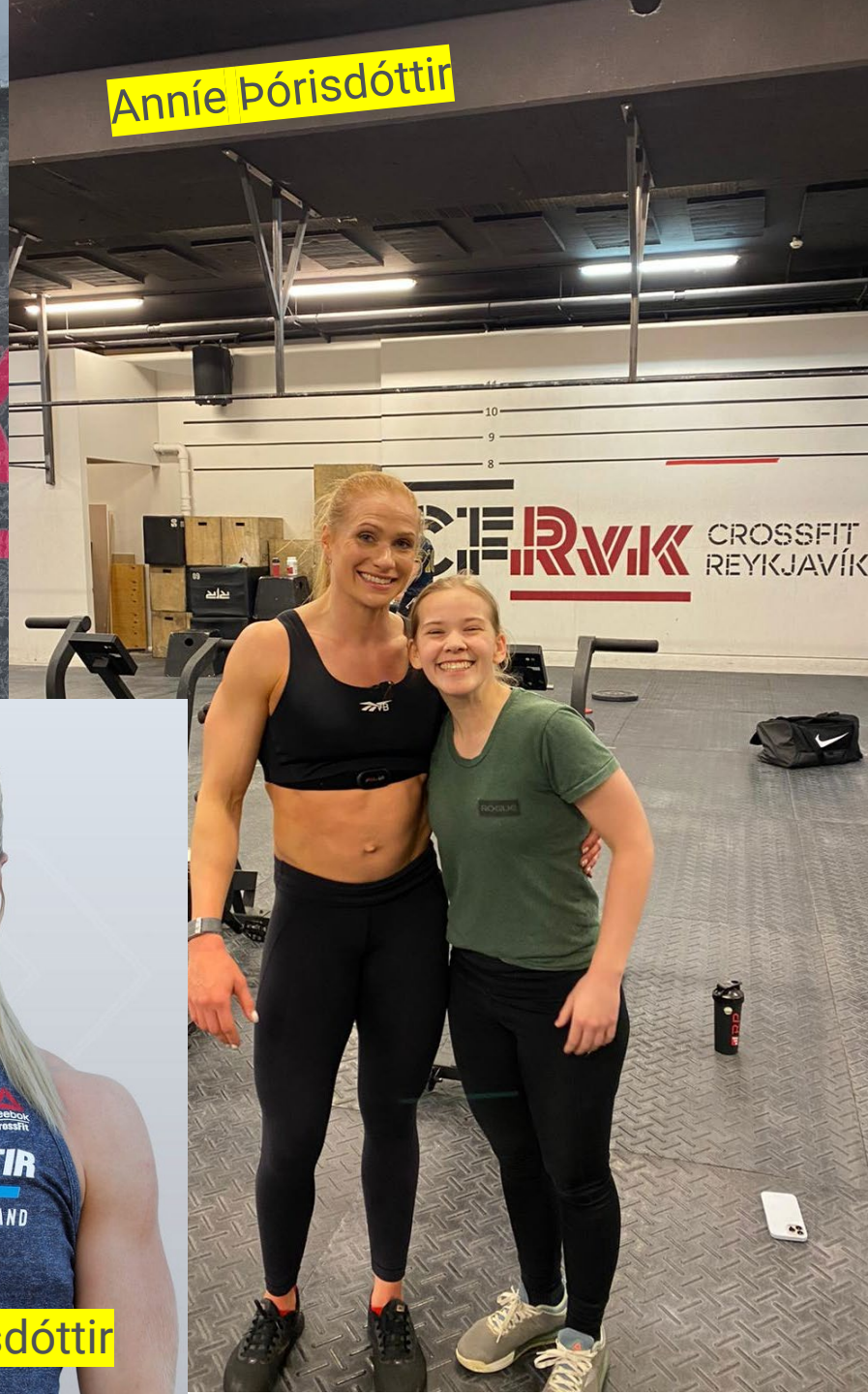
871 C.E.

- Björnólfsson
- Norwegian
- 1st Permanent resident
- Founded Reykjavik



Vikings





Viking Age

793-1000/1066 C.E.

- Middle Ages (500 to 1500 C.E.)
- 1st Raid - 789 C.E. Isle of Portland in Dorset by a group of Danes
- 793 C.E. Raids to Northumbria
- Expansion !



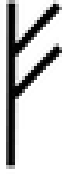

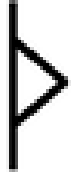

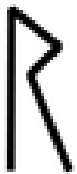
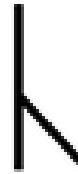
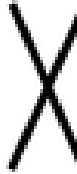
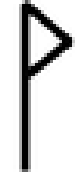

Ships & Navigation


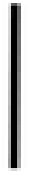

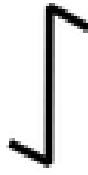



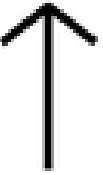
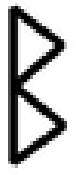
- Long boats
 - Lighter, Faster, Nimble
- Sun compass and Crystals
 - Iceland spar aka – Calcite

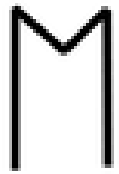
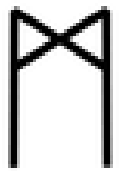
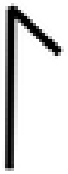
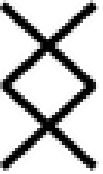
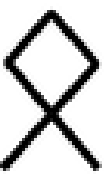
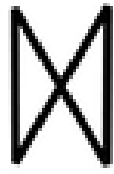




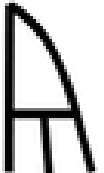
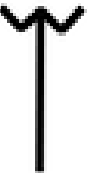

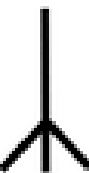
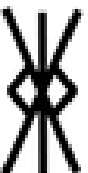


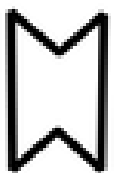
Language to Sagas

- Old Norse and Old English

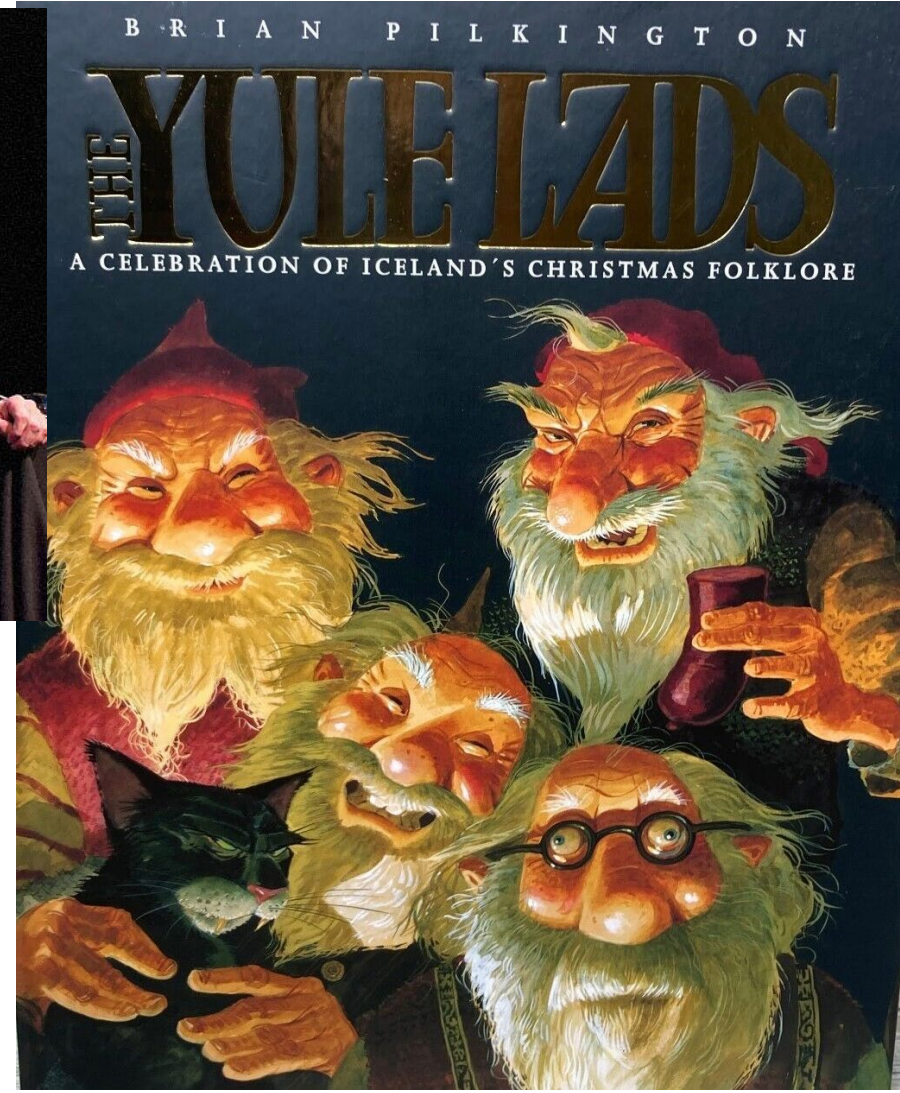
								
feoh - f "wealth"	ur - u "cattle"	þorn - þ "thorn"	os - o "mouth"	rad - r "ride"	cen - c "torch"	3iefu - 3 "gift"	pynn - p "joy"	hæ3l - h "hail"

								
nyd - n "need"	is - i "ice"	jear - j "year"	eeoh - eo "yew"	peorð - p "game"	eolxec3 - x "elk-sedge"	sizel - s "sun"	tyr - t "Tyr"	beorc - b "birch"

							
eoh - e "horse"	man - m "man"	lagu - l "lake"	ing - ŋ "Ing"	æðel - æ "estate"	dæ3 - d "day"	ac - a "oak"	æsc - æ "ash"

							
yr - y "bow"	ear - ea "earth"	iar - ia "serpent"	kalc - k "chalice"	kalc - kk "chalice"	gar - g "spear"	cpeorð - cp "fire"	stan - st "stone"

Betra er erfaettum en bokarhusum advera = *Better to be barefoot than without books*



Jæja

15 useful ways to use the word “Jæja”



in Icelandic

1. Jæja = Are you coming?
2. Jæja = Let's go!
3. Jæja = That's enough, now.
4. Jæja = What's up?
5. Jæja = How about the weather?
6. Jæja = I am bored.
7. Jæja = We should get starting.
8. Jæja = Ah, makes sense!
9. Jæja = I am glad this is over.
10. Jæja = Weird!
11. Jæja = What's the problem?
12. Jæja = It's time to leave
13. Jæja = That was disappointing!
14. Jæja = Ok! it's lost!
15. Jæja = We'll figure it out (Þetta reddast)



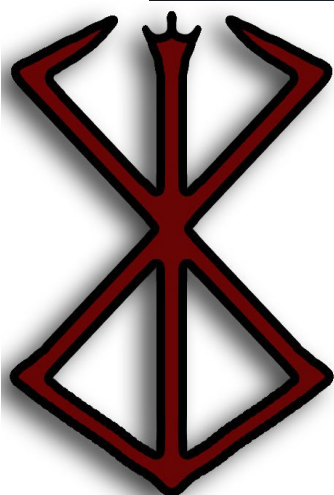
Skis & Combs

- Old Norse - skíó.” skied for recreation and transportation
- the Norse goddess Skadi and god Ullr were often depicted on skis or snowshoes.
- Bathed more than most
- Made combs out of antlers and bone
 - Found in numerous burials



Viking - Berserker

- 'Bear-shirt'
- Elite Warriors fought like bears, wolves, boars – animal cults
- Fought in a trance-like furry
- Men and Women participated
- Drug induced furry ?
 - *Hyoscyamus niger* / Henbane
 - *Psilocybe*



Gudrid Thorbjarnardóttir



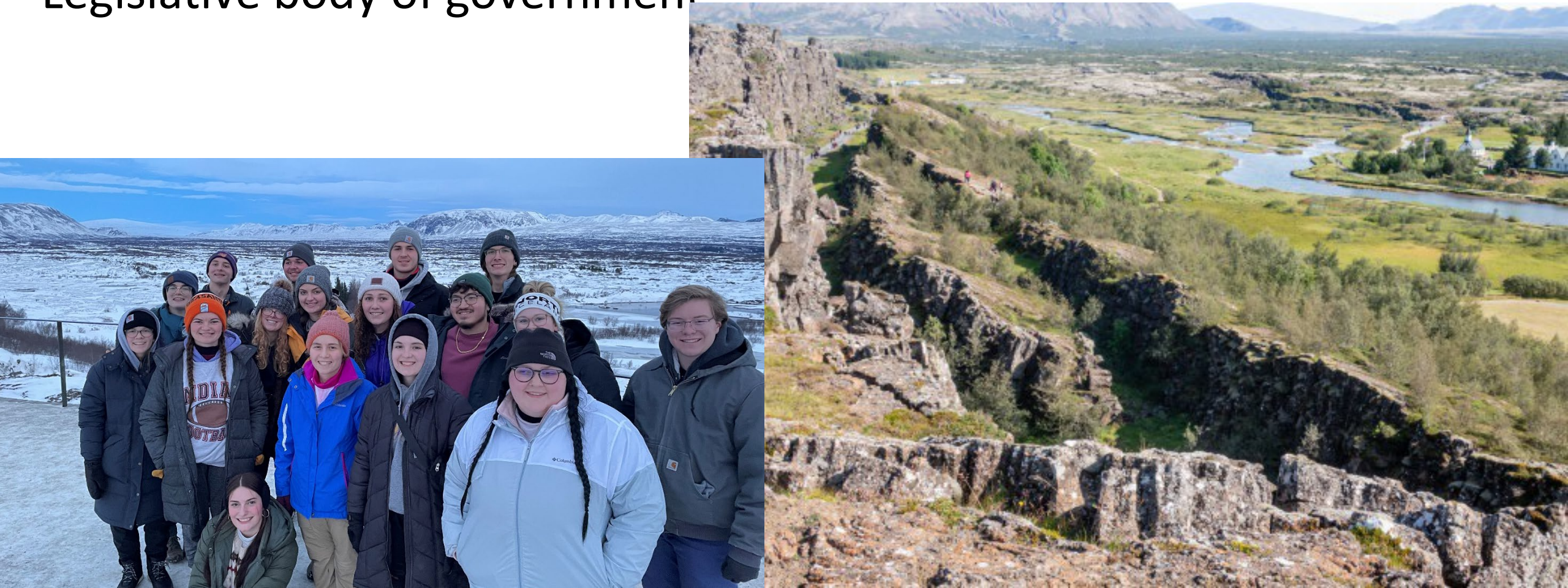
THE LIFE AND VOYAGES OF GUDRID THORBJARNARDOTTIR, 10TH - 11TH CENTURY A.D.



1. BORN IN ICELAND, GUDRID THORBJARNARDOTTIR TRAVELS TO GREENLAND WITH HER FIRST HUSBAND.
2. THEY ARE SHIPWRECKED OFF GREENLAND, RESCUED BY LEIF ERIKSON'S SHIP, THEN TAKEN TO GREENLAND'S EASTERN SETTLEMENT. GUDRID'S HUSBAND DIES THERE OF AN ILLNESS.
3. NOW REMARRIED, GUDRID MOVES NORTH TO GREENLAND'S WESTERN SETTLEMENT.
4. THEY SET SAIL FOR VINLAND, BUT ARE SHIPWRECKED AND RETURN TO GREENLAND.
5. GUDRID RETURNS TO THE EASTERN SETTLEMENT AFTER HER SECOND HUSBAND DIES OF AN ILLNESS.
6. REMARRIED AGAIN, SHE SETS SAIL FOR VINLAND AS PART OF A LARGE EXPEDITION. THEY SETTLE IN VINLAND FOR A FEW YEARS, BEFORE RETURNING TO GREENLAND AFTER FIGHTING WITH THE INDIGENOUS PEOPLES MAKES VINLAND UNTENABLE.
7. GUDRID AND HER HUSBAND TRAVEL TO NORWAY TO RECEIVE A HERO'S WELCOME.
8. THEY SETTLE IN ICELAND AND FARM. GUDRID'S THIRD HUSBAND LATER DIES OF OLD AGE.
9. GUDRID UNDERTAKES A PILGRIMAGE TO ROME, RETURNING TO THE FAMILY FARM TO LIVE OUT HER REMAINING YEARS AS A NUN.

Alpingi at Þingvellir

- Humanity's first Parliament
- Legislative body of government



'Conversion' to Christianity

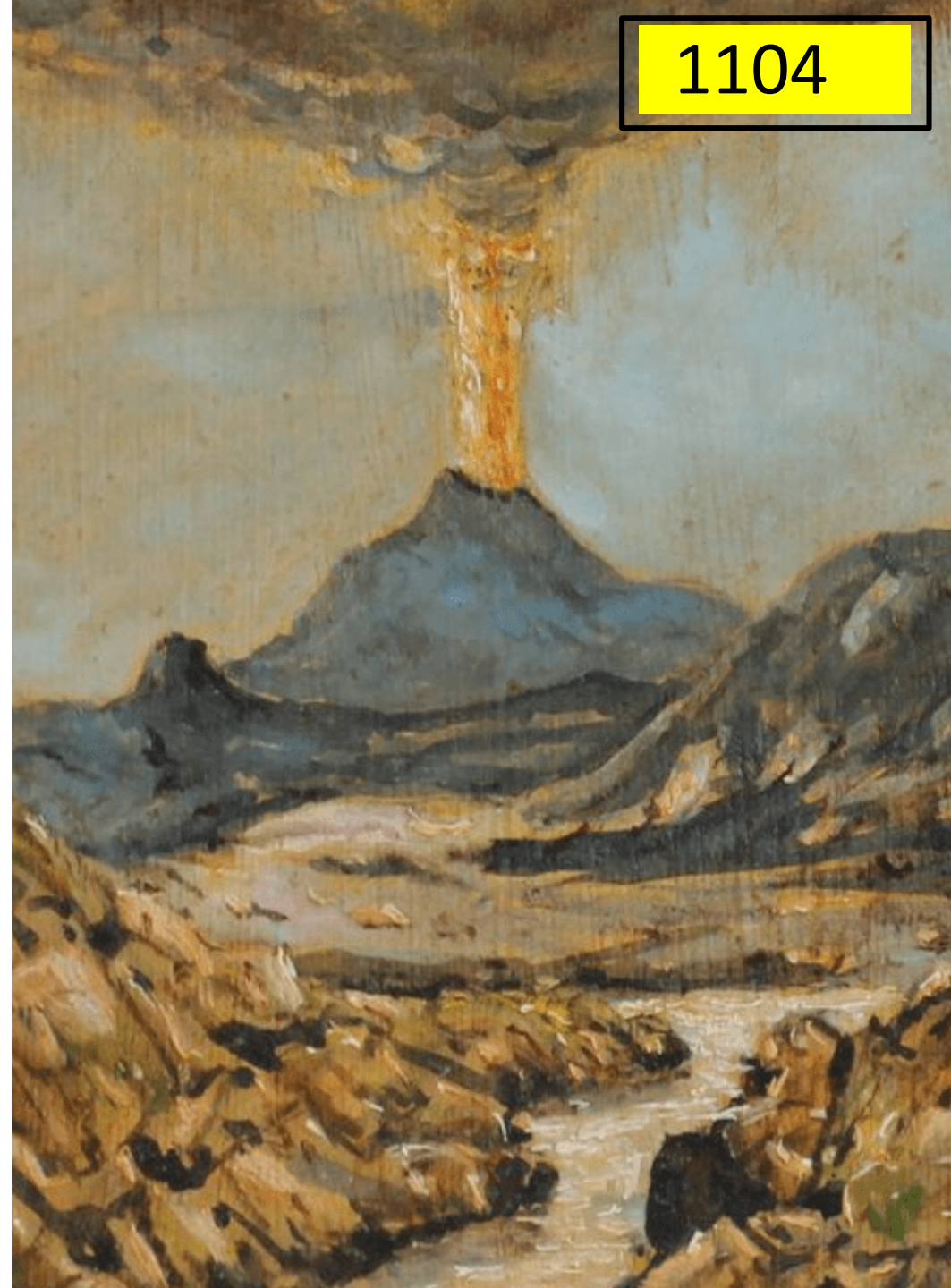
- Under Norwegian/Viking King
 - Olaf Tryggvason
 - Child slave to King
 - Baptized the explorer Leif Ericson
- Olaf routinely used force to compel conversion to Christianity, including execution and torture of those who refused



Hekla Erupts

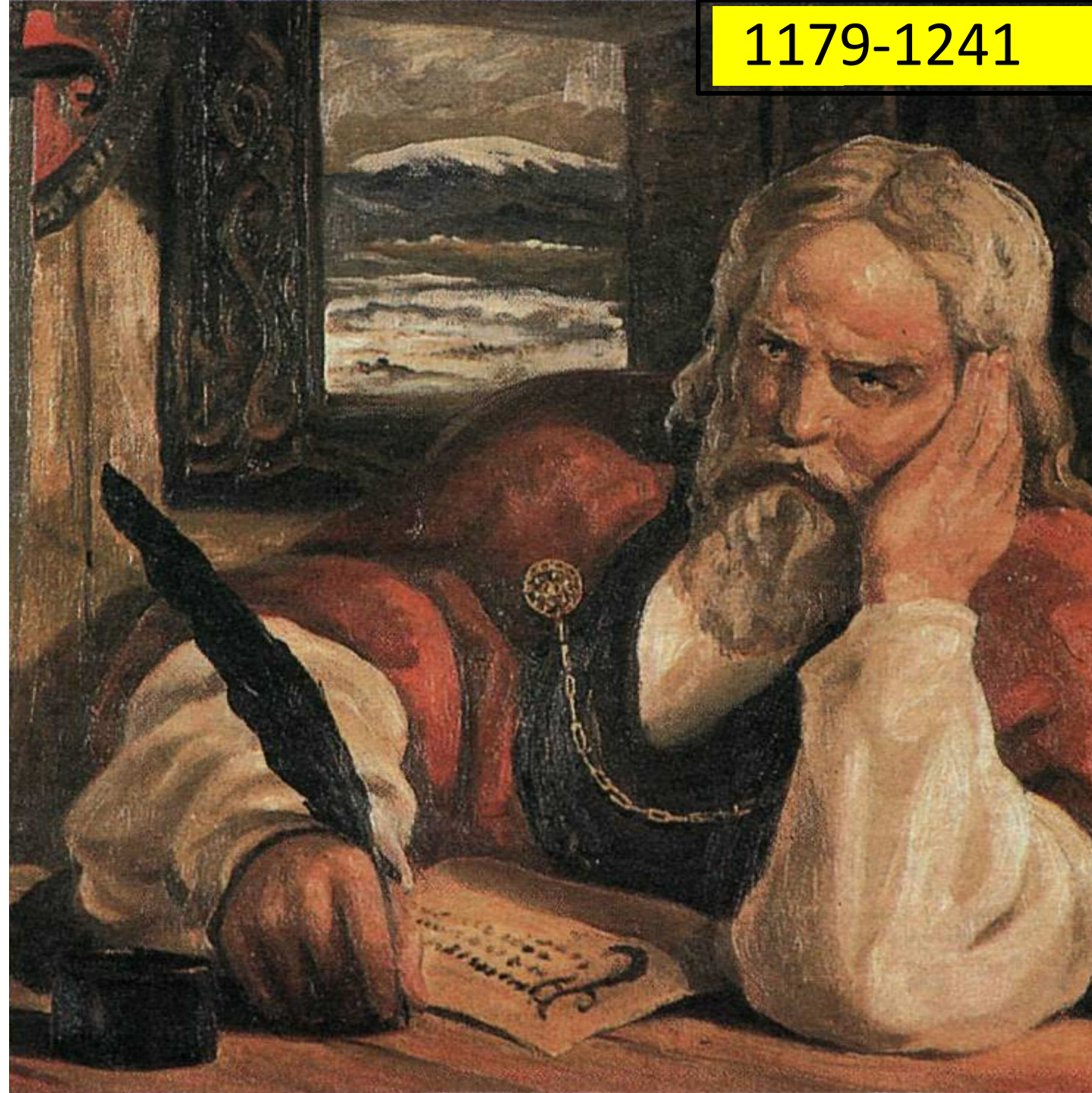
1104

- Most famous Icelandic Volcano
 - Strato/Composite
- 20 Eruptions , 13% of total
- There are suggestions that Ragnarok is an echo of Eldgja



Snorri Sturlusson

- Invented modern literary format
 - Narrative with realistic dialog
- Up to him, communication was primarily oral
- Without his Sagas we would know little of the Vikings and Norse Mythology
 - Prose Edda
 - Egil's Saga
 - Heimskringla – Scandinavian Royalty lineages
- Politically active
 - Elected twice to lead Iceland's Parliament



Snorri Sturlusson

- He was assassinated by men claiming to be agents of the King of Norway.
- His last words
 - Eigi skal höggva!
 - Do not strike





Black Death

1402-04





1602 C.E.

Denmark Trade Monopoly

- April 20, Kingdom of Denmark imposed a trade monopoly on Iceland.
 - Iceland could only trade with Danes
- Denmark sent a single shipment of goods to Iceland each year, a great deal of these goods of substandard quality, with food often spoiled or already rotting.
- Skúli Magnússon – Iceland Sheriff
 - Forced merchants to live in Iceland
 - And allowed them to invest in other Icelandic businesses



West Fjords Witch Hunt

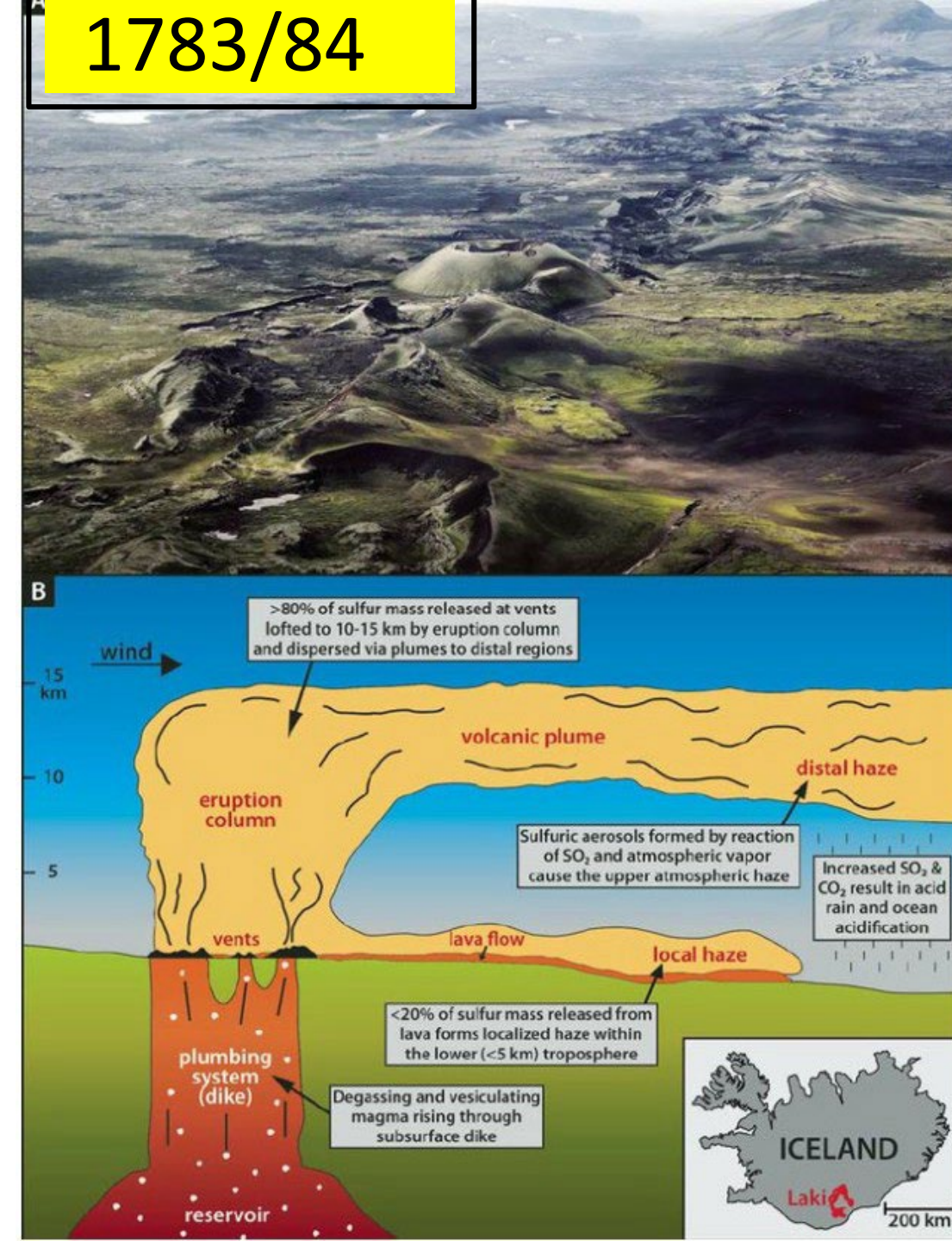
- Danish authorities introduced the belief in witchcraft and Danish Witchcraft Act then began persecutions.
- Witch trials were introduced by a foreign elite power in an area with weak Christianity to ensure religious conformity.
- 120 witch trials and 22 'confirmed' executions

1625-85



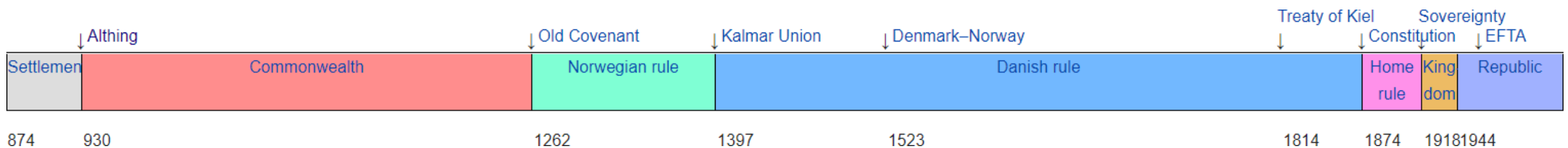
Laki Eruption

- **Fissure break**
 - Ten major earthquakes
 - 8 mile high ash pillars
 - 220 sq miles of new lava
- No direct deaths, but...
 - Over 10,000 died due to famine
 - 2/3 of the Islands animals died
- 23,000 Deaths in England/Ireland - sulfuric gas clouds
- Famine in Italy and Africa
- May have contributed to the French Revolution
- Froze the Gulf of Mexico off New Orleans



Independence & Free Trade

1855-90





WWII

1940-41



1930 – Celebration, 1000 Althing Valbjófsstaður, 1150



Thor Thors & Israel

1940-41



- Brother was Iceland's P.M.
- Very wealthy business family
- U.N. Delegate to USA ambassador
- Set up the first Icelandic Embassy in Washington D.C., out of his garage!
- Helped broker the creation of Israel as a neutral U.N. Rep. in 1948



Sigríður Tómasdóttir, 1900

- Iceland's first environmentalist/conservationist



Gullfoss



- Icelandic Folklore
- Trolls lived in the mountains and only came down from them to forage for food.
- Trolls can only survive in the darkness of night, if they were caught in the sunlight they would immediately turn to stone.

Ardis Thorbjarnardottir



Elves, trolls & other life forms



Ardis Thorbjarnardottir

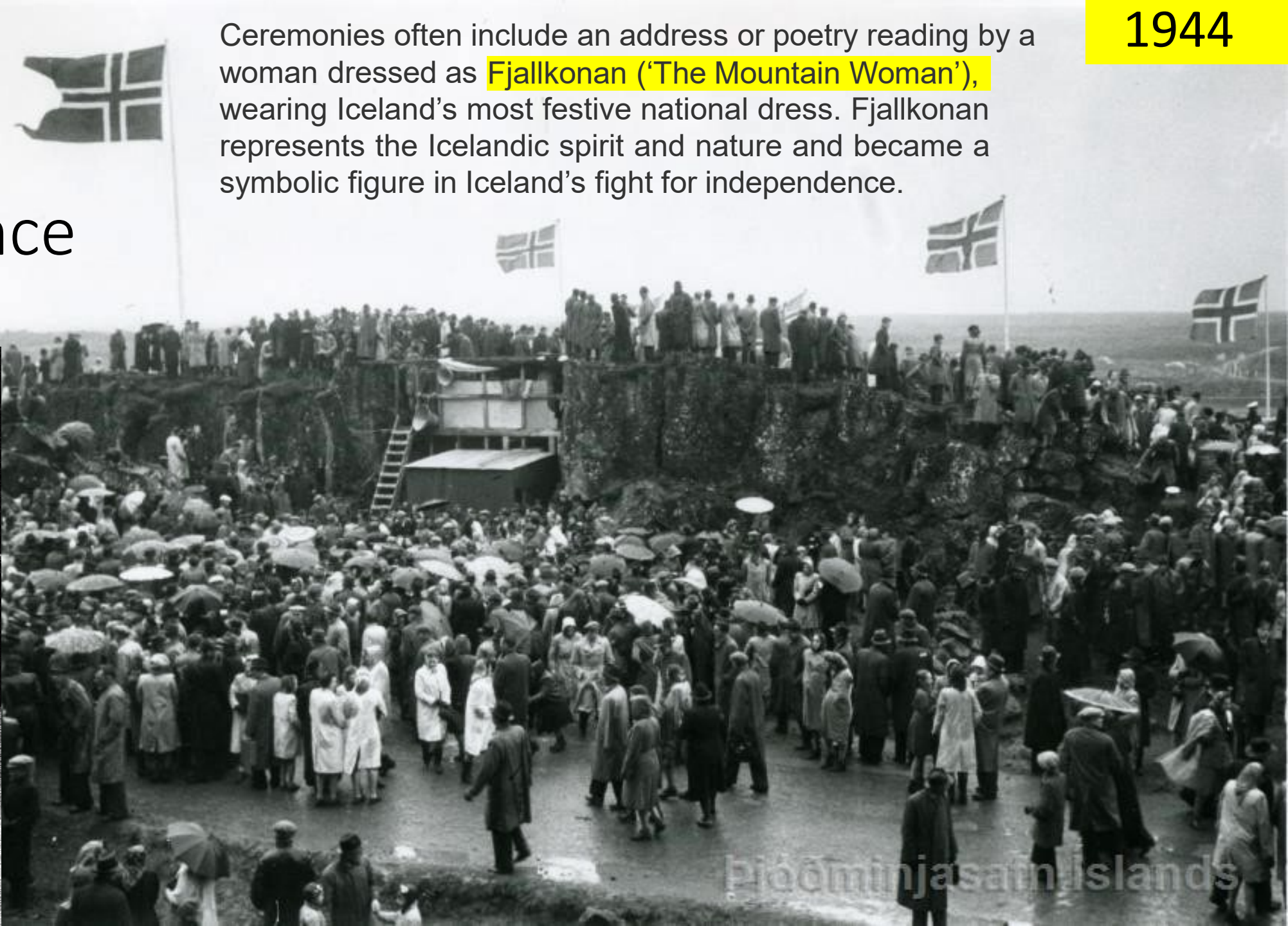
- 22 years old, 1930s
- Au pair to the J.R.R. Tolkien Family
 - Shared Icelandic Folklore
 - Helped translate Sagas
- Influenced the Hobbit and other famous stories



1944

17 June Independence

Ceremonies often include an address or poetry reading by a woman dressed as **Fjallkonan** ('The Mountain Woman'), wearing Iceland's most festive national dress. Fjallkonan represents the Icelandic spirit and nature and became a symbolic figure in Iceland's fight for independence.



Þjóðminjasamtök Íslands

Global Financial Crisis

- Chad visits Iceland 😊
- Banks: Kaupthing, Landsbanki & Glitnir multiplied in size
- Over extended – Money markets
- Currency and stock market crash
- Recovery was slow
- Only country to jail some of the responsible bankers



Political Change

- Economic Crisis led to change
 - Left Green Party
 - Pirate Party
 - Independence Party
- Jóhanna Sigurðardóttir
 - 1st Female P.M.
 - World's 1st openly LBGTQ leader
 - Social Democratic Alliance Party

8 active & 7 other parties

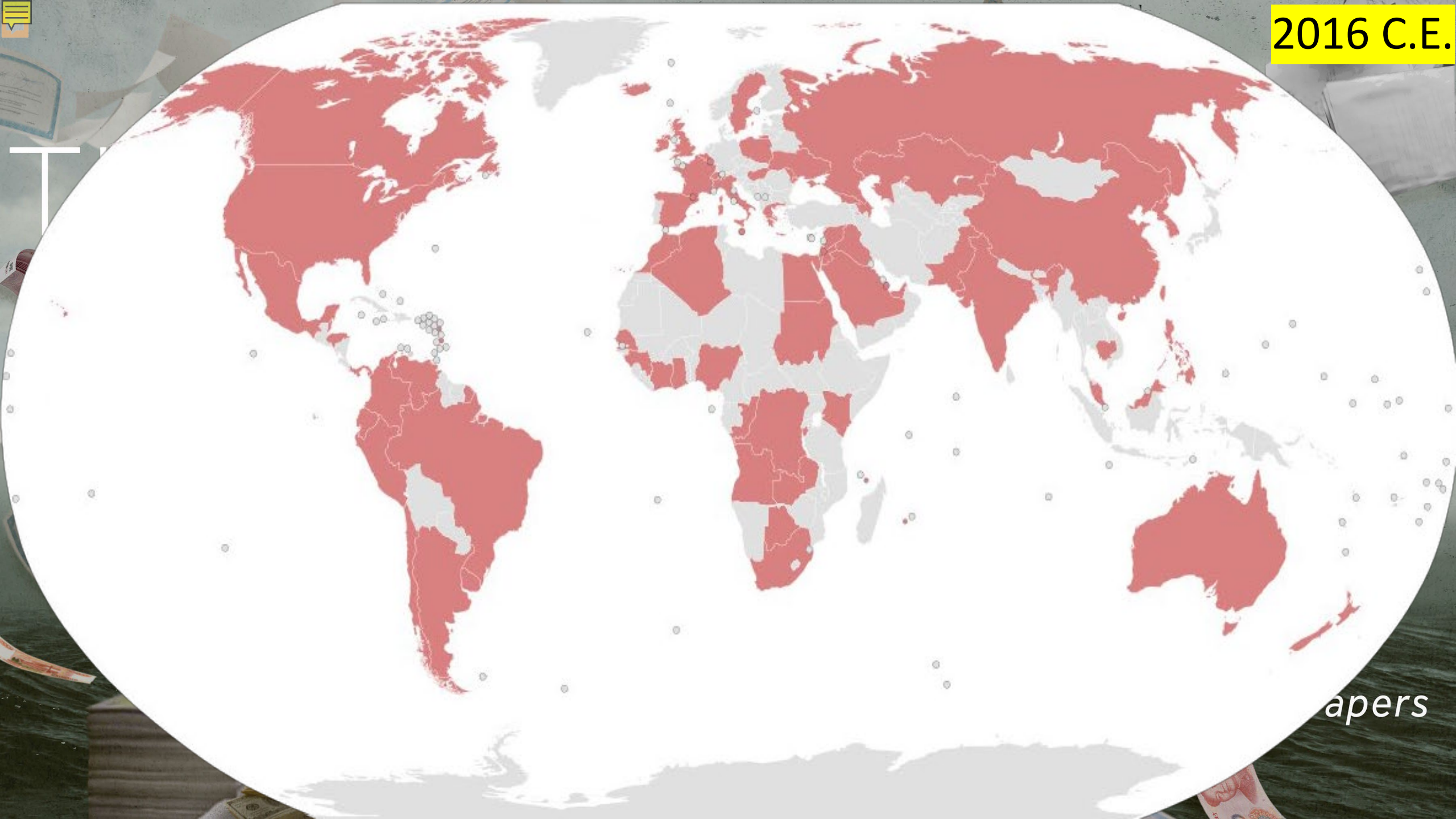


Tourism Boom





2016 C.E.



papers

Katrin Jakobsdottir

- Progressive Party – Left Green Movement becomes P.M.
- Coalition of the Independence and Progressive Parties
- Opposes Icelandic membership of NATO, but as part of the compromise between the Left-
- Greens and their coalition partners,
- the government does not intend to withdraw from NATO or hold a referendum on NATO membership.





Covid Success

2019/22

- Used science
 - “Immediate: testing, contact-tracing, and putting everyone diagnosed into isolation. We did this aggressively, from day one.”
- Border control
- 208K cases - 229 deaths
- IA 890K – 10,770



“I think it's important for a politician to realize what is politics and what needs to be solved by scientific means. It's my firm belief that we need to listen more to the experts”

Iceland S.W.O.T.

- Strengths

- Isolated
- Abundant access to energy
- Some of the best water and food on the planet

- Weaknesses

- Isolated
- Limited access to diverse minerals
- Harsh weather



Native Americans Natural Resources and their Civilization



National
Geographic,
July 2022

DATE CHART

BC 5000 4000 3000 2000 1000 0 AD 1000

4300



BCE

Native American Societies
30,000

SUMERIANS



30 BCE

HITTITES



ASSYRIANS



ISRAELITES



ACHAEMENIDS



MINOANS



MYCENAEANS



GREEKS



ETRUSCANS



ROMANS

EASTERN
EMPIRE

WESTERN
EMPIRE

625 BCE

476 CE

Egyptians
3000

Iceland 871 CE
USA 1776 CE

Romans
1000

Outside of class work – Week 4



- Robin Wall Kimmerer Podcast and
- Nature Sustainability: March 2020 –
 - Conservation implications of limited Native American impacts in Pre-contact New England by Oswald, WW et al. 5 pages

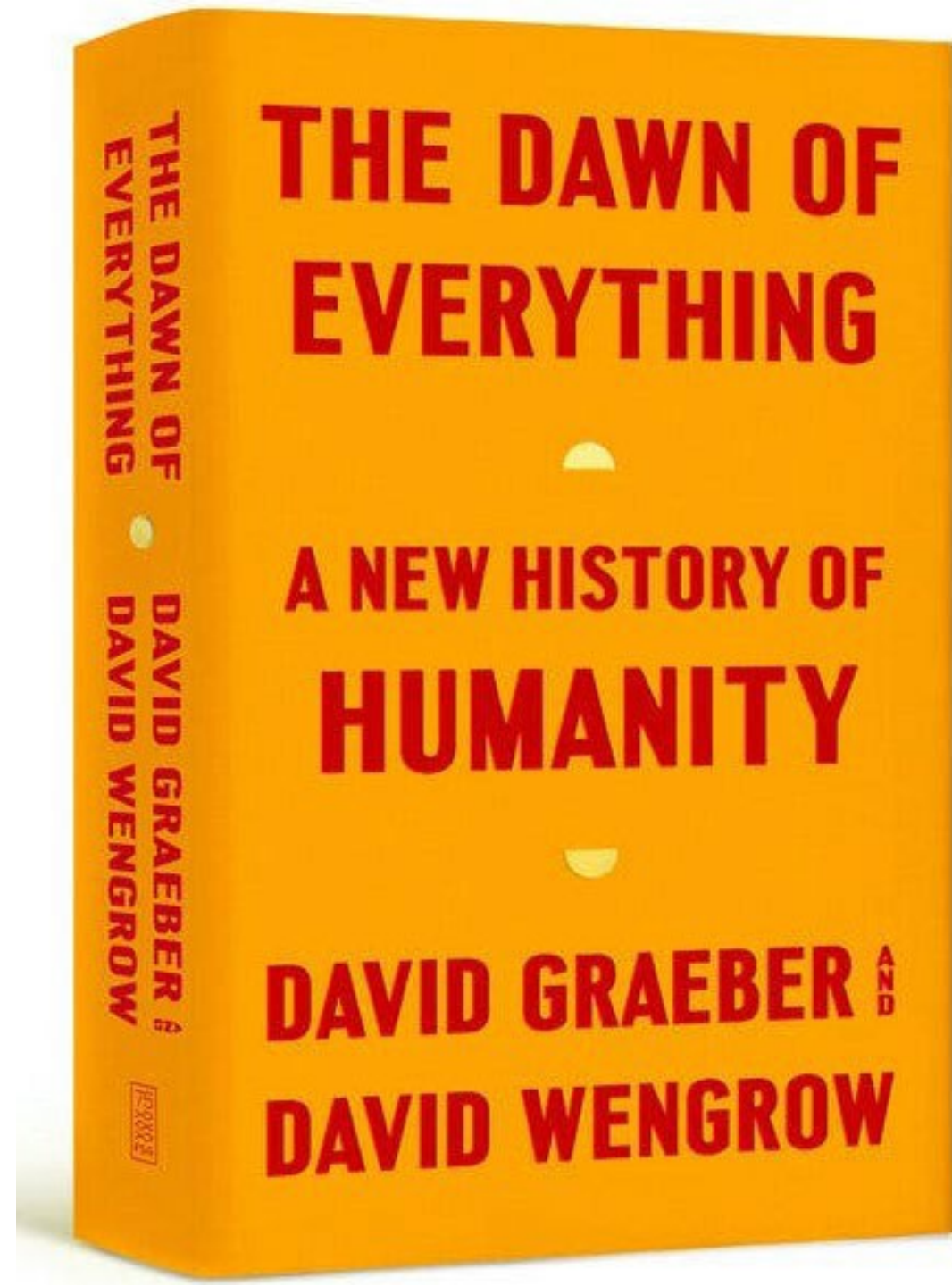
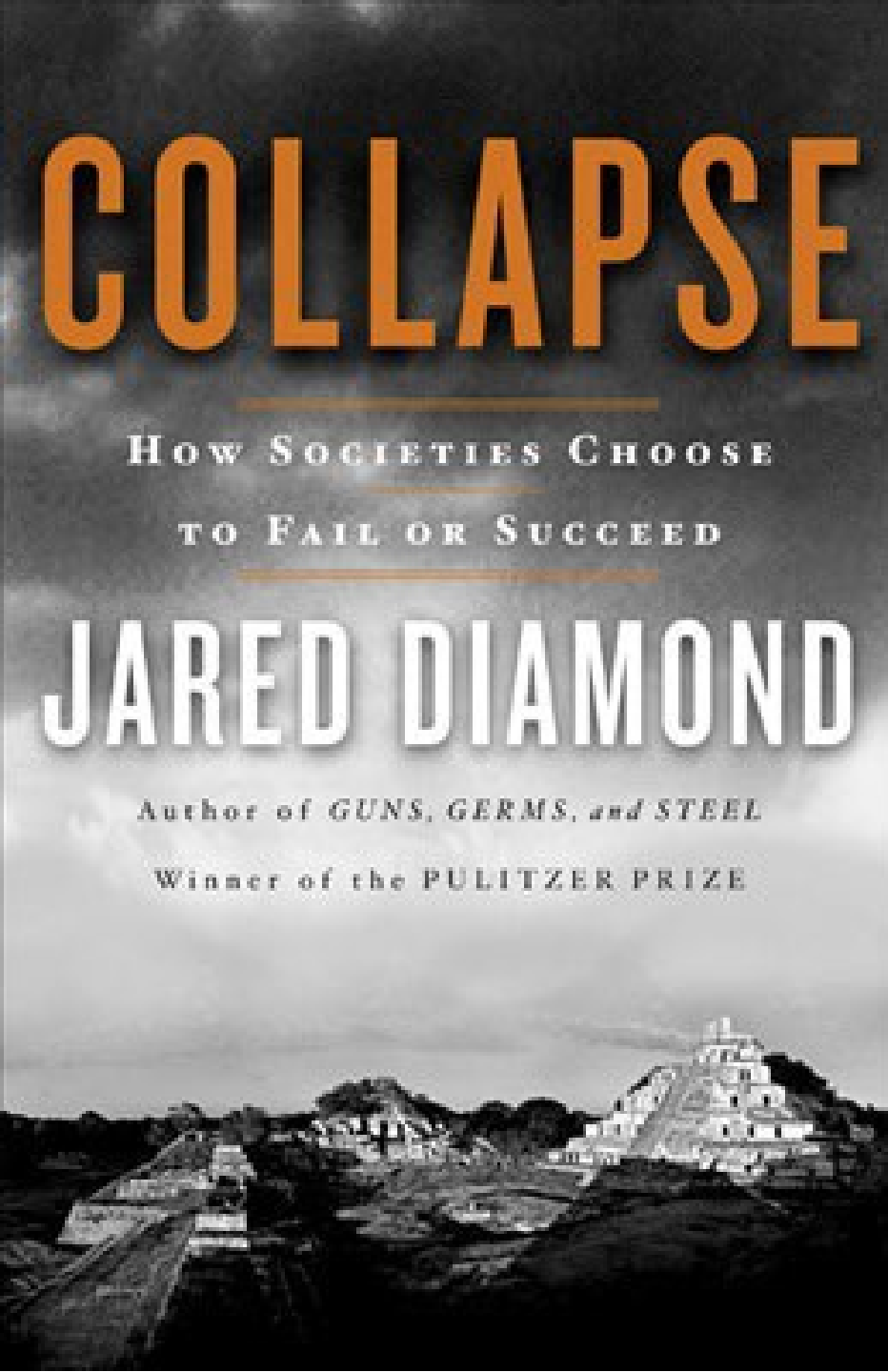
Week 4 Questions again...

- Can colonialism and conservation coexist?
 - Does colonialism = over consumption ?
- What is the relationship between population size and forced innovation/technology?

Questions week

- What is the relationship between population size and forced innovation/technology?
- Can colonialism and conservation coexist?





EUROPEAN COLONIZATION OF NORTH AMERICA c.1750



Glory
↔
God
↔
Gold

Illinois Archaeology - Koster '69 to '78

7800 BCE
To
1000 CE



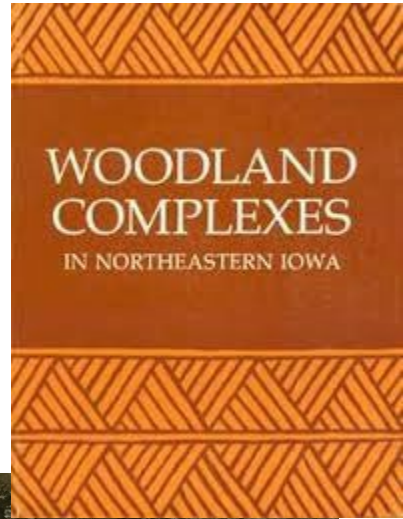
1050
to
1350 C.E.

Cahokia



Est. Pop. 12,500

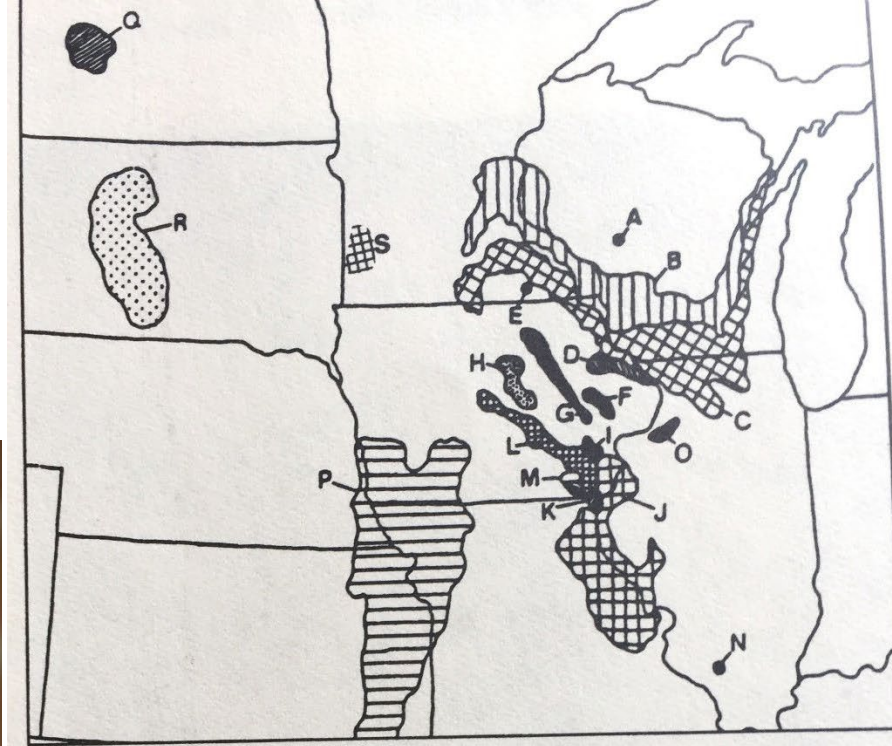
Levsen Rock Shelter – Paul Sagers



Seeberger Rock Shelter



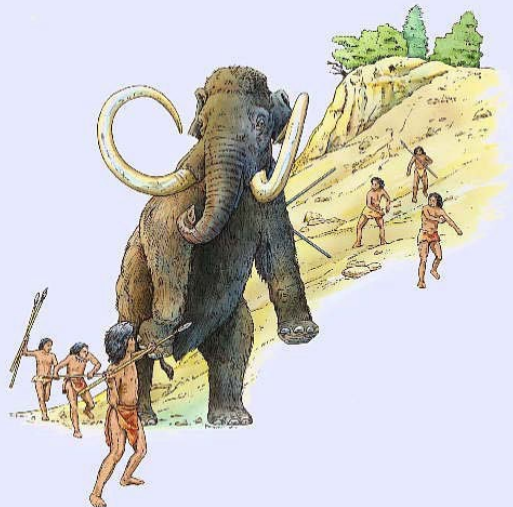
Local chert – Knapping



3.6. Outcrop locations of lithic materials commonly found in Iowa sites. (A) Hixton silicified sandstone; (B) Prairie du Chien cherts; (C) Galena/Platteville chert; (D) various Silurian cherts; (E) Grand Meadow chert; (F) Wapsipinicon chert; (G) Rapid chert; (H) Maynes Creek cherts; (I) Wassonville chert; (J) Burlington cherts; (K) Keokuk chert; (L) Croton cherts; (M) Spergen chert; (N) Cobden chert; (O) Moline chert; (P) Missourian and Virgilian series cherts; (Q) Knife River flint; (R) Bijou Hills silicified sediment; (S) Minnesota catlinite, or pipestone.

After Morrow 1994



Technology



Clovis 13,000 cal BP

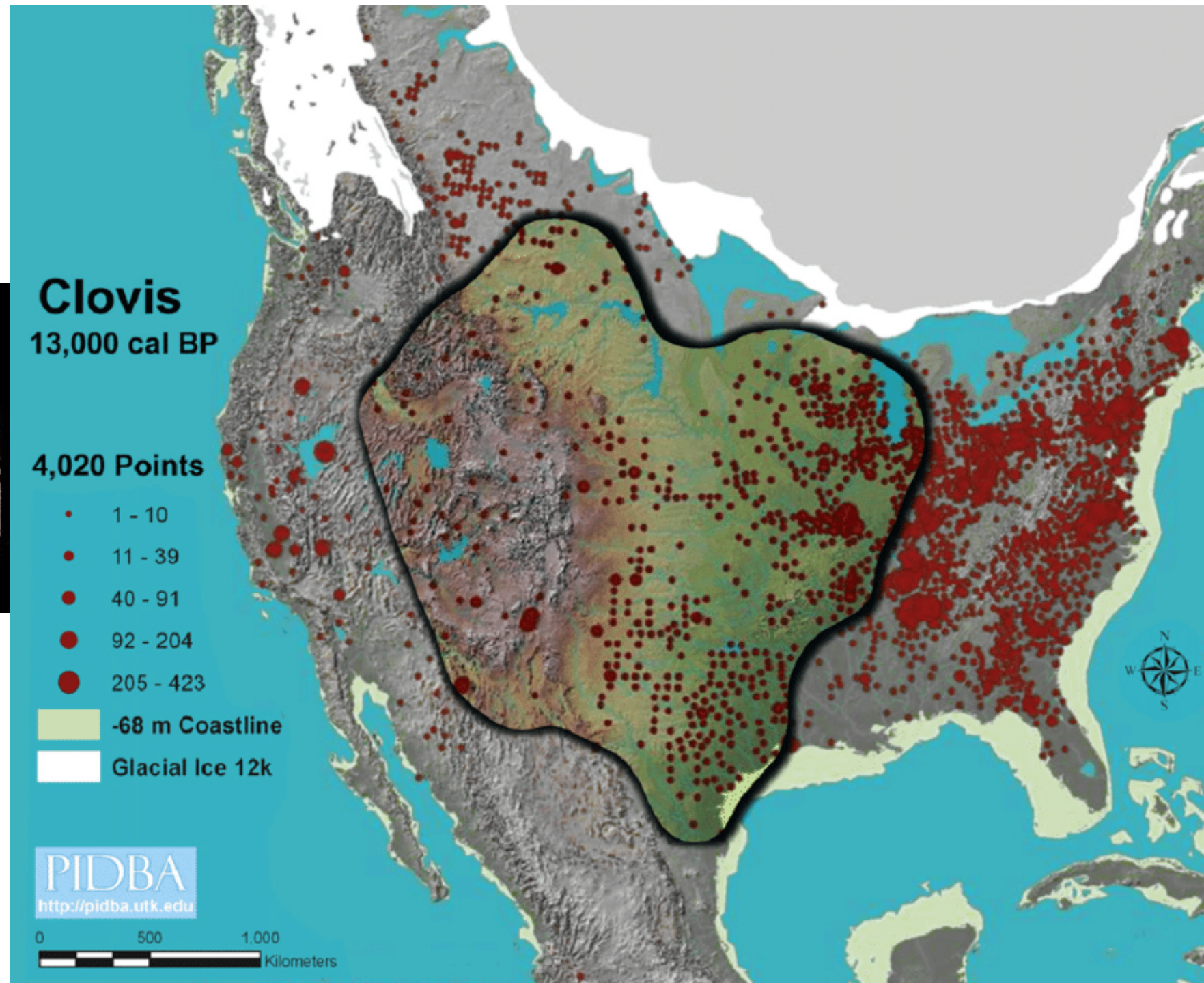
4,020 Points

- 1 - 10
- 11 - 39
- 40 - 91
- 92 - 204
- 205 - 423

 -68 m Coastline
 Glacial Ice 12k

PIDBA
<http://pidba.utk.edu>

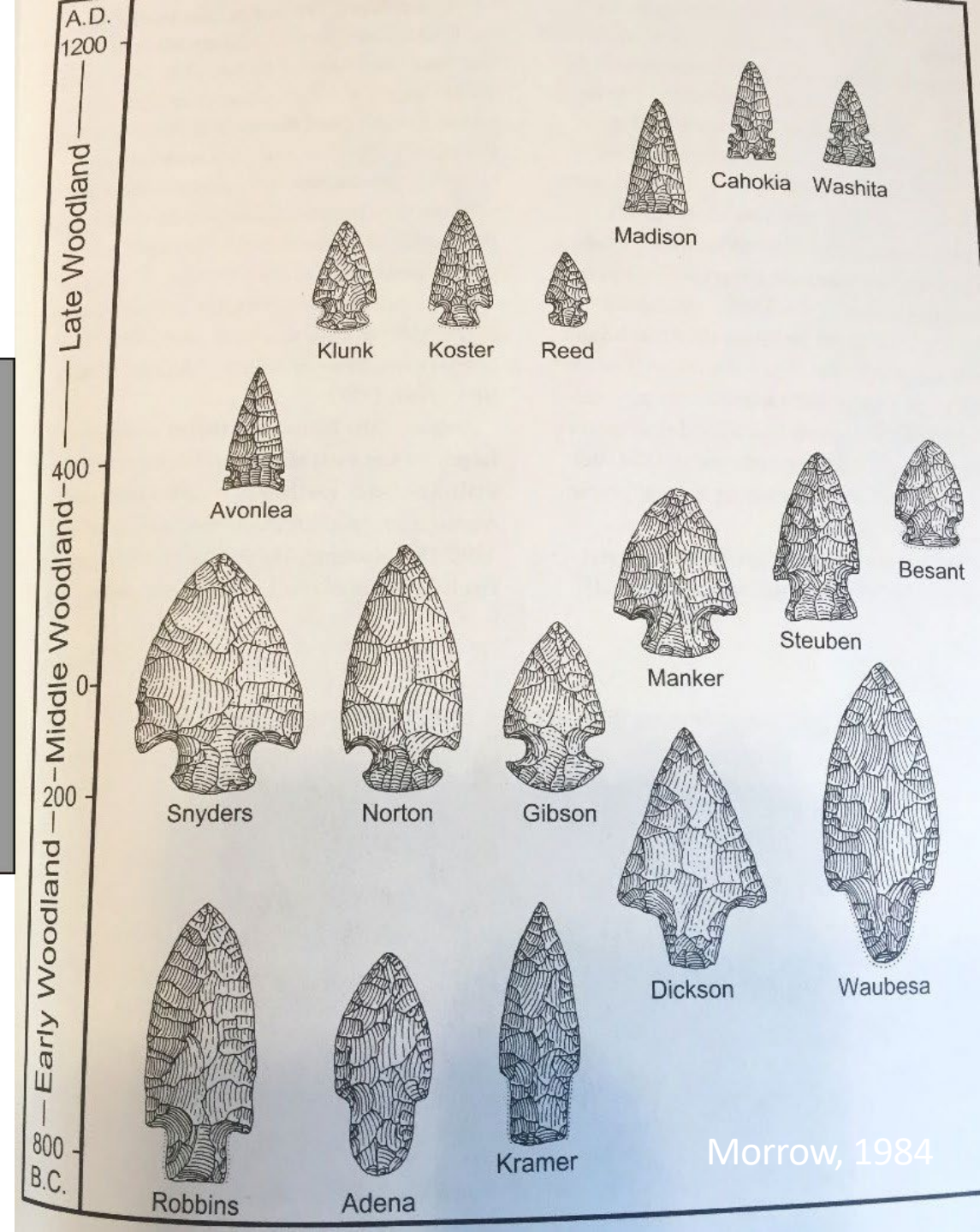
0 500 1,000
Kilometers

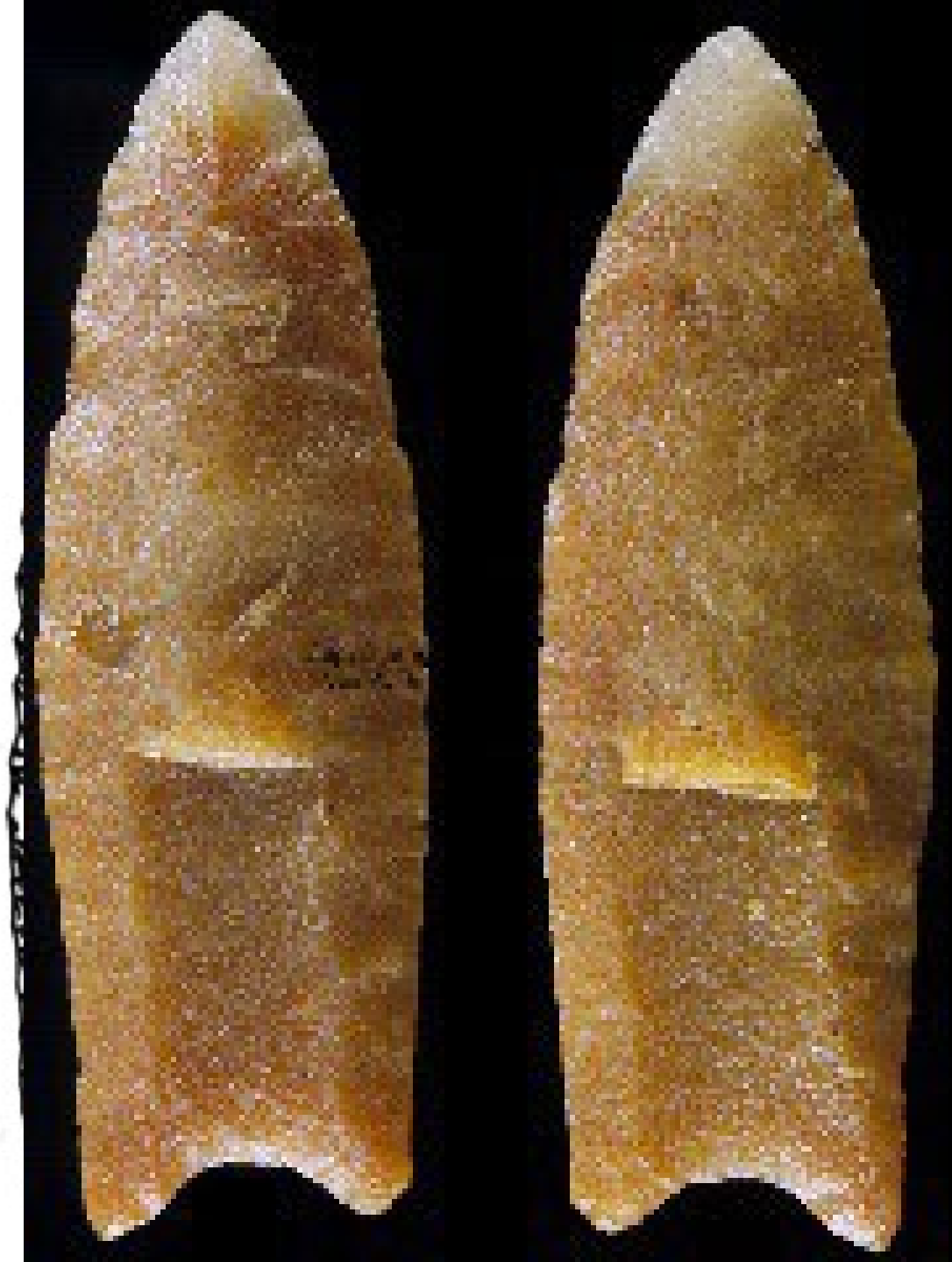


Technology



Woodland Innovations
Mound burials, Pottery, Plant cultivation





Clovis Points

Oldest known type in N. America

Found in association with Mammoth Sites

Fluted Spear Points

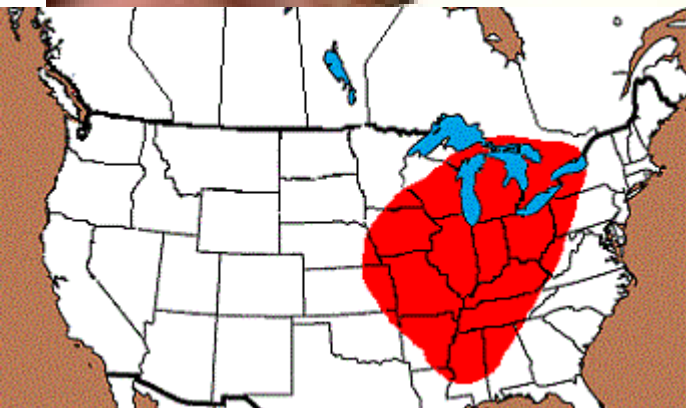
Hixton Silicified Sandstone

Western Wisconsin

Early Woodland Waubesa/Beavertail



- Contracting spear stem, lanceolate to triangular shapes
- Common throughout Midwest
- Associated with shell middens and sandy pasted Prairie pottery 0 to 100AD
- Made of local chert or silicified sandstone

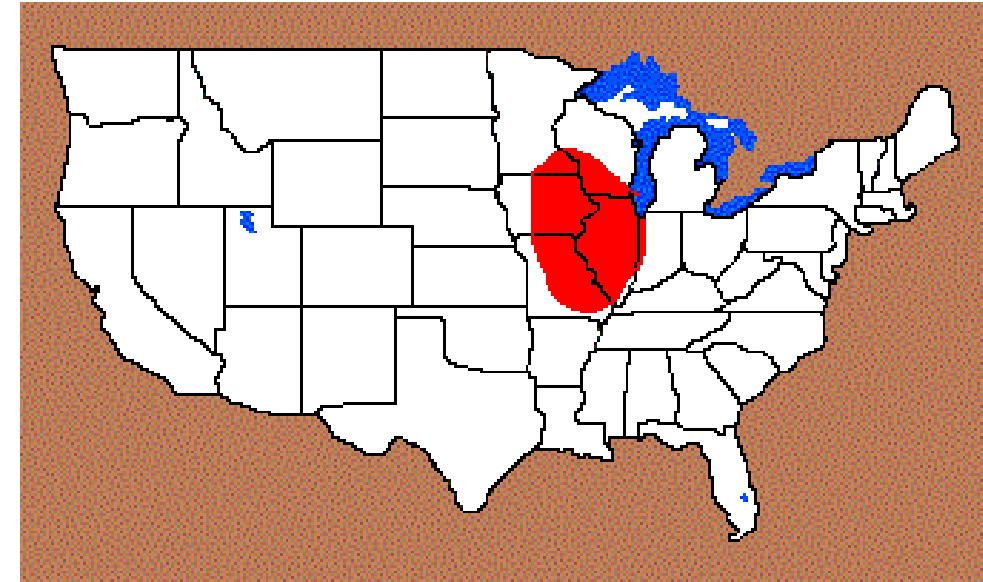


Quartzite

Cahokia/Grant Side-Notched Late Woodland



- Four classes double, triple, multi notched and/or serrated
- Iowa, Illinois, southern WI, Missouri, AR, eastern OK
- Made of local chert, possibly heat treated



Burials

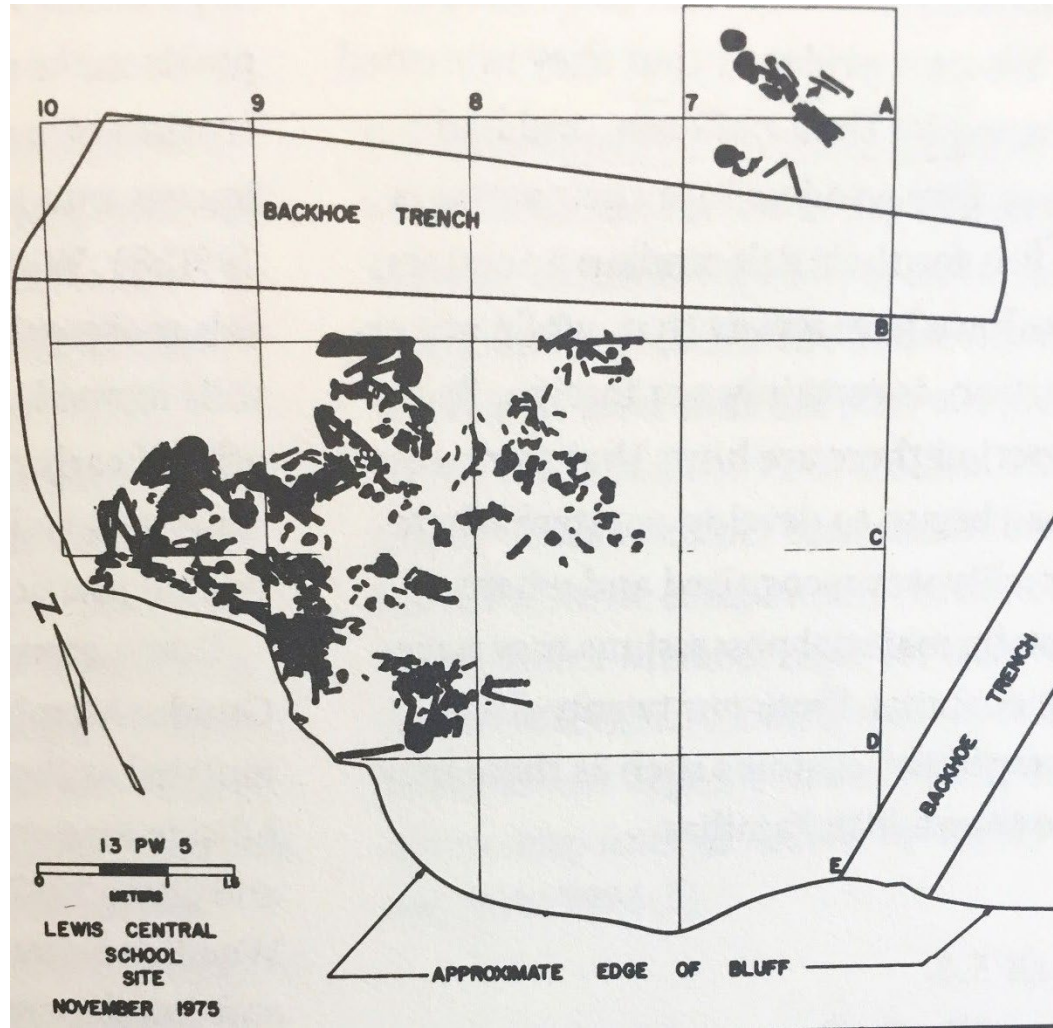
End of Archaic IA,
Communal sites

Goods – Copper
beads, Galena cubes,
Exotic lithics, Red
Ochre

Flexed vs. Mass

Status vs. Skill

Mourning & sense of
place



Metallurgy

Begins archaic, Est. 3800 BCE

Source WI – MN

Trial and Error to annealing

Products – points, beads, hooks, awls, pendants

Eastern Iowa



Food and Agriculture



Archaic domesticates:

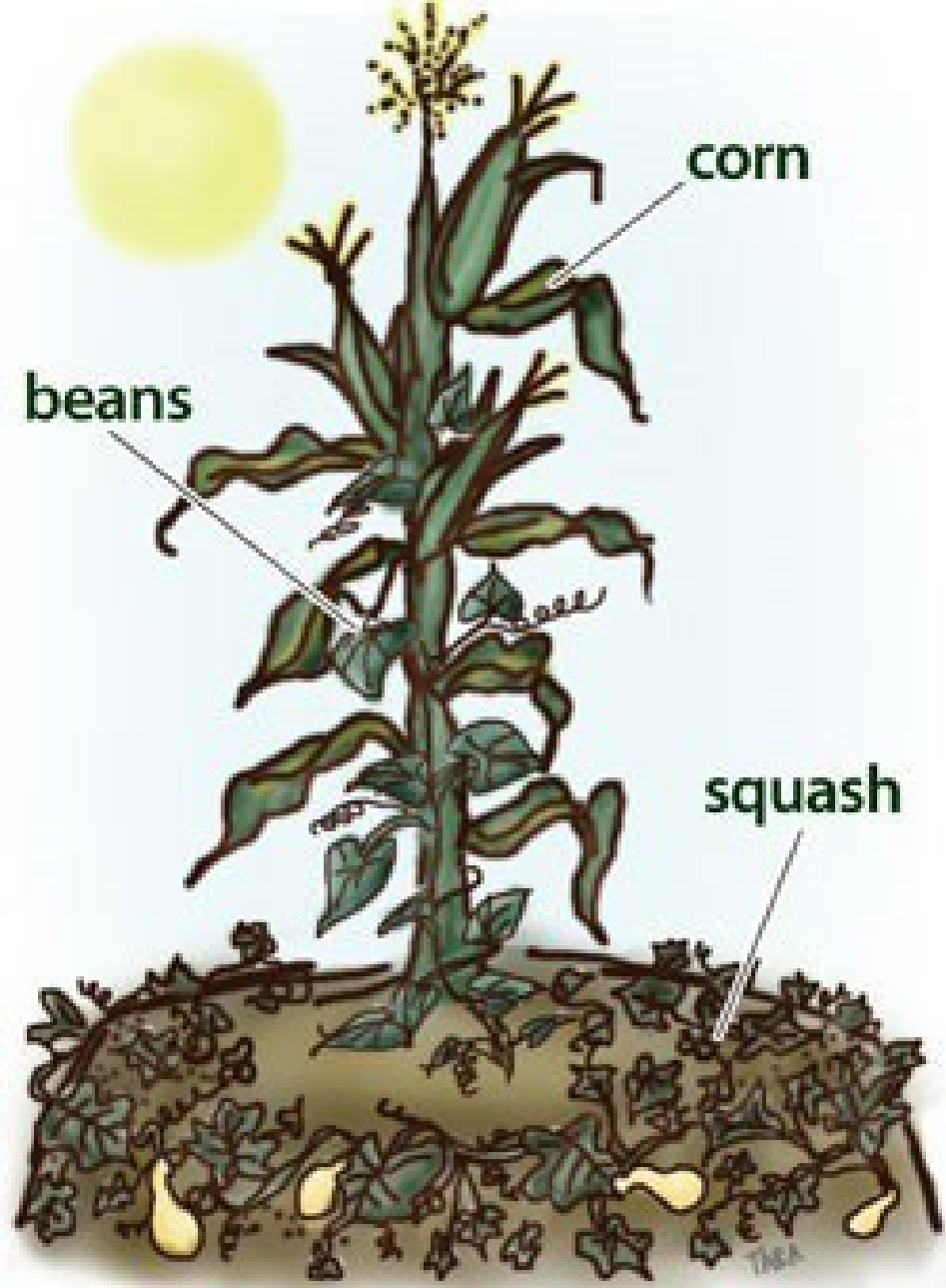
Gourds, Squash, Sunflower seeds, Maygrass, Knotweed, Barley

Woodlands:

Corn Central America first – short growing season varieties common by 1000 CE

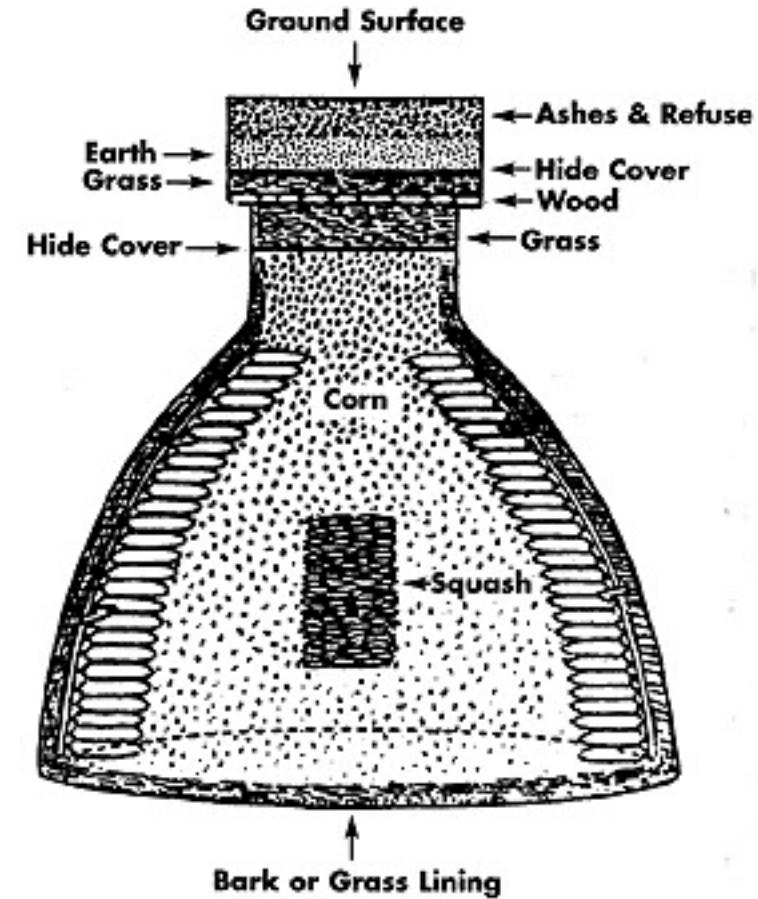
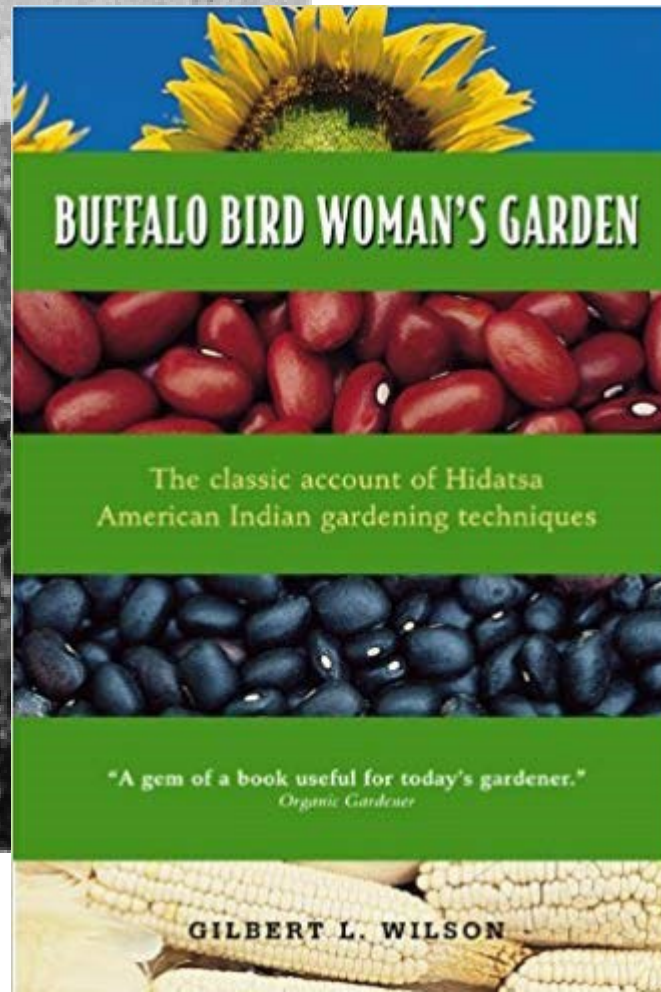
Tobacco/150-300 CE

Three Sisters Planting



*Direct-Sow, Easy-to-Grow:
The Ancient **Three Sisters** Method*

Health and Population



Red Cedar (*Juniperus virginiana*)



- Mineral and Stone
 - Copper, Galena, Ochre, Iron
 - Chert
- Vegetation
 - Bark, Sap, Sweetgrass, Sage
- Animals, Fish, Insects
 - Large to small (Bison to oyster shells)
- Soil to Sediment
 - Agriculture, Clay
- Water
 - Navigation and Life

Resource Summary



Leadership

1848



WA - PEL - LA
A MUSQUAKEE CHIEF.

1832



1850's Exploration of the Upper Missouri River & Dakotas

Ferdinand V. Hayden



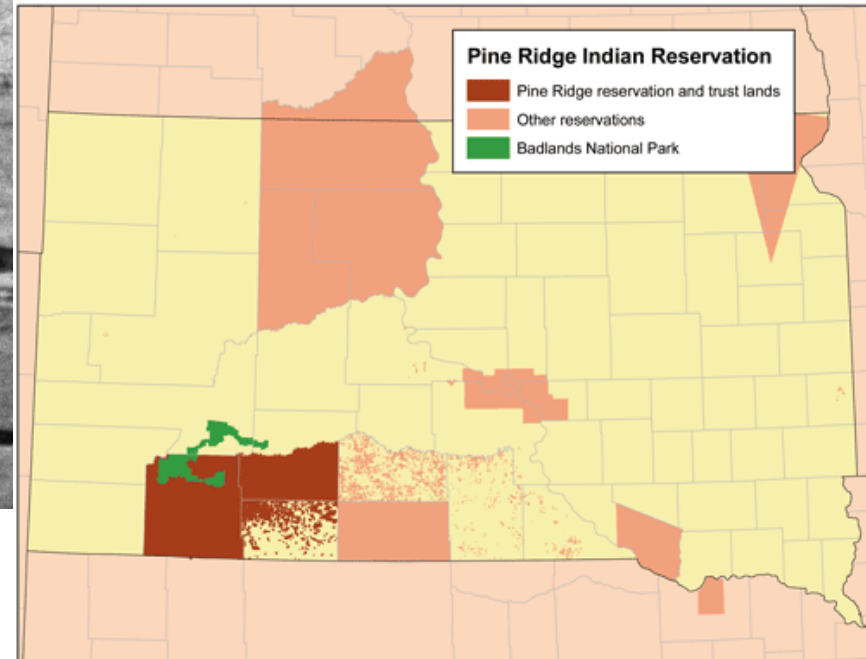
Fielding B. Meek

TATANKA IYOTAKA

- 1831-1890
- Prominent Hunkpapa Lakota Sioux leader
- Defeated Gen. Custer at the Battle of Little Big Horn
- Traditionalist
- Ghost Dance
- Standing Rock Res.



Wounded Knee



December 29, 1890, 300 deaths

Black Elk



Battle of Little Bighorn, June 25–26, 1876





AT A DEEPER LOOK SOIL

*UNI partners
with Meskwaki
Nation to support
food sovereignty
initiative*





TRADITIONAL FOOD PRINCIPLES



At longhouse gatherings, public feasts and community events in Western Washington tribal communities, elders often speak about the importance of native foods. They say that wealth is having access to native foods, and the knowledge of how to gather, prepare and serve them. The values and cultural traditions around food today are as applicable as they were generations ago. We call these Traditional Foods Principles. They address the physical and spiritual health of individuals and communities, in conjunction with the well-being of the land.

Cultivate Food Sovereignty

Food sovereignty is at the core of tribal sovereignty. It is the inherent right of a community to have access to healthy, culturally appropriate food. When our ancestors signed the tribal treaties, they made sure that we would have native foods for generations to come. *Each time we exercise our right to harvest native foods, we strengthen cultural identity, relationship to the land, and to our community.*

Promote Generosity

Generosity is a value inherent to northwest native culture, which includes both giving and receiving. People often express gratitude for the abundance of the land and the water, and they pass that gratitude on by sharing. In potlatch and other ceremonies, families work hard to give food and other items away. *When we harvest native foods for elders or those in need, we are caring for the health of our community. It is through giving, not through acquiring money or things, that I become truly wealthy.*

Cook and Eat with Good Intention

Cooking is a time to pay respect to the plants and animals that gave their lives to nourish our bodies. It is a time to honor the people with whom we are sharing food. If we eat while on the go, hurrying to the next task, we miss the pleasure of eating, and our bodies do not have sufficient time to savor and digest. This can leave us feeling hungry for more. *When we put good intention into the food we harvest, prepare, serve and consume, we are fed in body and spirit.*

Honor the Food Web

Everything in our food system is connected. Salmon return to their ancestral rivers every year and give their lives so that others can have life. If we take too much of one food or do not give back, we disrupt the balance. Elders instruct us to return oyster shells to the beach to provide a matrix for new oysters to inhabit. *It is my responsibility to maintain the health of our food system so I can pass down a world that will support generations to come.*

Food is the Center of Culture

People have always come together around food. It is at the heart of celebrations, family gatherings, holidays and memorials. During European colonization Native Peoples' access to wild foods was suppressed, as was the right to practice cultural traditions. This changed peoples' relationships with the land, the seasons and their community. *As we eat together, we tell stories, share songs, observe protocols and remember our connection to the land, the water, and each other. These hold together the deep values embedded in our culture.*

Traditional Foods are Whole Foods

Traditional foods are "real foods" that are grown in nature. A whole food consists of one ingredient. It is not industrialized, genetically modified, refined, or blended with additives, dyes or chemicals. Our ancestors believed that good food satisfies the wholeness within us, while most modern foods are fragmented and can leave us hungry. *I imagine walking through the grocery store with my great grandparents and wonder: What would they recognize as food?*

Eat with the Seasons

We live in a time when many people do not know where their food comes from. Native people historically traveled to areas where food was in season. In spring, families visited prairies to harvest and cultivate camas. In summer, people camped where berries were ripe. And always, people congregated at abundant fish runs and seasonal bird migration sites. *Eating seasonal foods reconnects me to the rhythm of the land, which is intertwined with my own rhythms.*

Eat a Variety of Foods

Before European contact, Northwest Coastal Native People ate over 300 types of foods and therefore received a wide variety of nutrients in their diet. Today, most Americans eat only 12-20 foods on a regular basis. This negatively impacts our health and the health of the environment. *When I eat a wide variety of foods, I ensure my own health and promote biodiversity.*

Eat Local Foods

Plants breathe, drink water, and absorb nutrients. After they are cut off from their life source, they begin to lose vitality. The fresher the food, the better it is for you. Eating local food supports our local economy, and protects the environment by reducing the amount of fossil fuels used to transport food to us. *When I choose local foods, I help grow a strong regional food system. I taste the bounty of the land to which I belong.*

Wild & Organic Foods are Better for Health

The health of the environment determines the health of our food. Wild foraged foods usually contain complex nutrients. Industrial agricultural practices with harmful pesticides and fertilizers deplete the health of the soil and the plants and animals it supports. Organic gardening is simply returning to the way our ancestors grew food. *As we return to a sustainable way of growing food, our health and the health of the land we cultivate will thrive.*

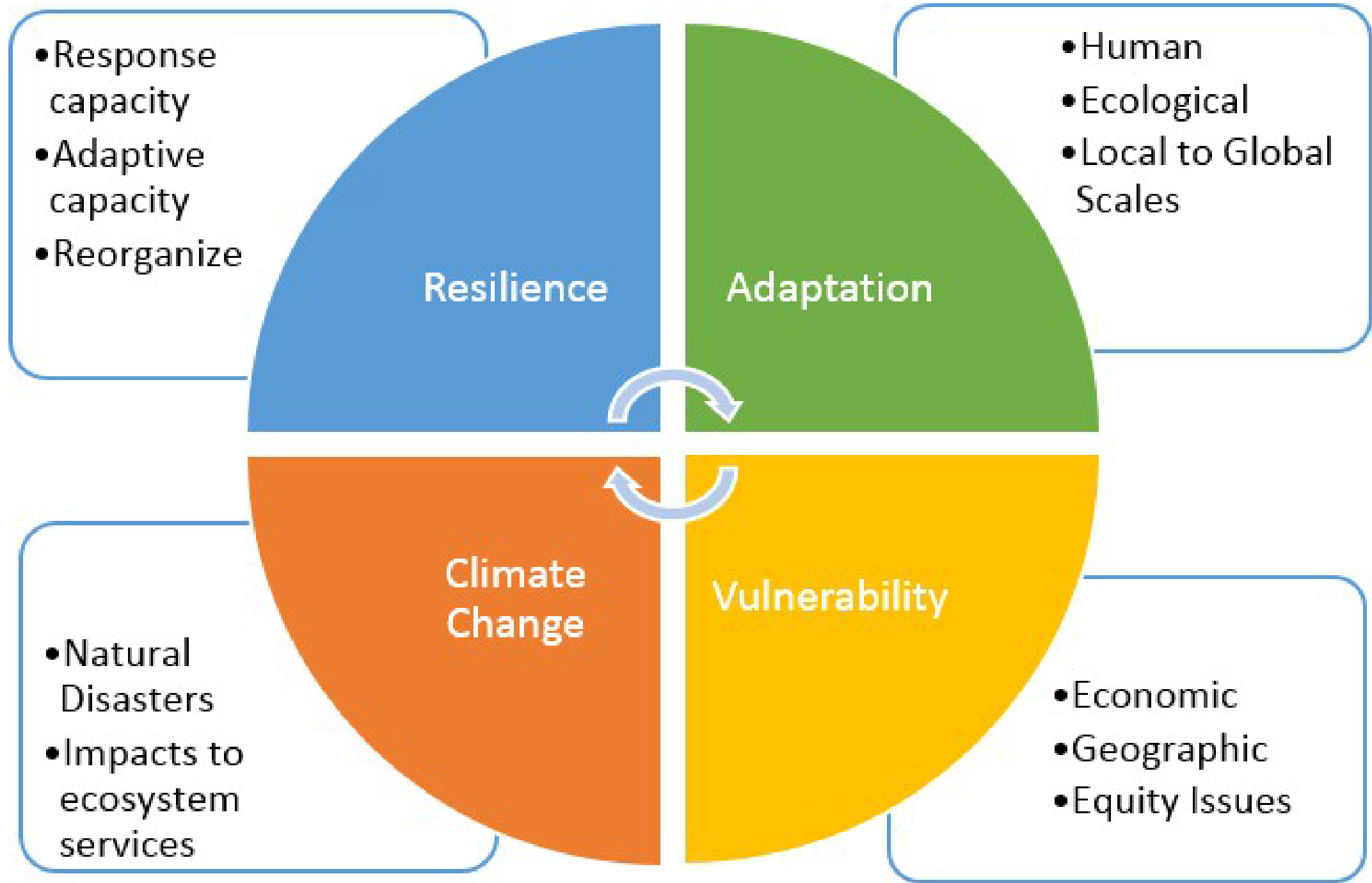


NORTHWEST INDIAN COLLEGE
Xwilem Elh-Tat-Nexw-Squl

Researched, edited and compiled by Elise Krohn and Valerie Segrest. These principles emerged from conversations with many tribal stakeholders in Western Washington during the Northwest Indian College's Traditional Foods of Puget Sound Project. For more information on our traditional foods and medicines projects and educational resources, visit: www.nwicplantsandfoods.com
Funding provided by United States Department of Agriculture, and tribal contributions. Artwork by Roger Fernandes, designed by Annie Brulé. © 2013 Northwest Indian College.



Environmental Climate Resiliency



Native Americans: S, W, O, T

- Strengths

- Abundant land and resources
- Religious practices at the core of society.
- Were intimately aware of their environments
- Were isolated from Europe and Asia by oceans..?

- Weaknesses

- Geographically fragmented, large open land with mountains, rivers, swamps etc.
- Fewer domesticated animals, limiting agriculture and transportation
- Limited centralized political infrastructure
- Exchange of knowledge was difficult
- Antiquated weapons

Week 4 Big Picture Questions again...

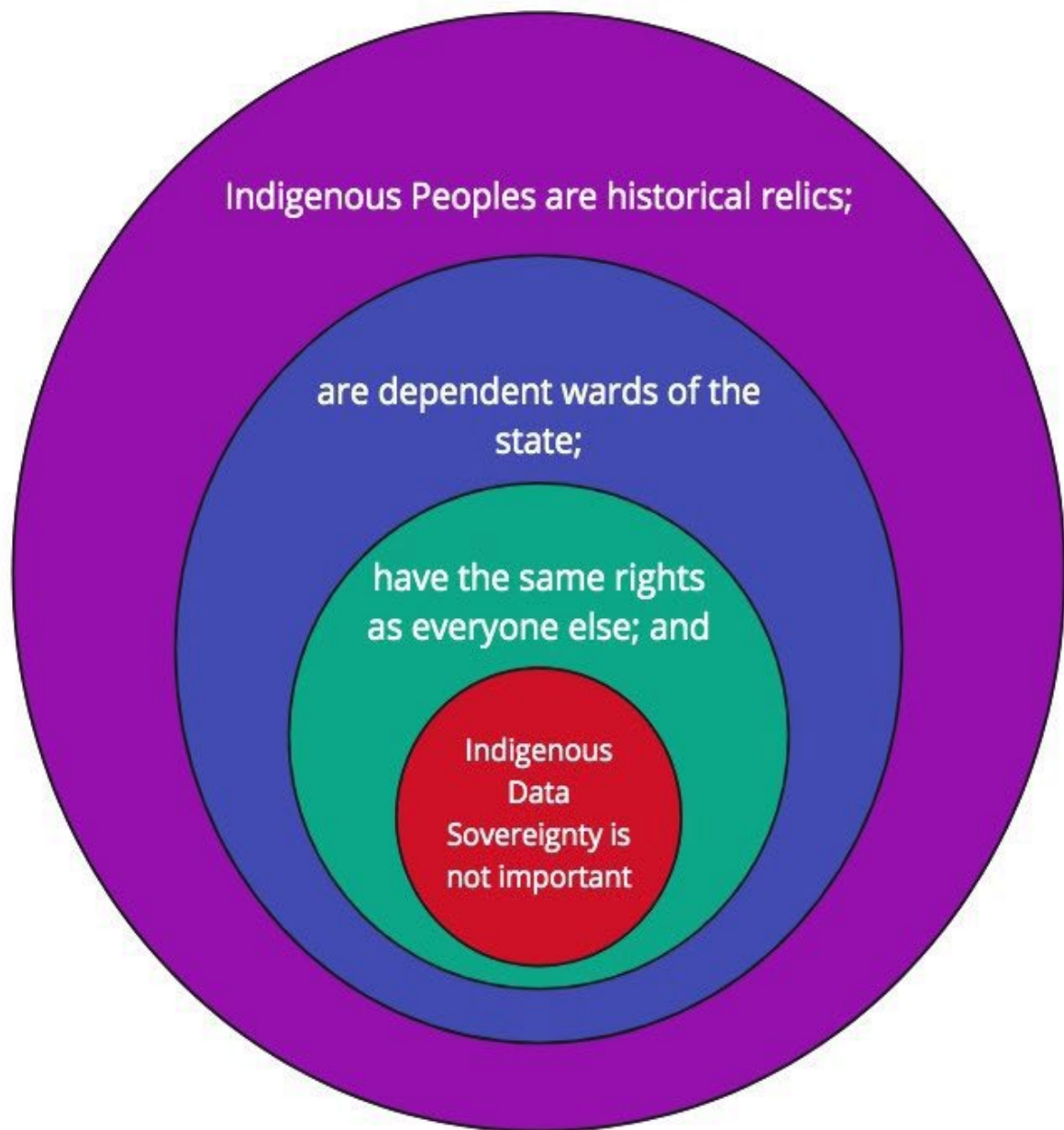
- Can colonialism and conservation coexist?
 - Does colonialism = over consumption ?
- What is the relationship between population size and forced innovation/technology?

UNI Stewardship Statement

The University of Northern Iowa honors the ancestral stewards of the land on which our university rests. Among these stewards are the Báxoje or Bah Kho-Je (Iowa), oθaakiiwaki·hina·ki (Sauk) and Meškwahki·aša·hina (Fox), Očhéthi Šakówinj (Sioux), Umóⁿhoⁿ (Omaha), and Hocaḱ (Ho-Chunk), as well as those tribal nations who are contemporary caretakers of land in Iowa, including the Meskwaki: Sac and Fox Tribe of the Mississippi in Iowa. *We acknowledge the sovereignty of your tribal nations and the violent and painful histories of removal and dispossession as the original caretakers of the land.*

<https://president.uni.edu/stewardship-statement>

Colonizing



Decolonizing

